County of Madera
California Environmental Quality Act (CEQA)
Initial Study

1. Project title:	Prj #2023-002 – Mixed Use Development
2. Lead agency name and address:	County of Madera Community and Economic Development Department 200 West 4th Street, Suite 3100 Madera, California 93637
3. Contact person and phone number:	Annette Kephart, Senior Planner 559-675-7821 Annette.Kephart@maderacounty.com
4. Project Location & APN:	The subject property is located on the southeast corner at the intersection of Avenue 12 and Jason CT (no situs) Madera. APN #: 049-590-033; 034; 035; 036
5. Project sponsor's name and address:	Legacy Realty and Development 5390 E. Pine Avenue, Fresno, CA 93727
6. General Plan Designation:	NC (Neighborhood Commercial)
7. Zoning:	Existing: RRS (Residential, Rural, Single Family District) Proposed: PDD (Planned Development District)

8. Description of project:

Legacy Realty and Development., (applicant) requests a zone change, lot line adjustment, conditional use permit (CUP), and other County approvals and authorizations allowing for the construction and operation of 1) a professional medical office, 2) a convenience store, gas station, and carwash, and 3) a coffee shop on an approximately five-acre site located in the unincorporated community of Madera Ranchos in Madera County as shown on Figure 1, “Area.” Collectively, the requested entitlements are referred to herein as the project.

The project site consists of four contiguous parcels identified as assessor parcel numbers (APNs) 049-590-033, 049-590-034, 049-590-305, and 049-590-036 as shown on Figure 2, “Project Site,” that compose an area of 205,780 square feet (SF), or 5.01 acres. The project site is topographically flat and undeveloped, with vegetation managed through regular discing and other weed abatement methods.

Each of the four project parcels have a County General Plan land use designation of NC (Neighborhood Commercial) and zoning designation of RRS (Residential, Rural, Single Family District). The properties to the north of Avenue 12 north of the project site have a land use designation of CC (Community

Commercial), and are zoned CRM (Commercial, Rural, Median District) with an MHA (Manufactured Housing Architectural Review Overlay), and primarily consist of retail establishments. To the east, west, and south of the project site, properties have a land use designation of NC (Neighborhood Commercial). Jason Court is a County public street adjacent to the west of the project site. The property to the west of the northern portion of the project site is zoned PDD (Planned Development District), and is developed with a single-family residence and retail store. The properties to the east and south of the project site are zoned RRS (Residential, Rural, Single Family District) and are developed with an existing commercial storage facility, residence, and orchard.

The applicant is proposing a zone change for all four of the project site parcels from RRS (Residential, Rural, Single Family District) to PDD (Planned Development District), which is consistent with the existing Madera County General Plan land use designation. As specified in the Madera County Code of Ordinances chapter 18.67, the PDD designation is to encourage and facilitate creative and innovative use of land that may otherwise be limited or prohibited in other zoning designations. The PDD district is designed to allow diversity in the relationship between buildings and open spaces so as to create unique, interesting physical environments that maximize usable open space while at the same time preserving the public health, safety, and welfare.

The applicant is also proposing a lot line adjustment to reconfigure the four parcels to accommodate the proposed development, with lot line adjustments as shown on Figure 3, "Proposed Lot Line Adjustments," creating four parcels with the following square footage (SF) areas:

Proposed Parcel A (northwest portion of site): 41,284 SF
Proposed Parcel B (northeast portion of site): 43,025 SF
Proposed Parcel C (southwest portion of site): 89,346 SF
Proposed Parcel D (southeast portion of site): 23,712 SF
Total Area: 196,712 SF (4.5 acres)

Also as shown on Figure 3, the lot line adjustment would reconfigure the northwesternmost parcel to accommodate realignment of the northern portion of Jason Court to create a four-way intersection with Avenue 12 and Fernwood Drive. The applicant would dedicate the necessary right-of-way to the County for the Jason Court realignment and for road and sidewalk improvements along the project site's northern frontage along Avenue 12. Ingress and egress to the site would be provided via a proposed 40-foot-wide full access driveway on the west of the site connecting with Jason Court and a proposed 40-foot-wide driveway on the north side of the site connecting with Avenue 12.

The project also would involve development of three buildings, a carwash, and a six-pump gas canopy, as shown on Figure 4, "Proposed Site Plan."

Building A would be located on the southwest portion of the site on proposed Parcel C and would be an approximately 11,160 SF single-story structure permitted for use as a professional medical office. Parking for Building A uses would include 85 standard vehicle parking stalls, five accessible vehicle parking stalls, and twenty-five electric vehicle parking stalls, for a total of 115 parking stalls. Building A would be permitted to operate Monday through Friday from 7:00 a.m. to 6:00 p.m. Building A's use is estimated to involve 46 workers and an average of 200 customers a day.

Building B would be located in the northwest portion of the site on proposed Parcel A and would be an approximately 2,364 sf single-story building permitted for use as a coffee shop. Building B would include a drive-through window located on the southwest side of the building, with the entrance to the drive-through

located on the northeast side of the building. Parking for Building B would include 17 standard parking stalls, 2 accessible vehicle parking stalls, and 4 electric vehicle parking stalls, for a total of 25 parking stalls. Building B would be permitted to operate 7 days a week, 24 hours a day. Building B's use is estimated to involve approximately 15 workers and an average of 500 customers daily.

Building C would be located in the northeast portion of the site on proposed Parcel C, and would be an approximately 4,100 sf single-story structure permitted for use as a convenience store/gas station. Building C would be permitted to operate 7 days a week, 24 hours a day. have three employees with an average of 667 customers per day. Parking for Building C would include 11 standard vehicle parking stalls, 2 accessible vehicle parking stalls, and 4 electric vehicle parking stalls. A vehicle fueling area would be constructed north of Building C as shown on Figure 4, and would contain six (6) fuel pumps each with capacity to serve two vehicles at a time (one on each side). The fuel pump area would be covered by a canopy over an approximately 4,025 sf area. Underground fuel storage tanks would be installed adjacent to the east of the fueling area. A drive-through carwash would be located east of Building C with vehicle entry from the west and along the south of Building C.

Buildings A, B, and C will also provide bicycle parking spaces.

Electricity, natural gas, solid waste collection, and other utility services would be provided by existing area utility providers.

Figure 1 Project Area

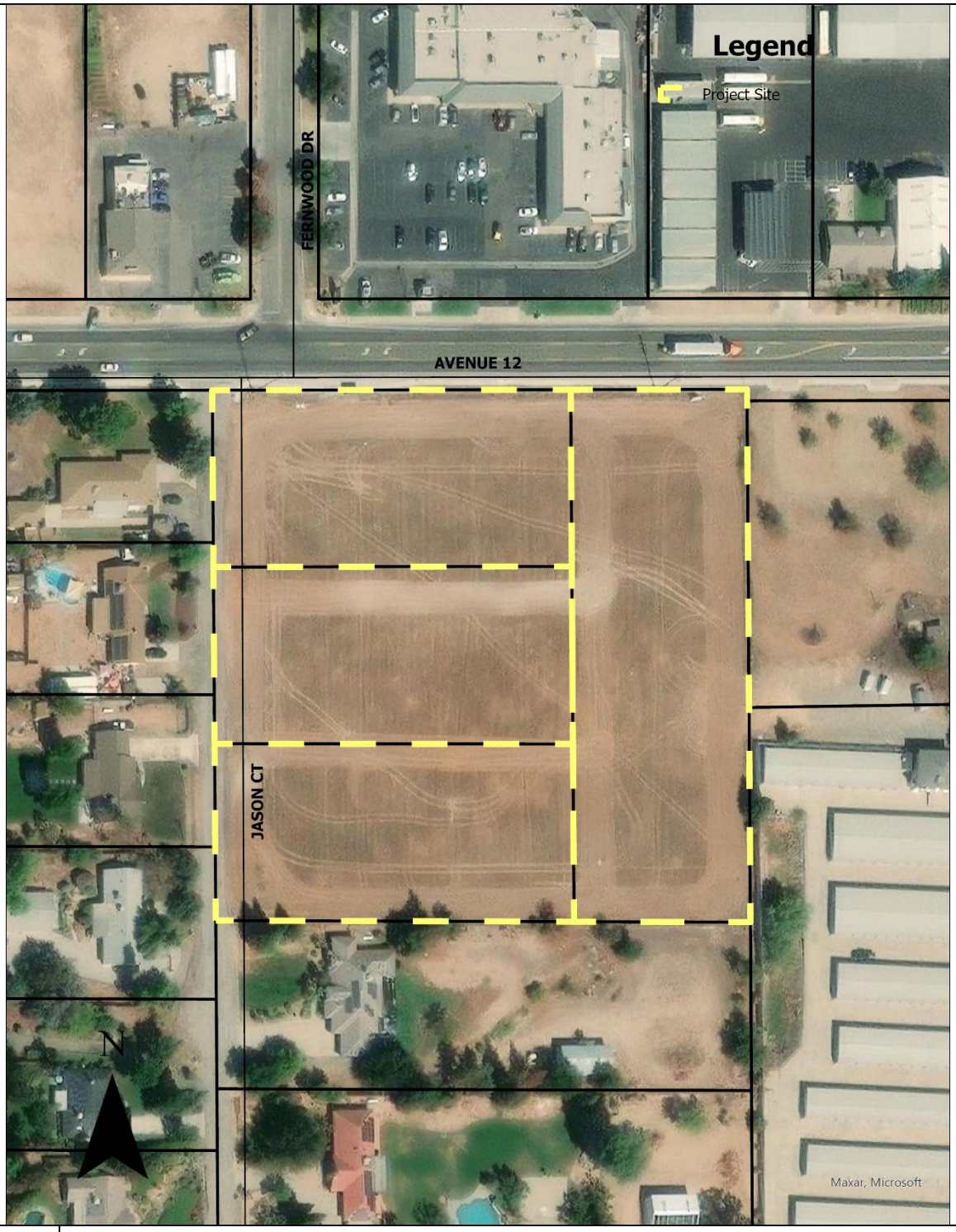

Figure 2 Project Site

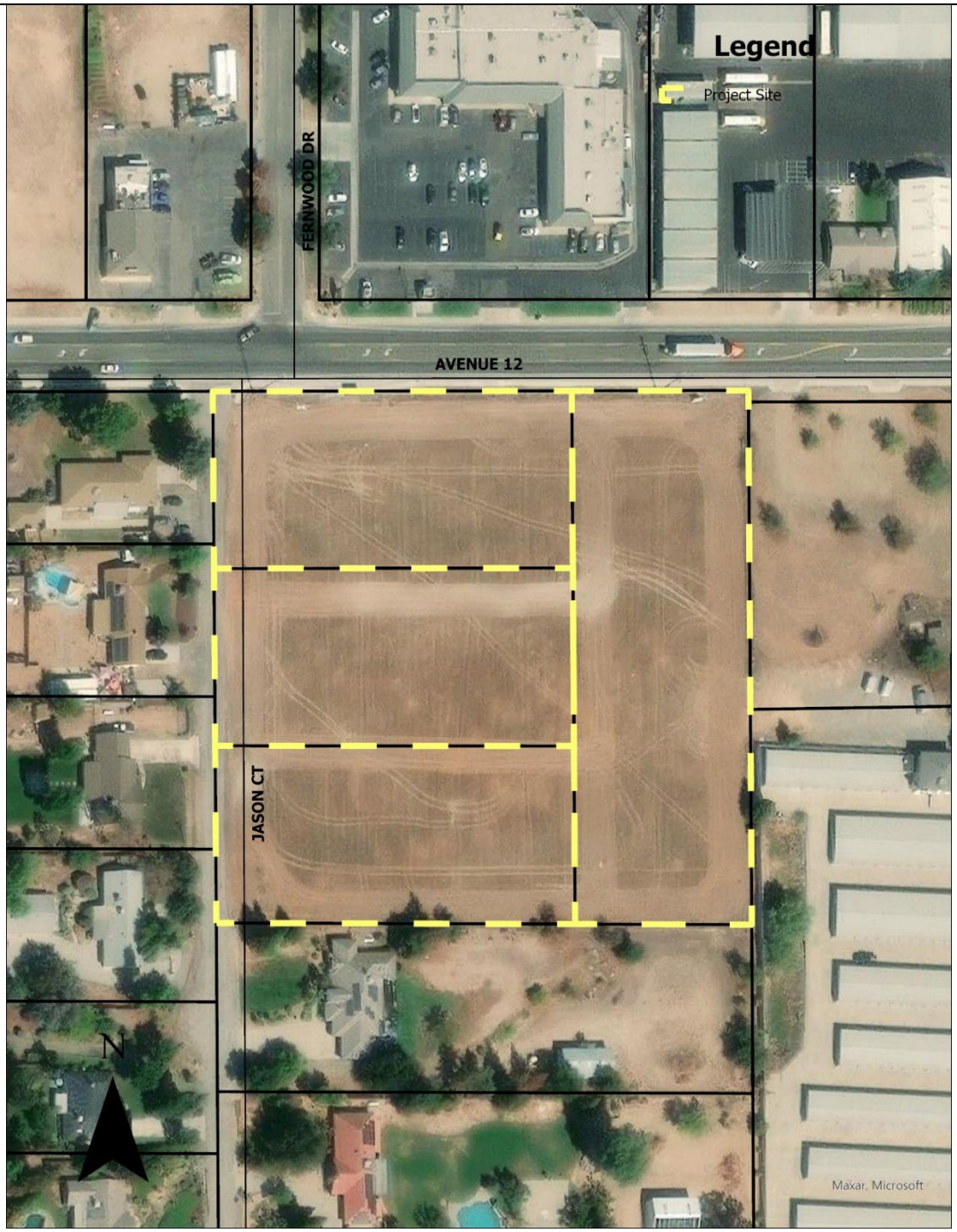

Figure 3 Proposed Lot Line Adjustments

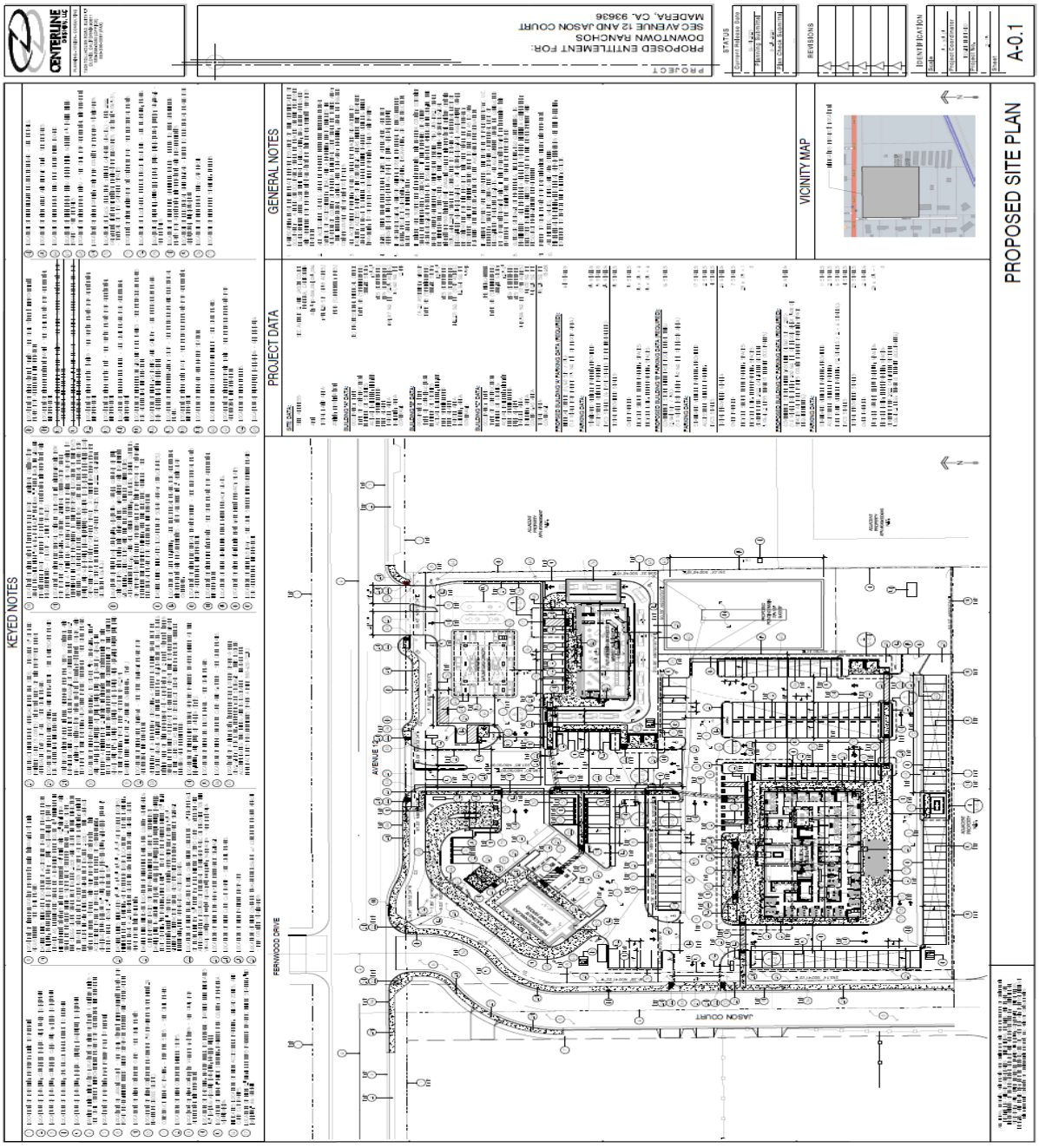

Figure 4 Site Plan

9. Surrounding Land Uses and Setting:

The properties to the north of the project site have a land use designation of CC (Community Commercial), and are zoned CRM (Commercial, Rural, Median District) with an MHA (Manufactured Housing Architectural Review Overlay), and primarily consist of retail establishments. To the east, west, and south of the project site, properties have a land use designation of NC (Neighborhood Commercial). Jason Court is a County public street adjacent to the west of the project site. The property to the west of the northern portion of the project site is zoned PDD (Planned Development District), and is developed with a single-family residence and retail store. The properties to the east and south of the project site are zoned RRS (Residential, Rural, Single Family District) and are developed with an existing commercial storage facility, residence, and orchard.

10. Other Public Agencies Whose Approval is Required:

None.

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

In accordance with Public Resources Code Section 21080.3.1, notification letters were sent to tribal representatives of California Native American tribes that have requested to be notified of projects within the project area of Madera County. Tribal representatives were advised of the project and invited to request formal consultation with the County regarding the project within 30 days of receiving the notification letters. Eight notification letters were sent to representatives of the following tribes on April 11, 2022:

- Table Mountain Rancheria
- Picayune Rancheria of the Chukchansi Indians
- Dumna Wo Wah Tribal Government
- Chowchilla Yokuts Tribe

As of the preparation of this Initial Study, more than 30 days following the County's transmittal of notification letters, no requests for consultation have been received. Section XVIII of this Initial Study provides additional discussion of tribal cultural resources and outreach.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

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

DETERMINATION (to be completed by Lead Agency)

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 or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
☐	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
☐	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signed: Annette Kephart Date: 12/27/2023

I. AESTHETICS Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☒	☐	☐

Responses:

(a) No Impact. The project site is not within the viewshed of any areas designated as or having the characteristics of scenic vistas, therefore, the project would not have the potential to adversely affect a scenic vista.

(b) No Impact. According to the California State Scenic Highway System Map there is one eligible highway (State Route [SR] 49) in the County (CalTrans, 2023). SR 49 is over twenty miles away from the project site and the project is not within the viewshed of SR 49; therefore, the project would not have the potential to adversely affect scenic resources within a state scenic highway.

(c) Less Than Significant Impact. The project site is largely vacant and does not represent a unique or otherwise important visual resource. The development of three buildings, a carwash, and a six pump gas canopy would modify but would not be considered to have a significant adverse impact on the existing visual character or quality of public views of the site and its surroundings. To the immediate north of the project site is a shopping center that consists of an ATM kiosk, supermarket, auto parts store, with several other retail and restaurant services. The Golden Valley Unified School District Office which consists of several mobile offices, and has parking for school busses is also located to the north of the project site. The project's proposed development of commercial buildings and uses is consistent with existing development along Avenue 12 within the project area. The project's change in the visual character of the site would be consistent with surrounding development and would not conflict with applicable zoning and other regulations governing scenic quality. Therefore, the project's visual impact is considered less than significant.

(d) Less than Significant Impact With Mitigation. The project is in an area where development exists to the north and single family residents to the south which contribute to existing nighttime lighting with the project area. The project would include lighting associated with buildings, the gas

pump canopy area, and parking lot lighting. With the implementation of AES MM-1, the potential lighting impacts of the project would be less than significant.

> ***(AES MM-1)*** *Lighting shall be hooded and directed down and away from neighboring parcels to minimize light disbursement and to avoid direct light spill to offsite areas.*

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
II. AGRICULTURAL AND FORESTRY RESOURCES In determining whether agricultural impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.				
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Responses:

(a) No Impact. The project site is designated as “Semi-AG and Rural Commercial Land” (refer to figure 2) by the California Department of Conservation (DOC) Farmland Mapping and Monitoring Program (Department of Conservation, 2016). The project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use.

(b) No Impact. The project site is not subject to a Williamson Act contract. The existing zoning

designation of the project site's four parcels is RRS (residential, rural, single family dwelling) and the project would redesignate the zoning to PDD (planned development district). Madera County code of ordinance section 18.11.040 describes the purpose of the RRS designation is "to provide for single dwelling units on large lots with some accessory agricultural uses. It is intended that this zone be applied to areas that are rural in character, where the retention of low density residential development is desired." Although the existing zoning designation allows for "some accessory agricultural use," the existing zoning is not for agriculture and the site is not currently used for agriculture. The project would not conflict with agricultural zoning and would not conflict with a Williamson Act contract.

(c - d) No Impact. The project site does not contain forest land or forest resources and is not zoned for such uses.

(**e) No Impact**. The project would not convert agricultural land to a non-agricultural use..

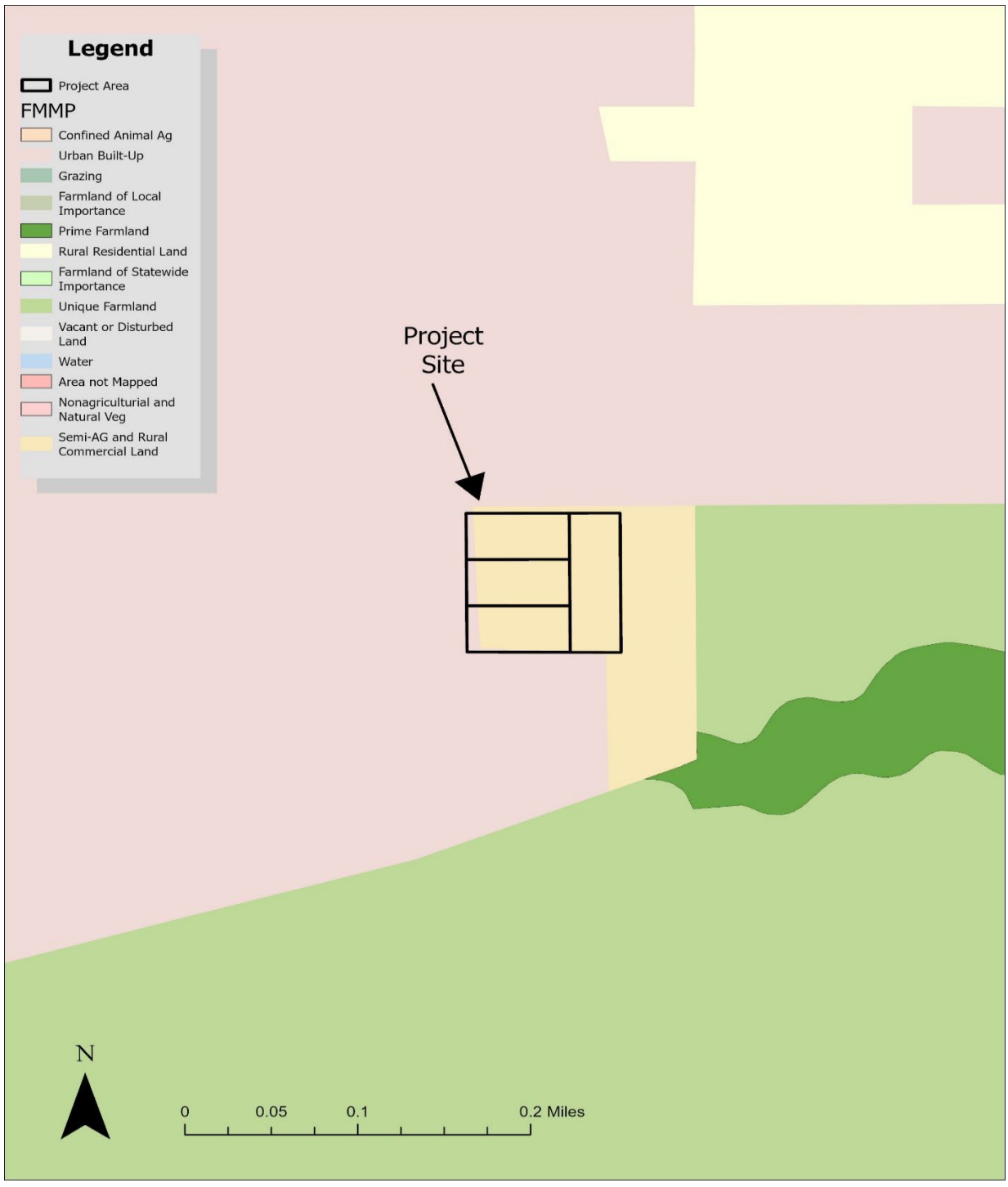

Figure 2 Farmland

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

An "Air Quality and Greenhouse Gas Impact Assessment for the Madera Ranchos Development" (AQIA) (Stantec 2023) was prepared for the project and is included in Appendix A of this Initial Study. Information and analysis from the AQIA are incorporated in the responses below.

Responses:

(a) Less Than Significant Impact. Air Quality Plans (AQPs) are plans for reaching attainment of air quality standards. The assumptions, inputs, and control measures are analyzed to determine if the SJVAB can reach attainment for the ambient air quality standards. To show attainment of the standards, the SJVAPCD analyzes the growth projections in the valley, contributing factors in air pollutant emissions and formations, and existing and adopted emissions controls. The SJVAPCD then formulates a control strategy to reach attainment that includes both State and SJVAPCD regulations and other local programs and measures. The applicable AQPs include the 2016 8-Hour Ozone Plan which contains measures to achieve reductions in emissions of ozone precursors and sets plans towards attainment of ambient ozone standards by 2031 and the 2018, 2016, 2015, 2012, and 2008 PM2.5 Plans to address multiple PM2.5 air quality standards and attainment deadlines.

Contribution to Air Quality Violations

A measure of determining if the project is consistent with the air quality plans is if the project would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations or delay timely attainment of air quality standards or the interim emission reductions specified in the air quality plans. Because of the region's nonattainment status for ozone, PM2.5, and PM10, if project-generated emissions of either of the ozone precursor pollutants (ROG and NOx), PM10, or PM2.5 would exceed the SJVAPCD's significance thresholds,

then the project would be considered to conflict with the attainment plans. As discussed further at response “b” below and presented in the AQIA at Impacts AIR-1 and AIR-2 (Appendix A), emissions of ROG, NOX, PM10, and PM2.5 from construction and operation of the project would not exceed the San Joaquin Valley Air Pollution Control District’s (SJVAPCD’s) significance thresholds which are also used by the County for this analysis. Additionally, as discussed further at item “c” below and presented in the AQIA at Impact AIR-3 (Appendix A), with mitigation the project would not expose sensitive receptors to a substantial pollutant concentration with implementation of AQ MM-1. Therefore, the Project would not contribute to air quality violations.

Consistency with Assumptions in AQPs

The primary way of determining consistency with the AQP’s assumptions is determining consistency with the applicable General Plan to ensure that the project’s population density and land use are consistent with the growth assumptions used in the AQPs for the SJVAB. As required by California law, city and county General Plan contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth and designates locations for land uses to regulate growth. The MCTC uses the growth projections and land use information in adopted general plans, among other sources to estimate future average daily trips and then vehicles miles traveled (VMT), which are then provided to the SJVAPCD to estimate future emissions in the AQPs. Existing and future pollutant emissions computed in the AQPs are based on land uses from area general plans. AQPs detail the control measures and emission reductions required for reaching attainment of the air standards based on these growth and emission estimates. The applicable General Plan for the project is Madera County General Plan. The Land Use Element of the General Plan was adopted in 1995, prior to the SJVAPCD’s adoption of the applicable AQPs. Madera County has designated the project site as a NC (Neighborhood Commercial District (Madera County 2022). Therefore, the Project would be consistent with the modeling used to prepare the AQPs (Stantec, 2023). The impact would be less than significant.

(b) Less Than Significant Impact. Air pollutant emissions have regional effects and localized effects. This analysis assesses the regional effects of the Project’s criteria pollutant emissions in comparison to SJVAPCD thresholds of significance for short-term construction activities and long-term operation of the project. Localized emissions from Project construction and operation are also assessed using concentration-based thresholds that determine if the Project would result in a localized exceedance of any ambient air quality standards or would make a cumulatively considerable contribution to an existing exceedance. The primary pollutants of concern during Project construction and operation are ROG, NOx, PM10, and PM2.5. The SJVAPCD GAMAQI adopted in 2015 contains thresholds for ROG and NOx; SOX, CO, PM10, and PM2.5. Ozone is a secondary pollutant that can be formed miles away from the source of emissions through reactions of ROG and NOx emissions in the presence of sunlight. Therefore, ROG and NOx are termed ozone precursors. The SJVAB often exceeds the state and national ozone standards. Therefore, if the Project emits a substantial quantity of ozone precursors, the Project may contribute to an exceedance of the ozone standard. The SJVAB also exceeds air quality standards for PM10 and PM2.5; therefore, substantial Project emissions may contribute to an exceedance for these pollutants. The SJVAPCD’s annual emission significance thresholds used for the Project define substantial contribution to both operational and construction emissions are provided in Table 1.

Construction Emissions

Construction emissions associated with the Project are shown in Table 9. For assumptions in

estimating the emissions, please refer to Modeling Parameters and Assumptions. Construction emissions provided in Table 2 are unmitigated. Implementation of AQ MM-1 would further reduce emissions. As shown in Table 2, the emissions are below the significance thresholds and, therefore, are less than significant.

Table 1: SJVAPCD Significance Thresholds

Pollutant	Significance Threshold	
	Construction Emissions (tons/year)	Operational Emission tons/year
CO	100	100
NOx	10	10
ROG	10	10
So_x	27	27
PM_{10}	15	15
PM2.5	15	15

Table 2: Construction Emissions

Source	Emissions (Tons/Year)					
	ROG	NO_x	CO	So_x	PM_{10}	$PM_{2.5}$
2023	0.81	2.73	2.89	0.01	0.24	0.15
2024	0.20	1.10	1.25	<0.001	0.08	0.05
Significance Thresholds	10	10	100	27	15	15
Exceed Significance Thresholds?	No	No	No	No	No	No

Operations

The emissions output for project operation at full buildout for 2025 are summarized in Table 3. As shown in Table 3, the operational emissions would be less than the thresholds of significance for all criteria air pollutants. The impact is less than significant.

Table 3: Operational Emissions

Source	Emissions (Tons/Year)					
	ROG	NO_x	CO	So_x	PM_{10}	$PM_{2.5}$
Area	0.11	<0.01	0.01	0.00	<0.01	<0.01
Energy	<0.01	0.04	0.03	<0.01	<0.01	<0.01
Mobile	1.95	2.71	14.20	0.03	2.45	0.68
Total	2.07	2.75	14.23	0.03	2.46	0.68
Significance Thresholds	10	10	100	27	15	15
Exceed Significance Thresholds?	No	No	No	No	No	No

If an area is in nonattainment for a criteria pollutant, then the background concentration of that pollutant has historically exceeded the ambient air quality standard. It follows that if a project

exceeds the regional threshold for that nonattainment pollutant, then it would result in a cumulatively considerable net increase of that pollutant and result in a significant cumulative impact. The SJVAB is in nonattainment for PM10, PM2.5, and ozone. Therefore, if the project exceeds the regional thresholds for PM10, or PM2.5, then it contributes to a cumulatively considerable impact for those pollutants. If the project exceeds the regional threshold for NOx or ROG, then it follows that the project would contribute to a cumulatively considerable impact for ozone. The criteria pollutant emissions analysis, as shown in above, assessed whether the project would exceed the SJVAPCD's thresholds of significance.

As shown in Table 2 and Table 3 criteria pollutant emissions would not exceed any threshold of significance during project construction or operation. Therefore, the combination of unmitigated project emissions with the criteria pollutants from other sources within the SJVAB would not cumulatively contribute to a significant impact according to this criterion.

The project is consistent with all applicable control measures in the air quality attainment plans. The project would be required to comply with any SJVAPCD rules and regulations that may pertain to implementation of the AQPs. Therefore, impacts would be less than significant with regard to compliance with control measures and regulations. The SJVAB is in nonattainment for ozone, PM10, and PM2.5, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (such as children, the elderly, and the infirm). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience health effects. Adverse health effects induced by ozone includes short-term effects such as coughing, difficulty breathing, and sore throat as well as long-term effects including inflamed or damaged airways, aggravated lung diseases like asthma or bronchitis, and increased frequency of asthma attacks. O3 is created through chemical reactions between NOx, ROG, and oxygen (USEPA 2022c). Therefore, the health effects related to O3 are the product of emissions generated by numerous sources throughout the region. Exposure to particulate matter (PM10 and PM2.5) can affect the lungs and heart and may cause irregular heartbeat, aggravated asthma, and decreased lung function (USEPA 2022d). Direct sources of particulate matter include construction sites, unpaved roads, fields, and fires. Particulate matter is also formed indirectly as a result of complex reactions of chemicals such as SOx and NOx (USEPA 2022d). The SJVAPCD has acknowledged that while HRAs for localized air toxic impacts are commonly prepared, the currently available modeling tools are not equipped to provide a meaningful analysis of the correlation between an individual development project's criteria air pollutant emissions and specific human health impacts (SJVAPCD 2015b). The South Coast Air Quality Management District (SCAQMD) states that based on their own modeling in the SCAQMD's 2012 Air Quality Management Plan, a reduction of 432 tons (864,000 pounds) per day of NOx and a reduction of 187 tons (374,000 pounds) per day of VOC would reduce O3 levels at the highest monitored site by only nine parts per billion. As such, the SCAQMD concludes that it is not currently possible to accurately quantify O3-related health impacts caused by NOx or VOC emissions from relatively small projects (defined as projects with regional scope) due to photochemistry and regional model limitations (SCAQMD 2015). The regional analysis of construction and operational emissions, as shown above indicates that the Project would not exceed the SJVAPCD's significance thresholds, and the Project is consistent with the applicable AQPs. Therefore, the project's emissions would not have a measurable effect on human health and would not result in significant cumulative health impacts from nonattainment pollutants and therefore the project would be less than significant (Stantec, 2023).

(c) Less Than Significant Impact With Mitigation. A sensitive receptor is a person in a population who is particularly susceptible to health effects due to exposure to an air contaminant. The following are land uses (sensitive sites) where sensitive receptors are typically located:

- **(a)** Long-term health care facilities
- **(b)** Rehabilitation centers
- **(c)** Hospitals
- **(d)** Retirement homes
- **(e)** Residences
- **(f)** Schools, playgrounds and childcare centers

The proposed Project is not considered a sensitive receptor once operational, however there are nearby offsite residents adjacent to the project site.

Localized Impacts

Emissions occurring at or near the project have the potential to create a localized impact also referred to as an air pollutant hotspot. Localized emissions are considered significant if when combined with background emissions, they would result in exceedance of any health-based air quality standard. In locations that already exceed standards for these pollutants, significance is based on a significant impact level (SIL) that represents the amount that is considered a cumulatively considerable contribution to an existing violation of an air quality standard. The pollutants of concern for localized impact in the SJVAB are NO_2, SO_X, and CO.

The SJVAPCD has provided guidance for screening localized impacts in the GAMAQI that establishes a screening threshold of 100 pounds per day of any criteria pollutant. If a project exceeds 100 pounds per day of any criteria pollutant, then ambient air quality modeling would be necessary. If the project does not exceed 100 pounds per day of any criteria pollutant, then it can be assumed that it would not cause a violation of an ambient air quality standard.

Construction: Localized Concentrations of PM_{10}, $PM_{2.5}$, CO, and NO_2

Local construction impacts would be short-term in nature lasting only during the duration of construction. Because of the short duration and limited amount of construction anticipated for the Project, application of best management practices through compliance with Regulation VIII Fugitive Dust Prohibitions to minimize construction emissions, and levels of emissions less than the SJVAPCD's emission significance thresholds, localized construction concentrations are considered less than significant. It should also be noted that the on-site construction emissions would be less than 100 pounds per day for each of the criteria pollutants, as shown in Table 4 below. To present a conservative estimate, daily maximum emissions from the CalEEMod output files were compared to localized significance thresholds. These daily maximum emissions account for both on-site and off-site emissions. It should be noted that the estimates below do not include reductions associated with Rule 9510 compliance, which would reduce NOx and PM10 emissions. Based on the SJVAPCD's guidance the construction emissions would not cause an ambient air quality standard violation. Impacts would be less than significant.

Table 4: Localized Concentrations of PM_{10}, $PM_{2.5}$, CO, and NO_x for Construction

Source	On-site Emissions (pounds per day)			
	NOx	CO	PM_{10}	$PM_{2.5}$
Maximum On-site Daily Construction Emissions (2023)	43.00	46.77	10.0	4.67
Maximum On-site Daily Construction Emissions (2024)	29.51	34.82	2.12	1.41
Significance Thresholds	100	100	100	100
Exceed Significance Thresholds?	No	No	No	No
Notes: PM10 and PM2.5 emissions are from the unmitigated output and as a result are more conservative as they do not reflect compliance with Regulation VIII—Fugitive PM10 Prohibitions. The table only accounts for on-site construction emissions. Source of Emissions: CalEEMod Output (Daily maximum emissions in the table account for on-site and off-site emissions. Source of Thresholds: SJVAPCD 2015.				

Operation: Localized Concentrations of PM_{10}, $PM_{2.5}$, CO, and NO_2

Localized impacts could occur in areas with a single large source of emissions such as a power plant or with multiple sources concentrated in a small area such as a distribution center. As a small commercial center, the proposed project would not be expected to cause a local exceedance for on-site emissions.

Construction

Reactive Organic Gases (ROG): During paving operations, ROG is emitted. The amount emitted is dependent on the amount of ROG (or VOC) in the paving materials. There are three types of asphalt that are typically used in paving: asphalt cements, cutback asphalts, and emulsified asphalts. However, SJVAPCD Rule 4641 prohibits the use of the following types of asphalt: rapid cure cutback asphalt; medium cure cutback asphalt; slow cure asphalt that contains more than one-half (0.5) percent of organic compounds that evaporate at 500 degrees Fahrenheit (°F) or lower; and emulsified asphalt containing organic compounds, in excess of 3 percent by volume, that evaporate at 50°F or lower. An exception to this is medium cure asphalt when the National Weather Service official forecast of the high temperature for the 24-hour period following application is below 50°F. The acute (short-term) health effects from worker direct exposure to asphalt fumes include irritation of the eyes, nose, and throat. Other effects include respiratory tract symptoms and pulmonary function changes. The studies were based on occupational exposure of fumes. Sensitive receptors are not in the immediate vicinity of the fumes; therefore, they would not be subjected to concentrations high enough to evoke a negative response. In addition, the restrictions that are placed on asphalt in the San Joaquin Valley reduce ROG emissions from asphalt and exposure. The impact to sensitive receptors from ROG during construction is less than significant.

Naturally-Occurring Asbestos: According to a map of areas where naturally occurring asbestos in California are likely to occur (USGS 2011), there are no such areas in the Project area. Therefore, development of the project is not anticipated to expose receptors to naturally occurring asbestos. Impacts would be less than significant.

Fugitive Dust (PM10): PM10 emissions would not exceed the thresholds of significance,

nevertheless, the potential for localized PM10 health impacts are a concern, however, the Project would comply with the SJVAPCD's Regulation VIII incorporating Best Management Practices for reducing fugitive dust, thus potential impacts are reduced to a less than significant level.

Valley Fever: Valley fever, or coccidioidomycosis, is an infection caused by inhalation of the spores of the fungus, Coccidioides immitis (C. immitis). The spores live in soil and can live for an extended time in harsh environmental conditions. Activities or conditions that increase the amount of fugitive dust contribute to greater exposure, and they include dust storms, grading, and recreational off-road activities. The San Joaquin Valley is considered an endemic area for Valley fever. Construction activities would generate fugitive dust that could contain C. immitis spores. The Project will minimize the generation of fugitive dust during construction activities by complying with the SJVAPCD's Regulation VIII. Therefore, this regulation would reduce Valley fever impacts to less than significant. During operations, dust emissions are anticipated to be negligible, because most of the Project area would be occupied by buildings, pavement, and landscaped areas. This condition would preclude the possibility of the project from generating fugitive dust that may contribute to Valley fever exposure. Impacts would be less than significant.

Health Risk Assessment (HRA)

The proposed Project has the potential to generate toxic air contaminant (TAC) emissions during Project construction and gasoline service station operations. A construction and operational HRA was prepared in accordance with SJVAPCD and the Office of Environmental Health Hazard Assessment (OEHHA) guidance for the proposed project. To assess the project's total health risk impacts, impacts from both construction and operations were considered in the HRA.

Construction

Off-road, heavy-duty diesel equipment used for site grading, building construction, paving, and other construction activities result in the generation of DPM. For construction activity, DPM is the primary air toxic of concern. Because of the proximity of sensitive receptors, to the Project site there is potential for DPM emissions to result in health impacts. The construction HRA evaluated DPM (represented as exhaust PM10) emissions generated during construction of the proposed project and the related health risk impacts for sensitive receptors located within 1,000 feet of the project boundary. The concentration of DPM at these nearby sensitive receptors was calculated through EPA's AERMOD air dispersion model.

The current OEHHA guidance recommends that cancer risks be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, it recommends evaluating the risks for the third trimester of pregnancy to age zero (third trimester exposure), 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 exposure, an ASF of 3 for 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 kilograms of body weight per day (L/kg-day). As recommended, 95th percentile breathing rates are used for the third trimester and infant exposure, and 80th percentile breathing rates are used for child and adult exposure. These age- specific breathing rates are 361 L/kg-day for the third trimester receptor, 1,090 L/kg-day for the infant receptors, 572 L/kg-day for child receptors, and 233 L/kg-day for adult receptors (OEHHA 2015). According to OEHHA, the cancer risk for a residential receptor is assumed to start in the third trimester of life. Results of the

health risk analysis for the unmitigated emissions are summarized in Table 5. As shown in Table 5 the Project would exceed SJVAPCD health risk thresholds for the maximally exposed individual receptor (MEIR). As shown in Table 6, implementation of AQ MM-1 would reduce the health risks to below SJVAPCD thresholds.

Table 5: Health Risks from Project Construction at the Maximally Exposed Individual Receptor – Unmitigated

Health Impact Metric	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index (DPM)
Risks and Hazards at the MEIR[1]		
Risks and Hazards: 3rd Trimester	3.16	0.054
Risks and Hazards: Infant	40.8	0.054
Risks and Hazards: Child	5.43	0.054
Risks and Hazards: Adult	0.84	0.054
Threshold	**20**	**1**
Exceeds Threshold?	**Yes**	**No**

Notes:
[1] The maximally exposed sensitive receptor is located at an existing residence located immediately west of the project site.
[2] Chronic non-cancer hazard index was estimated by dividing the highest annual DPM concentration (as $PM_{2.5}$ exhaust) for each age group by the REL of 5 µg/m^3. Benzene concentration was divided by the REL of 3 µg/m^3.
MEIR = maximally exposed individual receptor

As shown in Table 5, the cancer risk posed to the MEIR would exceed the cancer risk significance threshold of 20 in one million for the infant scenario. Therefore, the Project would be required to implement AQ MM-1 to reduce health risk impacts. AQ MM-1 would require the use of cleaner off-road construction equipment that would reduce particulate matter exhaust emissions. Table 6 summarizes the health and hazard impacts at the MEIR after the incorporation of AQ MM-1.

Table 6: Health Risks from Project Construction at the Maximally Exposed Individual Receptor - Mitigated

Health Impact Metric	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index (DPM)
Risks and Hazards at the MEIR[1]		
Risks and Hazards: 3rd Trimester	0.24	0.004
Risks and Hazards: Infant	3.12	0.004
Risks and Hazards: Child	0.46	0.004
Risks and Hazards: Adult	0.06	0.004
Threshold	**20**	**1**
Exceeds Threshold?	**No**	**No**

Notes:
[1] The maximally exposed sensitive receptor is located at an existing residence located immediately west of the project site.
[2] Chronic non-cancer hazard index was estimated by dividing the highest annual DPM concentration (as $PM_{2.5}$ exhaust) for each age group by the REL of 5 µg/m^3.
MEIR = maximally exposed individual receptor
Source: Appendix B.

Operations

The CARB Air Quality and Land Use Handbook contains recommendations that will "help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution" (CARB 2005), including recommendations for distances between sensitive receptors and certain land uses such as gasoline service stations. As a commercial site with a gas station, the Project is identified as a land use of concern by CARB. However, the gas station would be constructed on the eastern side of the site over 300 feet from sensitive receptors that lie adjacent to the west side of the site. Regardless, to demonstrate that existing receptors would not be impacted by operation of the Project, an operational HRA was prepared. The Project is expected to generate DPM emissions from vendor and delivery trucks as well as TAC emissions from the gas pumps. Specifically, the TAC emissions released from gas pumps include benzene, ethyl benzene, n-hexane, naphthalene, propylene, toluene, and xylenes. Results of the health risk analysis are summarized in Table 7.

Table 7: Summary of the Health Impacts from Construction and Operations of the Proposed Project (70-year Scenario)

Exposure Scenario	Maximum Cancer Risk (Risk per Million)	Chronic Inhalation Hazard Index (DPM)	Chronic Inhalation Hazard Index (Benzene)
Operation Only Risk (70 Year)	13.90	0.004	-
Operation and Mitigated Construction Risk (70 Year)	17.02	0.003	0.003
Applicable Threshold of Significance	20	1	<0.003
Threshold Exceeded in Either Scenario?	No	No	No

Source: Stantec, 2023.
[1] Risk is calculated at the maximally exposed individual receptor.

As discussed above, project construction and operation would not expose nearby sensitive receptors to substantial pollutant concentration after incorporation of Mitigation Measure MM AIR-1. Therefore, the impact would be less than significant with mitigation incorporated.

> ***AIR MM-1*** *Cleaner Off-road Construction Equipment. The following mitigation measure shall be implemented during all phases of construction to reduce potential exposure of diesel particulate matter (DPM) and particulate matter less than 10 micrometers in aerodynamic diameter (PM2.5) emissions to sensitive receptors located near the Project site. Prior to the issuance of any grading and/or building permits (whichever occurs earliest), the project applicant shall prepare and submit a construction management plan that includes specifications of the equipment to be used during construction to the Director of Planning, Building and Code Enforcement or the Director's designee. The plan shall meet the standards set forth below:*
>
> ***(a)*** *For all construction equipment larger than 25 horsepower used at the site, equipment shall meet USEPA Tier 4 emission standards. Tier 4 Interim engines shall, at a minimum, meet USEPA or CARB particulate matter emissions standards for Tier 4 Interim engines.*

(b) *Alternatively, use of CARB-certified Level 3 diesel particulate filters on off-road equipment with engines greater than 75 horsepower can be used in lieu of Tier 4 Interim engines or in combination with Tier 4 Interim engines.*

(c) *The construction contractor shall maintain records documenting its efforts to comply with this requirement, including equipment lists. Off-road equipment descriptions and information shall include, but are not limited to, equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, and engine serial number.*

(d) *Monthly records of equipment usage shall be maintained. At the end of the construction for individual phases, all records shall be submitted to the County of Madera.*

(d) Less Than Significant Impact. While offensive odors rarely cause any physical harm, they can still be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the SJVAPCD. The occurrence and severity of odor impacts depends on numerous factors, including nature, frequency, and intensity of the source, the wind speed and direction, and the sensitivity of the receptor. The nearest sensitive receptor in the vicinity of the proposed Project site would be the residents at single-family homes to the west of the project site. Construction activities associated with the proposed Project could result in short-term odorous emissions from diesel exhaust associated with construction equipment. However, these emissions would be intermittent and would dissipate rapidly from the source. In addition, this diesel-powered equipment would only be present on site temporarily during construction activities. Therefore, construction would not create objectionable odors affecting a substantial number of people, and the impact would be less than significant.

Land uses typically considered associated with odors include wastewater treatment facilities, waste-disposal facilities, agricultural operations and solid waste-storage. The project site will contain three solid waste storage units located adjacent to each proposed building. Each solid waste storage unit will consist of a covered trash enclosure, minimizing obnoxious orders. The proposed Project is not located within the screening distances to sources of odors recommended by the SJVAPCD. Therefore, the impact would be less than significant.

IV. BIOLOGICAL RESOURCES Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of a native wildlife nursery site?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

A “Biological Resources Assessment – Downtown Ranchos Commercial Development” (BRA) (Acorn 2023a) was prepared for the project and is included in Appendix B of this Initial Study. Information and analysis from the BRA is incorporated in the responses below.

Responses:

(a) Less Than Significant Impact with Mitigation. A biological resources field survey of the project site was performed on May 22, 2023. No special-status species were detected during the field

survey. There are no special-status species that have a moderate or high potential to occur in the project site. The disturbed and altered condition of the project site greatly reduces habitat value and any ability to sustain rare plants or diverse wildlife assemblages. Historical aerial photography indicates that the site has been maintained pasture in the past and now is managed periodically to clear vegetation Thus, the project site does not contain any suitable habitat for regionally occurring special-status species.

Special-status bird species were reported in databases (CNDDB and USFWS) in the vicinity of the project site. The project site, and adjacent trees and utility poles, contain suitable nesting habitat for various bird species. However, no nests were observed during the field survey. If construction activities are conducted during the nesting season and nesting birds are present, nesting birds could be directly impacted by tree removal and indirectly impacted by noise, vibration, and other construction-related disturbance. Therefore, project construction is considered to have the potential to adversely impact nesting birds. Mitigation Measure BIO MM-1 requires that if construction activities occur during the nesting season (typically February through August), a pre-construction survey for the presence of special-status bird species or any nesting bird species must be conducted by a qualified biologist within 500 feet of proposed construction areas. BIO MM-1 further requires that if active nests are identified in these areas, the appropriate regulatory agency(ies) (California Department of Fish and Wildlife [CDFW] and/or U.S. Fish and Wildlife Service [USFWS] be consulted to develop measures to avoid "take" of protected bird species prior to the initiation of any construction activities. Avoidance measures may include establishment of a buffer zone using construction fencing or the postponement of vegetation removal until after the nesting season, or until after a qualified biologist has determined the young have fledged and are independent of the nest site. With the implementation of BIO MM-1, potential impacts to special-status bird species and nesting birds would be reduced to a less-than-significant level (Acorn, 2023).

> ***BIO MM-1.*** *If construction is initiated between February 1 and August 31, a qualified biologist shall conduct a pre-construction survey for the presence of special-status bird species or any nesting bird species within 500 feet of proposed construction areas. If active nests are identified in these areas, the applicant shall consult with CDFW and/or USFWS, as appropriate, to develop measures sufficient to avoid "take" of active nests or special-status bird species prior to the initiation of any construction activities.*

(b) Less Than Significant Impact. The project site is not within any designated listed species' critical habitat. The project site does not contain special-status habitats or any surface water resources. Project implementation will not impact any special-status habitats. (Acorn, 2023)

(c) Less Than Significant Impact. There are no surface water resources or wetlands within the project site, and the project would not have the potential to result in adverse effects on state or federally protected wetlands through direct removal, filling, hydrological interruption, or other means. Ground disturbance during project construction would create the potential for surface water quality degradation associated with storm water transport of sediment from disturbed soils or by accidental release of hazardous materials or petroleum products from sources such as heavy equipment servicing or refueling of construction equipment. However, the landowner and its designated general contractor must enroll under the State Water Quality Control Board's Construction General Permit (CGP) prior to the initiation of construction. In conjunction with enrollment under the CGP, a Storm Water Pollution Prevention Plan (SWPPP), Erosion Control Plan, and a Hazardous Materials Management/Spill Response Plan must be created and implemented during construction to avoid or minimize the potential for erosion, sedimentation, or accidental release of hazardous materials.

Implementation of these measures mandated by law would reduce potential construction-related impacts to water quality to a less-than-significant level (Acorn, 2023). Once constructed, stormwater runoff from impermeable surfaces on the project site (e.g., paved areas, buildings) would be directed to an onsite stormwater retention basin and which would avoid the discharge of stormwater from the site and would avoid potential release of contaminants to offsite areas.

(d) Less Than Significant Impact. No wildlife corridors or fisheries exist within, or near, the project site. Because the project site is an in-fill lot nestled within a suburban setting and a busy transportation corridor, the project site does not facilitate animal movement or migrations. Thus, the project would have a less than significant impact upon wildlife movement (Acorn, 2023).

(e-f) No Impact. Implementation of the project would not require the removal of native trees. Landscape trees (a mulberry and a redwood) located along the southeastern property line of the project site may need to be removed for project construction, but these trees are not protected by ordinance. Project landscaping would including trees plantings within the landscaped areas of the site. There are no Habitat Conservation Plans (HCPs) or Natural Community Conservation Plans (NCCPs) appliable to the project site, and the project would not have the potential conflict with the provisions of an adopted HCP, NCCP, or other approved governmental habitat conservation plan. (Acorn, 2023)

V. CULTURAL RESOURCES Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

A "Cultural Resources Inventory – Downtown Ranchos Commercial Development" (CRI) was prepared for the project (Taggart, 2023). Certain information in the CRI may be confidential; therefore, the report is not included as an appendix accompanying this Initial Study. Information and analysis from the CRI is incorporated in the responses below.

Responses:

(a-c) Less Than Significant Impact with Mitigation. A record search was completed on May 15, 2023, at the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System (CHRIS) located at California State University, Bakersfield, by SSJVIC staff (File No. 23-170; Appendix C). A ¼ mile search radius was used for the records search, which is large enough to capture any previously recorded archaeological resources and prior studies in proximity to the project site with the potential to be impacted. Cultural resource site maps and records, survey reports, and other pertinent materials were reviewed as part of the records search. On May 19, 2023, a field survey of the project site was conducted by Mike Taggart, RPA (No. 12572) the records review and site survey did not identify any historic or archaeological resources at the site. Therefore, the project would not have the potential to impact any known historical or archaeological resources. Additionally, no human remains are known to be present at the project site.

While no cultural resources or human remains are known to be present within the project site, excavation and other ground disturbance associated with project construction would have the potential to unearth previously unknown resources. Mitigation Measure CUL MM-1 requires that any unanticipated discoveries during Project construction be managed through a procedure designed to assess and treat the find as quickly as possible and in accordance with applicable state and federal laws and would reduce potential adverse impacts to less than significant.

> ***CUL MM-1.*** *If subsurface deposits believed to be cultural or human in origin are discovered during construction, work shall halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as*

appropriate, using professional judgment. The following actions/notifications shall apply depending on the nature of the find:

- *If the professional archaeologist determines that the find does not represent a cultural resource, work may resume, and no agency notifications are required.*
- *If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, the archaeologist shall immediately notify the County of Madera. The County shall consult on a finding of eligibility and implement appropriate treatment measures if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines or a historic property under Section 106 NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines or a Historic Property under Section 106; or 2) that the treatment measures have been completed to their satisfaction.*
- *If the find includes human remains, or remains that are potentially human, they shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Madera County Coroner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, §5097.98 of the California PRC, and AB 2641 will be implemented. If the coroner determines the remains are Native American and not the result of a crime scene, the coroner will notify the NAHC, which then will designate a Native American Most Likely Descendant (MLD) for the Project (§ 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.*

_____

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

Responses:

(a - b) Less Than Significant Impact. California has implemented numerous energy efficiency and conservation programs that have resulted in substantial energy savings. The State has adopted comprehensive energy efficiency standards as part of its Building Standards Code, California Codes of Regulations, Title 24. In 2009, the California Building Standards Commission adopted a voluntary Green Building Standards Code, also known as CALGreen, which became mandatory in 2011. CALGreen sets forth mandatory measures applicable to new residential and non-residential structures and additions and alterations on water efficiency and conservation, building material conservation, interior environmental quality, and energy efficiency. Additionally, California has adopted a Renewables Portfolio Standard, which requires electricity retailers in the state to generate 33 percent of the electricity they sell from renewable energy sources (i.e., solar, wind, geothermal, hydroelectric from small generators, etc.) by the end of 2020. In 2018, SB 100 was signed into law, which increases the electricity generation requirement from renewable sources to 60% by 2030 and requires all the state's electricity to come from carbon-free resources by 2045.

The project's main sources of energy consumption would be construction activities and operation of the proposed commercial facilities. Project construction would involve fuel consumption and use of other nonrenewable resources. Construction equipment used for such improvements typically runs on diesel fuel or gasoline. The same fuels are typically used for vehicles transporting equipment and workers to and from a construction site. However, construction-related fuel consumption would be finite, short-term and consistent with construction activities of a similar character. This energy use would not be considered wasteful, inefficient, or unnecessary. Equipment overtime would be more energy-efficient in order to assist with meeting State emissions reduction goals. Additionally, under California's Renewable Portfolio Standard, a greater share of electricity would be provided from renewable energy sources over time, so less fossil fuel consumption to generate electricity would occur. The project would be required to comply with the building energy efficiency standards of California Code of Regulations Title 24, Part 6, also known as the California Energy Code. Compliance with these standards would reduce energy consumption associated with project operations, although reductions from compliance cannot be readily quantified at this time. Overall, project construction and operations would not consume energy resources in a manner considered wasteful, inefficient, or unnecessary; the project would not conflict or obstruct any state or local plans for renewable energy efficiency. Therefore, project impacts related to energy consumption are considered less than significant.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zone Map issued by the State Geologist for the area, or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geological unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☒	☐
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Responses:

(a i - iv) Less than Significant Impact. According to the California Earthquake Hazards Zone Application (EQ Zapp) located on the Department of Conservation, the project is not within an Earthquake Fault Zone (Department of Conservation , 2021).

The Earthquake Shaking Potential for California Map located on the Department of Conservations website displays the level of hazards regarding ground shaking for each county. According to the

map, Madera is located in a region distant from known active faults and will experience lower levels of shaking less frequently. In most earthquakes, only weaker, masonry buildings would be damaged. However, very infrequent earthquakes could still cause strong shaking. The project area is topographically flat, with no potential for landslides (Department of Conservation , 2016).

(b) Less Than Significant Impact. The parcel is subject to potential erosion due to rain events; however, with the implementation of HYDRO MM-1, construction project proponents will be required to submit a Notice of Intent and Storm Water Pollution Prevention Plan (SWPPP) to the Regional Water Quality Board to obtain a National Pollutant Discharge Elimination System (NPDES) General Construction Permit. The SWPPP will include Best Management Practices (BMPs) to control erosion and siltation on the site in order to prevent water quality degradation. Such measures may include, but are not limited to, covering the graded area with straw or straw matting and using water for dust control. Due to the flat nature of the project site, and given that the site has been previously disturbed, development within the project site would result in a less than significant soil erosion impact.

(c) Less Than Significant Impact. The project site is not located in an earthquake fault zone and is in an area with a low probability of seismic activity. Lateral spreading, subsidence, and collapse are uncommon in Madera County. Since the project site is not located on a geologic unit or soil that is unstable or would become unstable due to project activities, there is little to no potential for result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Impacts from these criteria are considered less than significant.

(d) Less Than Significant Impact. According to Table 18-1B of the Uniform Code (1994) soils meeting all four of the following provisions shall be considered expansive, except that tests to show compliance with Items 1, 2 and 3 shall not be required if the test prescribed in Item 4 is conducted (California Building Code , 2022) :

1. Plasticity index (PI) of 15 or greater, determined in accordance with ASTM D4318.
2. More than 10 percent of the soil particles pass a No. 200 sieve (75 μm), determined in accordance with ASTM D422.
3. More than 10 percent of the soil particles are less than 5 micrometers in size, determined in accordance with ASTM D422.
4. Expansion index greater than 20, determined in accordance with ASTM D4829.

According to the U.S. Department of Agriculture, Natural Resources Conservation Services Web Soil Survey, identified soil on the project site that primarily consists of San Joaquin sandy loam (SaA) which has a plasticity of 9.0, and Whitney and Rocklin Sandy (WrB), which has a plasticity of 2.5 and does not meet all four of the provisions required by Table 18-1B therefore, the project would have a less than significant impact.

(e) Less Than Significant Impact. The project proponent conducted a soil profile percolation test for a septic system to serve the proposed project. The testing consisted of seven test borings with a depth of approximately thirty feet below ground near the proposed seepage pit areas (refer to Table 8 for percolation test results).

Table 8. Percolation Test Results

Percolation Scenario	Test Number					
	P-1	P-2	P-3	P-4	P-5	P-6
Percolation Rate (minutes/inch)	25.0	29.2	33.3	29.2	25.0	29.2
Percolation Rate adjusted for Gravel Pack (minutes/inch)	56.75	66.2	75.7	66.2	56.7	66.2

Source: RMA GeoScience, Inc., 2022.
Notes:
All percolation text holes were to a depth of 30 feet.
Percolation rates adjusted for gravel pack based on a 2.27 adjustment factor.

The results of the test indicated that the average percolation rate is 64.62 minutes/inch; which is more than the required maximum percolation rate of 60 minutes/inch per the Madera County LAMP and, therefore, the project soils are capable of adequately supporting the use of septic tanks with appropriate design and the project would have a less than significant impact (RMA GeoScience, Inc. , 2022).

(f) Less Than Significant Impact with Mitigation. No unique paleontological or unique geological resources are known to be present within the project site. While no such resources are known to be present, excavations needed for project construction in alluvium underlying the site would have the potential to unearth previously unknown unique paleontological resources. Mitigation Measure MM PALEO-1 requires that any unanticipated fossil or other potential paleontological resource discoveries during Project construction be managed through a procedure designed to assess and treat the find as quickly as possible and would reduce potential adverse impacts to less than significant.

MM PALEO-1. *If subsurface deposits having the potential to be a paleontological resource are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist/paleontologist shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following actions/notifications shall apply depending on the nature of the find:*

a. If the professional archaeologist/paleontologist determines that the find does not represent a unique paleontological resource, work may resume, and no agency notifications are required.

b. If the professional archaeologist/paleontologist determines that the find does represent a unique paleontological resource, the archaeologist/paleontologist shall immediately notify the County of Madera. The County shall consult on a finding of eligibility and implement appropriate treatment measures for the find. Work may not resume within the no-work radius until the County determines that appropriate treatment measures have been completed sufficient to avoid the loss of a unique paleontological resource.

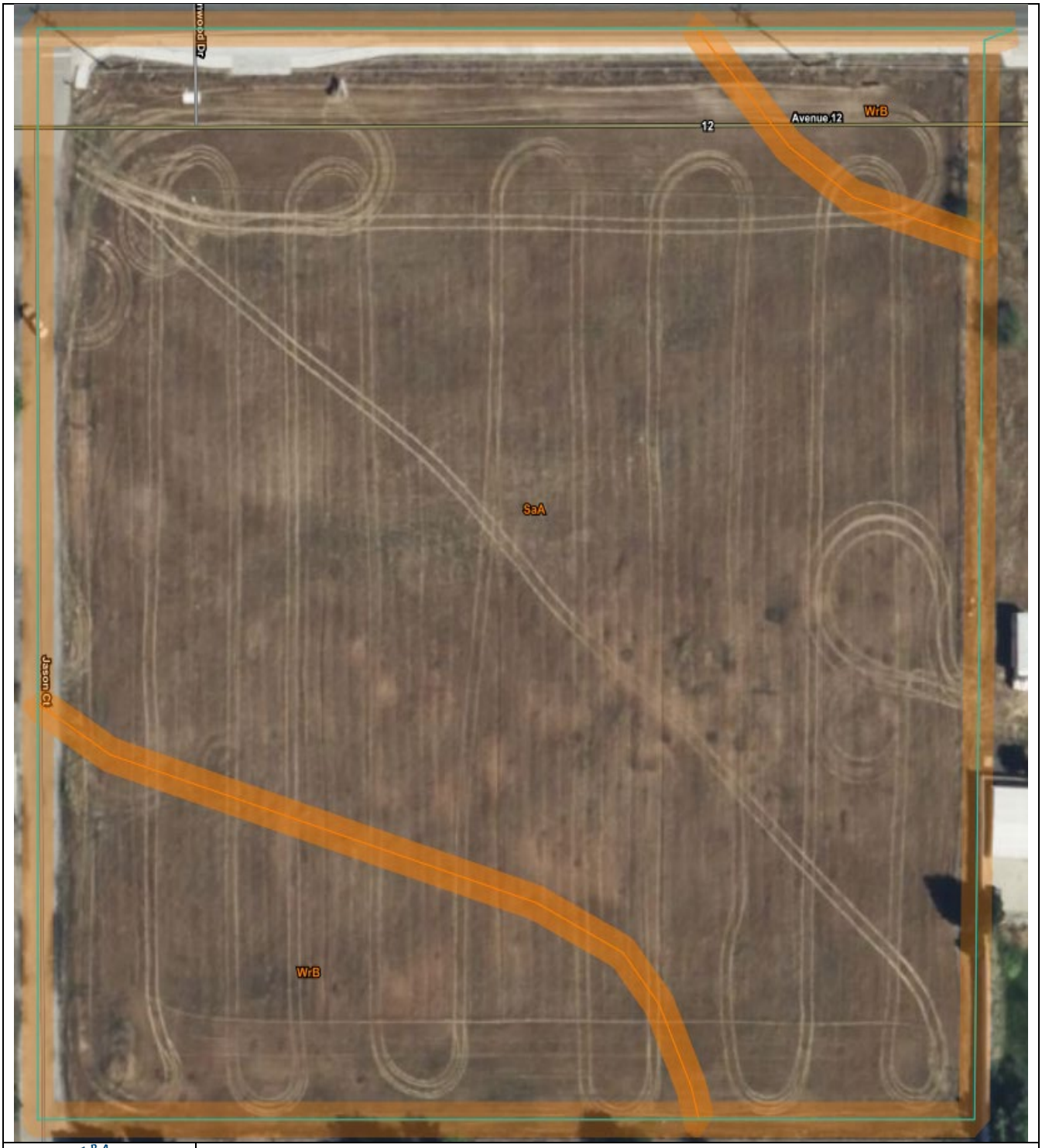

Figure 3 Soils (United States Department of Agriculture , 2019)

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

An "Air Quality and Greenhouse Gas Impact Assessment for the Madera Ranchos Development" (AQIA) (Stantec 2023) was prepared for the project and is included in Appendix A of this Initial Study. Information and analysis from the AQIA is incorporated in the responses below.

Responses:

(a) Less than Significant Impact.

Construction GHG Emissions

Construction GHGs would be emitted by the off-road construction equipment and vehicle travel by workers and material deliveries to the project site. The estimated construction GHG emissions are shown in Table 9. Because construction GHG emissions are temporary and reduction measures are limited, a common professional practice in assessing the significance of construction-related GHG emissions is to amortize the construction emissions over the life of the project and include the amortized emissions in the assessment of operational GHG emission significance. Although the project's proposed uses are expected to have an operation life of more than 30 years, the amortization used here conservatively assumes an operational life of 30 years.

Table 9: Construction Greenhouse Gas Emissions – Unmitigated

Construction Year	$MTCO_2e$
2023	292
2024	134
Total	**426**
Amortized over 30 years[1]	14.2

Source: Stantec 2022, CalEEMod 2020.4.0

Notes:1. GHG emissions are amortized over the 30-year life of the proposed project.

Operational GHG Emissions

Operational or long-term emissions would occur over the life of the project. Sources of project-related GHG emissions would include motor vehicles and trucks, energy usage, water usage, waste generation, and area sources, such as landscaping activities. Operational GHG emissions associated with the project were estimated using CalEEMod 2020.4.0. Table 10 presents operational GHG emissions and the 30-year amortized construction-related GHG emissions as discussed in the preceding section.

Table 10: Operational Greenhouse Gas Emissions

Source	Emissions ($MTCO_2e$ per year)
Area	>0.01
Energy	64.53
Mobile	2,582
Waste	108
Water	6
Amortized Construction Emissions	14.2
Total	**2,775**

Source: Stantec 2022, CalEEMod 2020.4.0 (Appendix A).

Although the project's estimated GHG emissions are presented above for informational purposes, the project's potential to result in a significant impact associated with GHG emissions is determined by assessing the project's consistency with applicable statewide and regional GHG reduction plans. As discussed in more detail at item "b" below, the project would be consistent with the CARB's 2017 Scoping Plan, CARB's 2022 Scoping Plan, MCTC Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), and the County's General Plan goals that aim to reduce air pollutant emissions and energy use (which in turn reduce GHG emissions), as such the project would comply with applicable reduction plans and the project's GHG emissions would be less than significant.

(b) Less Than Significant Impact

Pursuant to Appendix G of the CEQA Guidelines, a significant GHG impact is identified if the project could conflict with applicable GHG reduction plans, policies, or regulations. Development projects would be subject to complying with SB 32, MCTC's RTP/SCS, and the City's applicable goals. SB 32 is a statewide reduction goal aimed at reducing emissions to 40% below 1990 levels by 2030. CARB's 2017 Scoping Plan sets a framework for the State to meet the reduction targets of SB 32.

Consistency with the 2017 and 2022 CARB Scoping Plan

CARB issued the Final 2017 Scoping Plan Update in November 2017 and establishes emissions reduction strategies necessary to meet SB 32's 2030 reduction goals. In 2022, CARB approved

their 2022 Scoping Plan which expands on the Final 2017 Scoping Plan to assess progress in meeting SB 32 and reach AB 1279. Consistency with the 2017 and 2022 Scoping Plans are included in Tables 11 and 12, respectively, below.

Table 11: Project Consistency with Applicable 2017 Scoping Plan Greenhouse Gas Reduction Strategies

Measure Name	Measure Description	Consistency Determination
SB 350 50% Renewable Mandate.	Utilities subject to the legislation will be required to increase their renewable energy mix from 33% in 2020 to 50% in 2030.	**Consistent.** The project will purchase electricity from a utility subject to the SB 350 Renewable Mandate.
Low Carbon Fuel Standard	This measure requires fuel providers to meet an 18 percent reduction in carbon content by 2030.	**Consistent.** Fuel sold with contain lower carbon content as the fuel standard is implemented.
Mobile Source Strategy (Cleaner Technology and Fuels Scenario)	Vehicle manufacturers will be required to meet existing regulations mandated by the LEV III and Heavy-Duty Vehicle programs. The strategy includes a goal of having 4.2 million ZEVs on the road by 2030 and increasing numbers of ZEV trucks and buses.	**Consistent.** Delivery and vending trucks accessing the site will be equipped with ZEV's as new trucks are manufactured and the deadline for the goal comes closer.
Short-Lived Climate Pollutant (SLCP) Reduction Strategy	The strategy requires the reduction of SLCPs by 40 percent from 2013 levels by 2030 and the reduction of black carbon by 50 percent from 2013 levels by 2030.	**Consistent.** The project will comply with all SJVAPCD and state regulations governing SLCPs. For example, the project's commercial components including the convenience store will use refrigerators free of HFCs.
SB 375 Sustainable Communities Strategies	Requires Regional Transportation Plans to include a sustainable communities' strategy for reduction of per capita vehicle miles traveled.	**Consistent.** The project would provide necessary services including food and gasoline for drivers along Avenue 12. This allows drivers to stop along their route as compared to driving off route to find other services within the County.
Post-2020 Cap-and-Trade Program	The Post 2020 Cap-and-Trade Program continues the existing program for another 10 years. The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers.	**Consistent.** The post-2020 Cap-and-Trade Program indirectly affects people who use the products and services produced by the regulated industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap- and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the program's first compliance period.

Source: Stantec, 2023

Table 12: Project Consistency with 2022 Scoping Plan Greenhouse Gas Reduction Strategies

Measure	Consistency Determination
Deploy ZEVs and reduce driving demand	**Consistent.** The project would develop a new medical office, quick service restaurant, market, and gasoline service station in a rural portion of Madera County. Residents near the project would have access to new amenities that would decrease driving demand to other areas of the County. Moreover, as the fleet of ZEVs grows within the state, it is expected that more vendor trips and vehicle passenger trips to the site would be from ZEVs. In addition, the Project would include 7 EV parking spaces that would increase EV charging capacity in the area.
Coordinate supply of liquid fossil fuels with declining CA fuel demand	**Consistent.** This measure is aimed at petroleum refineries and fossil fuel extraction operations. The project would comply and would be expected to sell less fossil fuels as the ZEV fleet in the state grows.
Generate clean electricity	**Consistent.** This measure is aimed at the electric sector to decarbonize. The project would purchase electricity from utility providers that are expanding GHG-free electricity consistent with SB 350 Renewable Mandate.
Decarbonize Buildings	**Consistent.** The project would comply with the latest California Green Building Standards that require energy and water efficient project design features that would reduce GHG emissions.
Decarbonize Industrial Energy Supply	**Not Applicable.** The project would not include any industrial land uses.
Reduce non-combustion emissions (Methane)	**Not Applicable.** The project would not include any land uses that generate significant levels of methane such as landfills or dairy farms.
Reduce non-combustion emissions (Hydrofluorocarbons[HFCs])	**Consistent.** The project would comply with all SJVAPCD and state regulations governing SLCPs, including HFCs. For example, the project's commercial components including the convenience store would use refrigerators free of HFCs.
Compensate for remaining emissions	**Not Applicable.** This measure is aimed at the state government to reduce statewide emissions to meet AB 1279 goals.

Source: Stantec, 2023

Consistency with SJVAPCD CCAP

The SJVAPCD has adopted a CCAP, which includes suggested BPS for proposed residential development projects. with these measures is included in Table 13 below. As shown in the table, the project would be consistent with applicable CCAP measures.

Table 13: Project Consistency with Applicable SJVAPCD CCAP GHG Reduction Measures

Measure Name	Measure Description	Project Consistency
TDM and Misc. Measures		
5 – Site Design Measures	Site design to minimize the need for external trips by including services/facilities for day care, banking/ATM, restaurants, vehicle refueling, and shopping.	**Consistent.** The project would create a new gas station with a convenience store, quick service restaurant, and medical office that will allow users to have multiple uses on the site.
11 – Vehicle Idling	Limit idling time for commercial vehicles, including delivery and construction vehicles.	**Consistent.** Construction and all delivery and vendor trucks will be subject to CARB rules that limit idling to 5 minutes.

Source: SJVAPCD 2009.

Consistency with Madera County General Plan

Madera County adopted the Air Quality Element of the General Plan in 2010 and it included a series of goals and policies aimed at reducing air quality emissions. However, the reduction in air pollutant emissions would also reduce GHG emissions. As shown in Table 14, the proposed project would be consistent with applicable policies of the General Plan.

Table 14: Consistency with the Madera County General Plan

Policy Number	Policy Description	Consistency Determination
AQ Goal A1: Achieve effective communication, cooperation, coordination and education in developing and implementing countywide and regional programs to improve air quality and reduce potential climate change impacts.		
A1.1.1	Designate an Air Quality and Climate Change Coordinator to coordinate County efforts and work with neighboring jurisdictions and affected agencies to minimize cross-jurisdictional transportation and regional transportation and air quality issues.	**Not Applicable.** This policy is aimed at the County, but the proposed project would not interfere with implementation of this policy.
A1.1.2	Consult with the SJVAPCD and MCTC during CEQA review of discretionary projects having the potential for causing adverse air quality, transportation, and climate change impacts. Participate in the SJVAPCD Climate Change Action Plan implementation.	**Not Applicable.** The project is not a discretionary project.
AQ Goal B1: Improve Air Quality, Land Use and Transportation Planning integration and reduce impacts through appropriate project location, design and application of best available technologies.		

B1.1.1	Minimize air quality and potential climate change impacts through project review, evaluation, and conditions of approval when planning the location and design of land uses and transportation systems needed to accommodate expected County population growth. Integrate decisions on land use and development locations with the SJV Blueprint.	**Consistent.** This project CEQA review assesses potential air quality and climate change impacts of the project and concludes that the impacts would be less than significant with mitigation incorporated. The project's location within a developed community area would provide local services anticipated to reduce regional energy use and GHG emissions.
AQ Goal C1: Use Air Quality Assessment and Mitigation programs and resources of the SJVAPCD and other agencies to minimize air pollution, related public health effects, and potential climate change impacts within the County.		
C1.1.1	Assess and mitigate project air quality impacts using analysis methods and significance thresholds recommended by the SJVAPCD and require that projects do not exceed established SJVAPCD thresholds.	**Consistent.** The analysis for the proposed project relies on SJVAPCD methodologies and impact thresholds.
AQ Goal A1: Achieve effective communication, cooperation, coordination and education in developing and implementing countywide and regional programs to improve air quality and reduce potential climate change impacts.		
C1.1.2	Assess and mitigate project greenhouse gas/climate change impacts using analysis methods and significance thresholds as defined or recommended by the SJVAPCD, MCTC or California Air Resources Board (ARB) depending on the type of project involved.	**Consistent.** The project's air quality and greenhouse gas analysis is consistent with recommended SJVAPCD methodologies.
C1.1.3	Ensure that air quality and climate change impacts identified during CEQA review are minimized and consistently and fairly mitigated at a minimum, to levels as required by CEQA.	**Consistent.** The project's air quality and greenhouse gas analysis demonstrates that the impacts are less than significant with implementation of mitigation.
AQ Goal F1: Minimize exposure of the public to hazardous air pollutant emissions, particulates and noxious odors from freeways, major arterial roadways, industrial, manufacturing, and processing facilities.		
F1.1.2	Locate new air pollution point sources such as, but not limited to industrial, manufacturing, and processing facilities an adequate distance from residential areas and other sensitive receptors in accordance with the provisions of ARB's Air Quality Land Use Handbook.	**Consistent.** ARB's Air Quality Land Use Handbook states that most typical gas dispensing facilities have a risk of less than 10 at 50 feet from the source therefore recommends avoiding placing a sensitive receptor within 50 feet of a gas dispensing facility. The closest sensitive receptor is over 300 feet west of the proposed location of the gas station.

Source of Measures: Madera County 2010.

Consistency with Madera County Transportation Commission 2022 RTP/SCS

The Madera County Transportation Commission's (MCTC) 2022 RTP/SCS includes a series of goals for the region that would reduce GHG emissions based on the land use consistency and the reduction of vehicle trips. The proposed project's consistency with these measures is included in Table 15 below. As shown in the table, the project would be consistent with applicable MCTC measures.

Table 15: Project Consistency with MCTC 2022 RTP/SCS Goals

Objectives	Consistency
Provide equitable access to effective transportation options for all, regardless of race, income, national origin, age, location, physical ability, or any other factor.	**Consistent**. The project will provide a fuel station in a rural area of Madera County along Avenue 12 that will better connect the transportation system by providing a reliable fuel source for travelers and residents.
Develop a transportation network able to support the safe and efficient movement of people and goods and increase economic vitality.	**Not Applicable.** This goal is aimed at MCTC and the County, the project would not interfere with implementation of this goal.
Improve environmental conditions through integrated planning of transportation and land uses and achieve state and federal air quality improvement mandates.	**Not Applicable.** This goal is aimed at MCTC and the County, the project will not interfere with implementation of this goal.
Foster a secure, safe, and reliable transportation system.	**Consistent**. The project will provide a fuel station in a rural area of Madera along Avenue 12 that will provide a reliable fuel source that would enhance efficiency of the transportation system.
Support the development and implementation of innovative and emerging transportation technologies.	**Consistent**. The project will provide 7 EV parking stations that will increase EV charging capacity in the area.
Improve mobility for all travelers through a variety of accessible modal options.	**Consistent**. The project will provide a fuel station in a rural area of Madera along Avenue 12 that will better enhance the transportation system by providing a reliable fuel source. The project will also provide 7 EV parking stations that will increase EV charging capacity in the area.
Foster growth with a mix of land use types able to facilitate mixed uses, infill and compact development and preserve agricultural land and natural resources.	**Consistent.** The project is an infill development as it will place a new medical building, quick service restaurant, and gasoline service station on an empty plot of land adjacent to existing residences and commercial space. The existing site is empty and construction of the project would not interfere with any agricultural land or natural resources.
Develop funding and financing strategies to implement the project and strategies in the RTP/SCS.	**Not Applicable.** This goal is aimed at MCTC and the County, the project will not interfere with implementation of this goal.

Source of Measures: MCTC 2022.

Based on this evaluation, this analysis finds the project would be consistent with all feasible and applicable strategies recommended by the MCTC.

The project would not conflict with the goals and objectives of the SJVAPCD's CCAP, CARB's Scoping Plans, or any other State or regional plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions. As such, the project would not conflict with an applicable plan adopted for the purpose of reducing GHG emissions; therefore, impacts would be considered less than significant.

IX. HAZARDS AND HAZARDOUS MATERIALS Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
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) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

Responses:

(a-b) Less Than Significant Impact With Mitigation.

The criteria and guidelines for identification of hazardous waste are as follows (California Department of Tax and Fee Administration, 2023):

1. Cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness.

2. Pose a substantial present or potential hazard to human health or the environment, due to factors including, but not limited to, carcinogenicity, acute toxicity, chronic toxicity, bio accumulative properties, or persistence in the environment, when improperly treated, stored, transported, or disposed of, or otherwise managed.

The project is located on the southeast corner at the intersection of Avenue 12 and Jason Court which is approximately four miles west of State Route (SR) 41. There are four major state highways in the County of Madera; they are SR 99, 152, 145, and 41. As previously stated, the project consist of a zone change, lot line adjustment, and the construction of three structures which includes the construction of a gas station with two underground storage tanks (UST) for storage of petroleum products. which would require a Hazardous Materials Business Plan (HMBP) if a business handles and/or stores hazardous material equal to or greater than fifty-five gallons for liquids or 500 pounds for solids. The County also has a Certified Unified Program (CUPA) which works with businesses in Madera County on the proper handling and disposing of hazardous waste. The project would be required to comply with the HMPB and CUPA requirements. The project would also require the transport of hazardous materials in the form of petroleum approximately twice a week. The major transport routes are Hwy 99 and two railroads where thousands of hazardous materials are transported each year. Hwy 145, which links Hwy 41 and 99 has limitations because it crosses the city of Madera before intersecting Highway 99 and the potential for spills caused by accidents and affect a large number of people are great (Madera County, 1995). However, given that fifteen hazardous material transport specific incidents have occurred in the entire county dating back to 1974 to the present it is statistically it can be anticipated an incident will occur approximately every year. However according to Caltrans, the majority of incidents occur during loading and unloading and from the fluids of the vehicle transporting the hazardous materials and not the cargo itself. The overall impact Impacts from hazardous materials vary by location and severity of any given event and will likely only affect certain areas of the County during specific times. Based on the risk assessment, it is evident hazardous materials spills will continue to have potential economic impacts to certain areas of the County. However, many of the spills in the County are minor, localized events that are more of a nuisance than a disaster (Foster and Morrison, 2023). As stated, the release of hazardous materials occurs during loading and unloading and there is the potential for small leaks due to refueling of the construction equipment; however, standard construction Best Management Practices (BMPs) will reduce the potential for accidental release of construction-related fuels and other hazardous materials. These BMPs will prevent, minimize, or remedy stormwater contamination from spills or leaks, control the amount of runoff from the site, and require proper disposal or recycling of hazardous materials. Therefore the project would have a less than significant impact with mitigations.

HAZ MM-1 *The project proponent shall submit a Hazardous Materials Business Plan to the Madera County Department of Environmental Health and the California Environmental Reporting System before installing the UST and participate in the CUPA.*

(c) No Impact The closest school is Webster Elementary which is approximately 1 mile northwest of the project site. The project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile

of an existing or proposed school.

(d) No Impact. A review of the State of California Regional Water Quality Control Board (RWQCB) database indicated the closest LUST site is approximately half a mile west of the project site and was closed as on 8/25/2005. The project site is not located on a hazardous waste site.

(e) No Impact. There are no airports within two miles of the project site, and the site is not within an airport/airspace overlay zone. Therefore, the project would not expose people to a safety risk or excessive noise associated with airport operations.

(f) No Impact. The project would not interfere with and adopted emergency response plan or emergency evacuation plan.

(g) No Impact. The project site is not located in a State Area of Responsibility (SRA) nor is the area with an area with conditions prone to wildland fires.

X. HYDROLOGY AND WATER QUALITY Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☒	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☒	☐	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☒	☐	☐
(i) Result in substantial erosion or siltation on- or off-site;	☐	☒	☐	☐
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☒	☐	☐
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☒	☐	☐
(iv) Impede or redirect flood flows?	☐	☒	☐	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

Responses:

(a) Less Than Significant Impact With Mitigation. The project site is topographically flat. Site preparation of the project would require the disturbance of the approximate five-acre project site, which could result in erosion and siltation with the potential to violate water quality standards. Additionally, accidental spills or disposal of potentially harmful materials used during construction or operation of the project could possibly wash into and pollute surface water runoff. A Storm Water Pollution Prevention Plan (SWPPP) for construction-related activities would

be prepared identifying Best Management Practices (BMPs) to minimize the potential for pollution associated with the introduction of sediments or other contaminants in stormwater runoff from the construction area.

A proposed ponding basin is to be located to the east side of the property to provide filtration to remove sediment, adsorption to the surrounding soil and to catch
To ensure the SWPPP is implemented sufficient for reducing potential impacts to water quality during construction, Mitigation Measure MM HYD-1 requires the applicant to provide evidence to the County that a Notice of Intent (NOI) to comply with the National Pollution Discharge Elimination System (NPDES) General Construction Permit and SWPPP have been filed with the Central Valley Regional Water Quality Control Board (RWQCB). The construction SWPPP would include BMPs targeted at minimizing and controlling pollutants in construction and post-construction stormwater runoff and is considered sufficient for the purposes of this analysis to ensure that construction-phase stormwater runoff would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.

HYDRO MM-1 *Prior to construction, the applicant shall submit to the County a copy of: (1) the approved Storm Water Pollution Prevention Plan (SWPPP) and (2) the Notice of Intent (NOI) to comply with the General National Pollutant Discharge Elimination System (NPDES) as filed with the Central Valley Regional Water Quality Control Board. The requirements of the SWPPP and NPDES shall be incorporated into design specifications and construction contracts. The Applicant or person responsible shall meet County of Madera construction site requirements regarding the control of surface water and runoff. Runoff created at the project site shall meet the following minimum requirements:*

- ***(a)*** *Sediments generated on the project site shall be retained using adequate treatment control or structural Best Management Practices (BMPs)*
- ***(b)*** *Construction-related materials, wastes, spill or residues shall be retained at the project site to avoid discharge to streets, drainage facilities, receiving waters or adjacent properties by wind or run-off.*

(b) Less Than Significant Impact with Mitigation. A subsurface exploration was conducted and no groundwater was encountered, there was also no springs or areas of natural seepage on the project site. According to the SGMA Data Viewer application, groundwater data indicates the depth to groundwater in the vicinity of the project site is approximately 274 feet in Fall 2021. Historical data derived from wells (State Well IDs 12S19E02A001M, 12S19E11B001M, 12S19E03Q001M, and 11S19E33J001M) located 0.48 miles east, 1.01 miles south-southeast, 1.06 miles southwest, and 1.52 miles west-northwest, respectively, of the project site, indicate the depth to ground water on average was approximately 96 feet deep throughout the 1960's, declined to a depth of approximately 129 during the 1970's, declined further to a depth of approximately 169 feet deep during the 1980's, and continued to decline to a depth of 209 feet deep during the 1990's. Over the subsequent years, groundwater depth in the vicinity of the project site has continued to decline by approximately 65 feet. Several peculation tests were conducted to determine the percolation rates for the area and the average was 64.62 minutes/inch (RMA GeoSCience , 2023). With the implementation of seepage pits as specified in Mitigation Measure HYDRO MM-2 the project would have a less than significant impact.

HYDRO MM-2 *There will be a total of 16 seepage pits for all three septic tanks, 15 will be 50 feet in depth and one will be 55 feet deep. All seepage pits will be 4 feet in diameter with a total length of 805 feet which will provide the minimum absorption area need 10,070 square feet.*

(c i - iv) Less Than Significant Impact With Mitigation. Extensive grading or other soil disturbing activities often leave the soils of construction zones barren of vegetation and, therefore, vulnerable to erosion. Eroded soil can be carried as sediment and deposited in local creek beds and adjacent wetlands. All disturbed areas will be vulnerable to erosion during the winter rainy season. The possible deposition of silt in off-site drainages would constitute a potentially significant adverse effect of the project site. With the implementation of Hydro MM-1, Hydro MM-2, and Hydro MM-3 the project will have a less than significant impact.

HYDRO MM-3 *Prior to construction, an erosion control plan will be prepared by a qualified engineer consistent with the requirements of a Madera County grading permit and a General Construction Permit. The plan will include a requirement to implement the specified erosion control measures prior to the onset of the rainy season and to monitor the site periodically throughout the rainy season to ensure that the erosion control measures are successfully preventing on-site erosion and the concurrent deposition of sediment in on-site and off-site drainages. The plan must address both the potential for soil erosion and non-point source pollution, and include the following elements:*

(a) Protection of exposed graded slopes from sheet, rill and gully erosion. Such protection could be in the form of erosion control fabric, hydro mulch containing the seed of native soil-binding plants, straw mechanically imbedded in exposed soils, or some combination of the three.

(b) Protection of natural drainage channels from sedimentation. Straw bale check dams or waddles should be installed below graded areas so that any sediment carried by surface runoff is intercepted and retained behind the check dams before it can enter a drainage channel.

(c) Use of best management practices (BMPs) to control soil erosion and non-point source pollution. BMPs may include measures in 1 and 2 above, but they may include any number of additional measures appropriate for this particular site and this particular project, including grease traps in parking lots, landscape management practices to reduce the use of pesticides and herbicides, the discharge of stormwater runoff from "hardscapes" into grassy swales or detention basins, regular site inspections for pollutants that could be carried by runoff into natural drainages.

(d) Less Than Significant Impact. The project is not located in a flood hazard, tsunami, or seiche zone, and would not have the potential to release pollutants from flooding with the implementation of HYDRO MM-3.

(e) No Impact. The project proponent will be coordinating with the Regional Water Control Board and the local agency to ensure consistency with any water quality standards. The project would also pay its fair share to obtain its water usage from Maintenance District 10A.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XI. LAND USE AND PLANNING Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Responses:

(a) No Impact. The project would not divide an established community.

(b) Less Than Significant Impact. The project parcels have a General Plan land use designation of NC (Neighborhood Commercial) and are currently zoned RRS (Residential, Rural, Singel Family District). The project change the zoning from RRS (Residential, Rural, Single Family District) to PDD (Planned Development District). The zone change is consistent with the General Plan land use designation and would provide for the development of the project with the County's issuance of a condition use permit (CUP).

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XII. MINERAL RESOURCES Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Responses:

(a - b) No Impact. The project site is not within an area identified as having a known mineral resource of value to the state or region. The site is not in an area delineated in the Madera County General Plan or other land use plan as a locally important mineral resource recovery site.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XIII. NOISE Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinances, or applicable standards of other agencies?	☐	☒	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or 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?	☐	☐	☐	☒

An "Acoustical Analysis – Avenue 12 Shopping Center" (WJV Acoustics, 2023) was prepared for the project and is included in Appendix C of this Initial Study. Information and analysis from the acoustical analysis is incorporated in the responses below.

Responses:

(a) Less Than Significant Impact with Mitigation. The project would include a zone change, lot line adjustment, conditional use permit (CUP), allowing for the construction and operation of a professional medical office, a convenience store, gas station, and carwash, and a coffee shop on a an approximately five-acre site located in the unincorporated community of Madera Ranchos in Madera County. The noise levels anticipated to be produced by the project's commercial uses could potentially impact existing off-site and proposed on-site sensitive receptors, including noise sources such as :

- HVAC/mechanical equipment
- truck deliveries
- parking lot activities (closing of car doors and trunks, stereos, alarms etc.)
- drive-thru operations
- car wash operations

Mechanical Equipment

The acoustical analysis assumed that the project would include roof-mounted heating, ventilating, and air conditioning (HVAC) units on the proposed buildings. The HVAC requirements for the buildings would likely require the use of multiple packaged roof-top units. For the purpose of noise and aesthetics, roof-mounted HVAC units are shielded by means of a roof parapet. WJVA conducted reference noise level measurements at

numerous commercial and retail buildings with roof-mounted HVAC units, and associated noise levels typically range between approximately 45-50 dB at a distance of 50 feet from the building façade.
For this project, the closest residential property lines to any potential roof-mounted HVAC equipment would be located at a minimum distance of 100 feet. Taking into account the standard rate of noise attenuation with increased distance from a point source (-6 dB/doubling of distance), noise levels associated with the operation of roof-mounted HVAC units would be approximately 39-44 dB at the closest sensitive receptor property line. Such levels do not exceed any Madera County noise level standard or exceed existing (without project) ambient noise levels.

Truck Movements

At the time of this analysis, a specific truck access route (or routes) had not been designated. However, trucks would access the project site by one of two (2) access points, one access point off Avenue 12 and one access point off Jason Court. It is assumed that truck deliveries would generally occur within the northern portion of the project site, in the vicinity of Avenue 12. The southern portion of the project site is a proposed medical office building, and regular truck deliveries would not be anticipated for this use. However, precise details on truck deliveries were not known at the time of this analysis. Noise level measurements were conducted from slowly moving trucks for a number of studies. Such truck movements would be expected to produce noise levels in the range of 65 to 71 dBA at a distance of 100 feet. The range in measured truck noise levels is due to differences in the size of trucks, their speed of movement and whether they have refrigeration units in operation during the pass-by. Truck movements within the project site could occur at distances of 100 feet or greater from existing noise-sensitive land uses (residences to the west). As such distances, noise levels associated with on-site truck movements would produce maximum noise levels in the range of approximately 65 to 71 dB or less. Such noise levels would generally not be expected to exceed the County's daytime (7:00 a.m. to 10:00 p.m.) noise level standard of 70 dB Lmax, but could exceed the County's nighttime (10:00 p.m. to 7:00 a.m.) noise level standard of 65 dB Lmax. At the time this analysis was prepared it was not known by WJVA if the project would anticipate nighttime deliveries. In regards to the residential land uses along the project site southern property line, truck movements are not anticipated in this area as the Carmena Health Center facility is not anticipated to receive large truck deliveries. Additionally, the Carmena Health Center would operate between the hours of 8:00 a.m. to 5:00 p.m., and would not include nighttime operations.

Parking Lot Activities

Noise due to traffic in parking lots is typically limited by low speeds and is not usually considered to be significant. Human activity in parking lots that can produce noise includes voices, stereo systems and the opening and closing of car doors and trunk lids. Such activities can occur at any time. The noise levels associated with these activities cannot be precisely defined due to variables such as the number of parking movements, time of day and other factors. It is typical for a passing car in a parking lot to produce a maximum noise level of 60 to 65 dBA at a distance of 50 feet, which is comparable to the level of a raised voice. For this project, parking would be dispersed throughout the overall project area. The closest proposed parking areas would be located at least 100 feet from

the closest existing residential property lines to the west. At this distance, maximum (Lmax) parking lot vehicle movements would be expected to be approximately 54 to 59 dB. Such levels would not exceed any of the County's applicable noise levels standards or exceed existing ambient noise levels at the closest residential land uses. In regards to the residential land uses located along the southern project site property line, car movements and parking lot activities within this area would be limited to daytime hours of 8:00 a.m. to 5:00 p.m. (proposed hours of operation for the Carmena Health Center). As described above, average existing hourly maximum noise levels in the vicinity of the residence to the south are approximately 73 dB. Vehicle movements and parking lot activities would not be expected to exceed these existing maximum ambient noise levels.

Car Wash

The project would include a drive-through car wash tunnel, located at the eastern side of project site, along the east side of the proposed gas station building. The distance between the proposed car wash operations and the closest residential property line is approximately 280 feet. According to the project applicant, the car wash would utilize Mark VII car wash equipment, including the AquaDri Dryer Model FS-40HP Freestanding wash/dry equipment. According to the noise level data provided by the equipment manufacturer, noise levels associated with the car wash dryers (the loudest noise-producing component of the car wash equipment), noise levels at the entrance end of the tunnel (the portion of the tunnel facing the residential land uses to the south) would be 89 dB at a distance of ten (10) feet from the entrance. The car wash operates such that one vehicle enters the tunnel and remains in the tunnel while the car wash equipment operates and moves around the parked vehicle. Each wash cycle would last approximately five to six (5-6) minutes, during which time dryers (blowers) would be in operation for 60 seconds. While the dryers are not in operation, noise levels would not be audible beyond the immediate vicinity of the car wash. With this cycle time and dryer time in consideration, the maximum amount of time during any given hour that the dryers could be in operation and producing noise would be approximately twelve (12) minutes.

Taking into account the above-described noise levels, dryer cycle times, and applying the standard rate of noise attenuation with increased distance from a point source (a reduction of 6 dB for each doubling of distance), WJVA calculated expected car wash noise levels at the closest noise-sensitive receiver locations (residential property line) to the proposed car wash facility. Car wash noise levels would be approximately 53 dB Leq at the residential property line located south of the car wash location.

Noise levels associated with the proposed car wash operations would be expected to exceed the County's exterior noise level standards by up to 3 dB during daytime hours (7:00 a.m. to 10:00 p.m.) and by up to 8 dB during nighttime hours (10:00 p.m. to 7:00 a.m.) To mitigate car wash noise levels at the existing residential property lines located to the south of the project site, a sound wall would need to be constructed along the car wash tunnel entrance. The minimum required height of the sound wall along the car wash tunnel entrance was calculated using a proprietary sound wall insertion loss (noise reduction) model. The model calculates the insertion loss for a wall of a given height based on the effective height of the noise source, height of the receiver, distance from the receiver to the wall, and distance from the noise source to the wall. Based on the above-described project-related noise levels and insertion loss model, it was determined that a sound wall with a minimum height of six (6') feet above ground

elevation would reduce car wash-related noise levels to the applicable daytime noise level standards and a sound wall with a minimum height of nine feet six inches (9'6") above ground elevation would reduce car wash-related noise level to the applicable nighttime noise level standards at the residential property lines nearest to the carwash south of the project site. The sound wall would need to be constructed on the southeast corner of the carwash. One of the following options would be required to comply with Madera County noise levels standards:

- Construct a 6-foot-tall sound wall along the car wash entrance tunnel in the location shown on and restrict car wash operations to the daytime hours of 7:00 a.m. to 10:00 p.m.

  or

- Construct a 9.5-foot-tall sound wall along the car wash entrance tunnel.

Drive Thru Retail

The project includes a coffee shop with a drive-thru that would be located in the northwest portion of the project site. For the noise analysis, it is assumed that the drive-thru would include an amplified menu-board for customers to place their orders. To assess potential project noise levels associated with drive-thru operations, the analysis utilized reference noise levels from a drive-thru fast food restaurant. Noise levels at the reference site were measured to be approximately 60 dB Leq at a distance of 40 feet from the ordering kiosk, and included noise from all sources, including the loudspeaker, vehicle movements and HVAC equipment.

The closest noise-sensitive receptors (residential land uses) to the proposed coffee shop drive thru operations (menu board location) are located approximately 175 feet to the west. Potential project-related noise levels at the locations of the closest residential land uses were calculated using the reference noise measurement data and the normal rate of sound attenuation over distance for a "point" noise source (6 dB reduction for each doubling of distance). At the setback distance of the closest residential land uses to any proposed drive-thru operations, noise levels associated with drive thru retail operations would be expected to produce noise levels of approximately 45-47 dB Lmax and approximately 47 dB Leq. Such levels would not exceed any Madera County daytime noise level standards, they slightly exceed the nighttime noise level standard of 45 dB Leq. However, based upon ambient noise level measurements and the proximity of the drive thru to Avenue 12, these noise levels would not exceed existing (without project) ambient noise levels at any nearby residential land use.

Combined Noise Levels

The above-described sources of noise could at times occur simultaneously. Specifically, the car wash, drive-thru retail activities and mechanical equipment (HVAC), for which compliance would be determined by the hourly equivalent (Leq) noise level standard. The noise levels associated with vehicle and truck movements are considered more temporal and intermittent, and compliance would be determined by the maximum (Lmax) noise level standard. It should be noted, decibels are logarithmic in nature, and cannot be added arithmetically. Noise levels associated with the car wash would impact the residential land uses south of the project site. At the residential property line south of the project site, combined noise levels

Conclusion

As discussed above, noise levels associated with the project would not have the potential to result in significant noise impacts with the exception of noise associated with the proposed car wash operation. Implementation of Mitigation Measure NOISE MM-1 would reduce car wash operation noise levels sufficient to reduce the impact to less than significant.

> ***NOISE MM-1.*** *The project proponent shall either:*
>
> *construct a 6-foot-tall sound wall along the car wash entrance tunnel, restrict car wash operations to the daytime hours of 7:00 a.m. to 10:00 p.m.,*
>
> *or*
>
> *construct a 9.5-foot-tall sound wall along the car wash entrance tunnel .*

b) Less Than Significant Impact. Construction noise is not considered to be a significant impact if construction is limited to the allowed hours and construction equipment is adequately maintained and muffled. Extraordinary noise-producing activities (e.g., pile driving) are not anticipated. Madera County limits hours of construction activities to occur between 7:00 a.m. and 7:00 p.m. Monday through Friday and between 9:00 a.m. to 5:00 p.m. on Saturdays. A noise impact could occur if construction activities were to occur outside these allowable hours. Construction noise would occur at various locations within and near the project site through the buildout period. Existing sensitive receptors could be located as close as 50-100 feet from construction activities. Table V provides typical construction-related noise levels at distances of 25, 50, 100 feet, and 200 feet. The dominant sources of man-made vibration are sonic booms, blasting, pile driving, pavement breaking, demolition, diesel locomotives, and rail-car coupling. None of these activities are anticipated to occur with construction or operation of the proposed project. Vibration from construction activities could be detected at the closest sensitive land uses, especially during movements by heavy equipment or loaded trucks and during some paving activities. These levels would not be expected to exceed any significant threshold levels for damage (the residence located to the south of the project is not considered to be a “fragile building”).

c) No Impact. There are no airports within two miles of the project site, and the site is not within an airport/airspace overlay zone. Therefore, the project would not expose people to excessive noise associated with airport operations.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XIV. POPULATION AND HOUSING Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and business) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Responses:

(a) No Impact. The project would develop a medical office, gas station, and coffee shop on an undeveloped site and would not induce unplanned population growth either directly or indirectly.

(b) No Impact. The 2016-2024 Housing Element was reviewed and it was verified that APN: 049-590-033; 034; and 036 were not identified on the sites inventory list and therefore the project would have no impact.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XV. PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☒	☐
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Responses:

(a – i-v) Less Than Significant Impact. The project would not require new or physically altered governmental facilities.

_____

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XVI. RECREATION				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Responses:

(a – b) No Impact. The project would not increase the use of existing parks or recreational facilities and the project does not include or require construction of recreational facilities.

_____

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XVII. TRANSPORTATION Would the project:				
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☒	☐	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☒	☐	☐
d) Result in inadequate emergency access?	☐	☐	☐	☒

A "Traffic Study – Proposed Commercial Development" (Peters Engineering Group, 2023) was prepared for the project and is included in Appendix D of this Initial Study. Information and analysis from the acoustical analysis is incorporated in the responses below.

Responses:

(a) Less Than Significant Impact with Mitigation. The State of California does not recognize traffic congestion and delay as an environmental impact per the California Environmental Quality Act (CEQA). However, Policy 2.A.8 of the Madera County General Plan Policy Document requires that LOS D or better be maintained on County roadways. The Transportation Research Board Highway Capacity Manual, 7th Edition, (HCM) defines level of service (LOS) as, a quantitative stratification of a performance measure or measures representing quality of service. The measures used to determine LOS for transportation system elements are called service measures. The HCM defines six levels of service, ranging from A to F, for each service measure or combination of service measures. LOS A represents the best operating conditions from the travelers perspective and LOS F the worst. For cost, environmental impact, and other reasons, roadways are typically not designed to provide LOS A conditions during peak periods but instead to provide some lower LOS that balances individual travelers desires against society desires and financial resources. Nevertheless, during low-volume periods, a system element may operate at LOS A (Peters Engineering Group, 2023).

The study consists of the intersection at Avenue 12/Road 36 and the intersection of Avenue 12/Jason/Fernwood. The levels of service were determined using the computer program Synchro 11, which is based on the HCM procedures for calculating levels of

service. The results of the intersection operational analyses are as follows:

Existing Conditions

1. Avenue 12 / Road 36 currently has a signal for a traffic control and during morning peak hours has a delay of 20.6 seconds and an LOS of C. During evening peak hours the delay is 18 seconds and has an LOS of B.
2. Avenue 12 / Jason / Fernwood currently has a two way stop for a traffic control and during morning peak hours has a delay of 35.1 seconds and an LOS of E. During evening peak hours the delay is 35.1 seconds and has an LOS of E.

Existing Plus Project Conditions

1. Avenue 12 / Road 36 during morning peak hours has a delay of 23.9 seconds and an LOS of C. During evening peak hours the delay is 19.3 seconds and has an LOS of B.
2. Avenue 12 / Jason / Fernwood during morning peak hours has a delay of >300 seconds and an LOS of F. During evening peak hours the delay is >300 seconds and has an LOS of F.

The results of the intersection analyses indicate that the existing conditions at the intersection of Avenue 12, Jason Court, and Fernwood Drive is currently operating worse than the target LOS D, operating at LOS E during both the a.m. and p.m. peak hours. The intersection of Avenue 12 and Road 36 is currently operating at acceptable LOS with calculated 95th-percentile queues contained within the available storage capacity.

The existing-plus-project conditions analyses represent conditions that would occur after construction of the project in the absence of other pending projects and regional growth. This scenario isolates the specific effects of the project. The existing-plus-project conditions analyses indicate that the Avenue 12/Jason Court/Fernwood Drive intersection is expected to operate at LOS F with excessive queuing on the northbound approach during both the a.m. and p.m. peak hours. Peak-hour traffic signal volume warrants are expected to be satisfied. The intersection of Avenue 12 and Road 36 is expected to continue to operate at acceptable LOS with calculated 95th-percentile queues contained within the available storage capacity.

Based on the anticipated lane configurations, the traffic signals with alignment of Jason Court and Fernwood Drive would include protected left turns on the eastbound and westbound approaches, while the northbound and southbound approaches would have permissive phasing with only one lane on each approach. In order to order to improve the LOS for the Intersection of Avenue 12, Jason Court, and Fernwood Drive signalization will be required. The signalization will increase the LOS to a C during morning peak hours and to a LOS B during evening peak hours (Peters Engineering Group, 2023). With implementation of Mitigation Measure TRA MM-1, levels of service meeting the County General Plan Policy 2.A.8 standards would be met and the project would have a less than significant impact.

> ***TRA MM-1.*** *The applicant shall fully fund the installation of traffic signals and road improvements at the Avenue 12/Jason Court/Fernwood Drive intersection prior to project occupancy. The intersection improvements shall include protected left turns on the eastbound and westbound approaches, while the northbound and*

southbound approaches would have permissive phasing with only one lane on each approach.

(b) Less Than Significant Impact. The County of Madera has not adopted local significance criteria for VMT analyses. In the absence of local policies, the current state of the practice is to utilize information presented in The State of California Governor's Office of Planning and Research Technical Advisory on Evaluating Transportation Impacts in CEQA dated December 2018 (Technical Advisory). The Technical Advisory states, "Of land use projects, residential, office, and retail projects tend to have the greatest influence on VMT." For small projects, the Technical Advisory states: "Many local agencies have developed screening thresholds to indicate when detailed analysis is needed. Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact." For retail projects, the Technical Advisory states the following:

1. A net increase in total VMT may indicate a significant transportation impact.
2. New retail development typically redistributes shopping trips rather than creating new trip

Regarding local-serving retail uses, the Technical Advisory states: By adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT. Thus, lead agencies generally may presume such development creates a less-than-significant transportation impact. Regional-serving retail development, on the other hand, which can lead to substitution of longer trips for shorter ones, may tend to have a significant impact. Where such development decreases VMT, lead agencies should consider the impact to be less-than-significant. The Technical Advisory also states: Generally, however, retail development including stores larger than 50,000 square feet might be considered regional-serving, and so lead agencies should undertake an analysis to determine whether the project might increase or decrease VMT.

With respect to mixed-use projects, the Technical Advisory states: "Lead agencies can evaluate each component of a mixed-use project independently and apply the significance threshold for each project type included (e.g., residential and retail). Alternatively, a lead agency may consider only the project's dominant use. In the analysis of each use, a project should take credit for internal capture. Combining different land uses and applying one threshold to those land uses may result in an inaccurate impact assessment.

The dominant local-serving retail use of the project will add retail opportunities into the urban fabric, improve retail destination proximity, shorten trips, and reduce VMT. The coffee shop, gasoline, and convenience market nature of the project is designed specifically for pass-by and local-serving trips, is less than 50,000 square feet in building area, and is not a regional destination. Furthermore, given the nature of the existing development in the Madera Ranchos, it is anticipated that many medical office trips are currently long trips, and that the additional opportunity of a medical office nearby is likely to reduce VMT rather than increase VMT. (Peters Engineering Group, 2023). Therefore, the project is reasonably anticipated to have a less-than-significant impact associated

with VMT.

(c) Less Than Significant Impact with Mitigation. With the implementation of Mitigation Measure TRA MM-1, above, which consist of signalization and design considered appropriate for the Avenue 12/Jason Court/Fernwood Drive intersection, the project would have a less than significant impact associated with transportation hazards.

(d) No Impact. The project's three proposed driveway access locations from Avenue 12 and Jason Court would provide adequate emergency vehicle access to the site.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XVIII. TRIBAL CULTURAL RESOURCES				
Would the project:				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	☐	☐	☐	☒
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

Responses:

(a – i, ii) No Impact. In accordance with Public Resources Code Section 21080.3.1, notification letters were sent to tribal representatives of California Native American tribes that have requested to be notified of projects within the project area of Madera County. Tribal representatives were advised of the project and invited to request formal consultation with the County regarding the project within 30 days of receiving the notification letters. Eight notification letters were sent to representatives of the following tribes on April 6, 2022:

1) Table Mountain Rancheria
2) Picayune Rancheria of the Chukchansi Indians
3) Dumna Wo Wah Tribal Government
4) Chowchilla Yokuts Tribe

As of the preparation of this Initial Study, more than 30 days following the County's transmittal of notification letters, no tribal representatives requested consultation. No tribal cultural resources have been identified associated with the site.

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	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it had adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

Responses:

(a–c) Less Than Significant Impact. The project site is vacant and would not result in the relocation of facilities. The project will be connecting to the existing infrastructure and will obtain water services from the Maintenance District (MD) 10A service area (public water system) and installing its own wastewater system which will meet the requirements outlined in Title 13 of the Madera County Code. As a result the project would have a less than significant impact.

(d-e) No Impact. Project construction would generate nominal solid waste associated with construction activities that would be disposed in existing permitted disposal sites. Solid waste generated by the project would not be expected to exceed the existing capacity of local infrastructure and would not conflict with any federal, state, or local management and reduction statutes or regulations.

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	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XX. WILDFIRE If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

Responses:

(a - d) No Impact. The project site is not located in a CalFIRE state responsibility area (SRA) nor is it located in a local responsibility area (LRA) with a fire hazard severity designation. The project would not impair an adopted emergency response or evacuation plan, would not exacerbate wildfire risk, would no require infrastructure having the potential to exacerbate fire risk, and would not create conditions that would expose people or structures to post-fire risks.

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XIX. MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Responses:

(a) Less Than Significant Impact with Mitigation. The analysis conducted in this Initial Study/Mitigated Negative Declaration results in a determination that the project, with the incorporation of mitigation measures, would have a less than significant impact on the environment. As a result, the mitigated project would not have the potential to substantially degrade the quality of the environment and would have a less than significant impact.

(b) Less Than Significant Impact. Implementation of the project would not result in significant cumulative impacts and all potential impacts would be reduced to less than significant with implementation of mitigation.

(c) Less Than Significant Impact. For the reasons discussed in Sections I through XX, above, the Project would not have the potential to result in environmental effects that would cause substantial adverse direct or indirect effects on human beings.

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Appendix

Appendix A
Air Quality and Greenhouse Gas Impact Assessment

Appendix B
Biological Assessment

Appendix C
Acoustical Analysis

Appendix D
Traffic Study

APPENDIX A

Air Quality and Greenhouse Gas Impact Assessment

Madera Ranchos Development

February 15, 2023

Prepared for:

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ABBREVIATIONS

$\mu g/m^3$	Micrograms Per Cubic Meter
AB	Assembly Bill
ACBMs	Asbestos-Containing Building Materials
ATCMs	Airborne Toxic Control Measures
AQP	Air Quality Plan
BACT	Best Available Control Technology
BAU	Business-As-Usual
BPS	Best Performance Standards
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDC	Center for Disease Control and Prevention
CEQA	California Environmental Quality Act
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon dioxide equivalent
DEM	Digital Elevation Model
DPM	Diesel Particulate Matter
EO	Executive Order
GAMAQI	Guide for Assessing and Mitigating Air Quality Impacts
GHG	Greenhouse Gases
GWP	Global Warming Potential
HAP	Hazardous Air Pollutants
HFC	Hydrofluorocarbons
H_2S	Hydrogen Sulfide
LCFS	Low Carbon Fuel Standard
MCTC	Madera County Transportation Commission
MEIR	Maximum Exposed Individual Receptor
MM	Mitigation Measure
MMT	Million Metric Tons
$MMTCO_2e$	Million Metric Tons of Carbon Dioxide Equivalents
$MTCO_2e$	Metric Tons of Carbon Dioxide Equivalents
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NF_3	Nitrogen Trifluoride
N_2O	Nitrous Oxide
NOA	Naturally Occurring Asbestos
NOx	Oxides of Nitrogen
NO_2	Nitrogen Dioxide
O_3	Ozone
OEHHA	Office of Environmental Health Hazard Assessment
Pb	Lead

PFCs	Perfluorocarbons
PG&E	Pacific Gas and Electric Company
PM	Particulate Matter
$PM_{2.5}$	Fine particulate matter; particulate matter 2.5 microns or smaller
PM_{10}	Particulate matter; particulate matter 10 microns or smaller
ppb	parts per billion
ppm	parts per million
ROG	Reactive Organic Gases
RPS	Renewable Portfolio Standard
RTP	Regional Transportation Plan
SB	Senate Bill
SCS	Sustainable Communities Strategy
SF_6	Sulfur Hexafluoride
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_2	Sulfur Dioxide
SO_X	Sulfur Oxides
TAC	Toxic Air Contaminants
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds

1.0 EXECUTIVE SUMMARY

The following air quality and greenhouse gas impact analysis was prepared to evaluate whether construction and operation of the Madera Ranchos Development in Madera County, California would cause significant impacts with respect to air quality and greenhouse gases in the Project area. This assessment was conducted within the context of the California Environmental Quality Act (CEQA) (California Public Resources Code Sections 21000, et seq.).

1.1 PROJECT UNDERSTANDING

The Madera Ranchos Development (Project) proposes to construct a medical office building, restaurant, and neighborhood market with a gas station within Madera County, California.

1.2 SUMMARY OF ANALYSIS

Impact AIR-1: The Project would not conflict with or obstruct implementation of the applicable air quality plan. **Less Than Significant Impact.**

Impact AIR-2: The Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard. **Less Than Significant Impact.**

Impact AIR-3: The Project would not expose sensitive receptors to substantial pollutant concentrations. **Less Than Significant Impact with Mitigation.**

Impact AIR-4: The Project would not result in other emissions (such as those leading to odors) affecting a substantial number of people. **Less Than Significant Impact.**

Impact GHG-1: The Project would not generate direct and indirect greenhouse gas emissions that would result in a significant impact on the environment. **Less Than Significant Impact.**

Impact GHG-2: The Project would not conflict with any applicable plan, policy or regulation of an agency adopted to reduce the emissions of greenhouse gases. **Less Than Significant Impact.**

2.0 INTRODUCTION

2.1 PURPOSE OF ANALYSIS

The purpose of this Air Quality and Greenhouse Gas Impact Technical Study (Study) is to analyze potential air quality and greenhouse gas (GHG) impacts that could occur from the construction and operation of the Project. This assessment was conducted within the context of the California Environmental Quality Act (CEQA).

2.2 PROJECT DESCRIPTION

The Madera Ranchos Development (Project) is located south of Avenue 12 and east of Jason Court in the County of Madera (County) in California (Assessor Parcel Numbers 049-590-033, 049-590-034, 049-590-035, and 049-590-036). Specifically, the site is located in the southeast portion of the Madera Ranchos community. The Project proposes to construct a 16,416 square foot medical office building, a 2,215 square foot quick service restaurant with a drive-through, and a 4,100 square foot neighborhood market with a 6 pump canopy gasoline service station. The gasoline service station is estimated to sell approximately 141,000 gallons of gasoline per month (approximately 1.692 million gallons per year). The site would provide 166 parking spaces, including 7 electrical vehicle charging spots, in a surface parking lot.

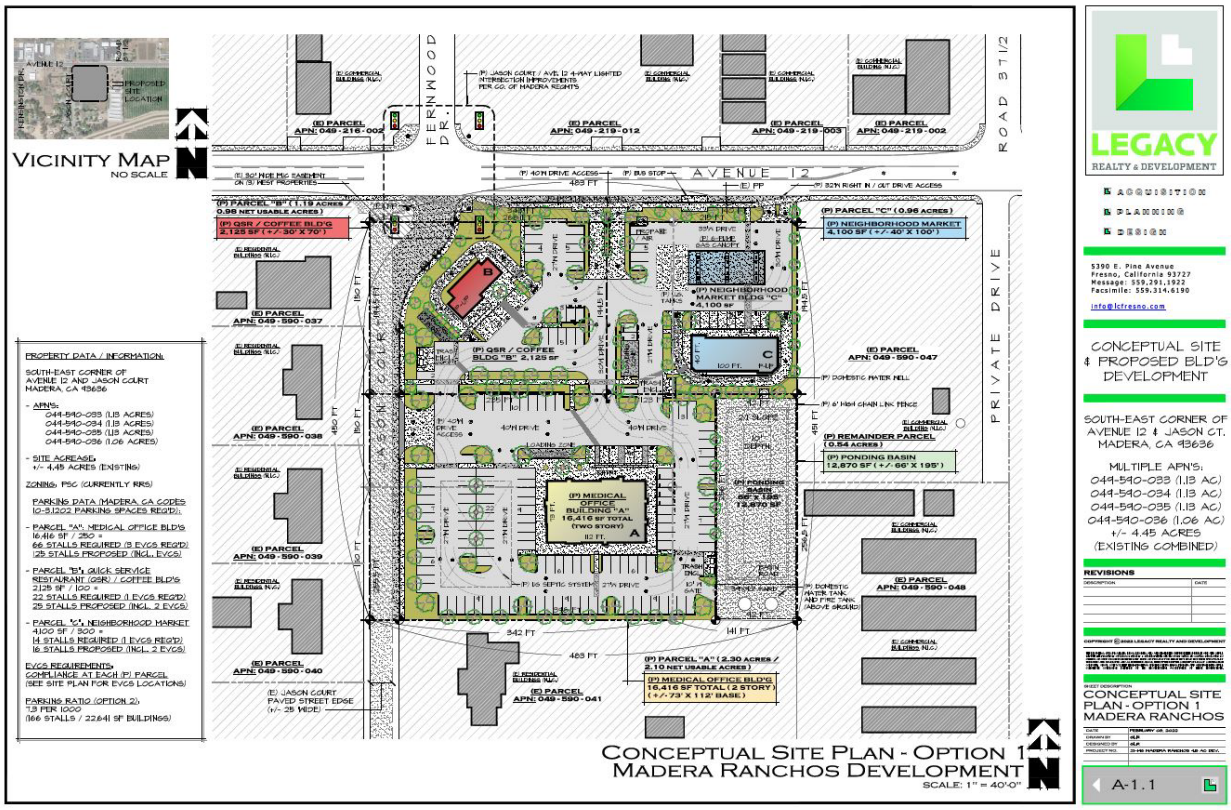
2.2.1 Surrounding Land Uses and Existing Conditions

The existing Project site is vacant and relatively flat. The proposed project site is surrounded by the following uses:

- North: Commercial Uses including a supermarket and stores/restaurants in a strip mall
- East: Agricultural Uses and U-Haul Dealer
- South: Single Family Residential
- West: Single Family Residential

Figure 1: Project Site

Figure 2: Site Plan



3.0 AIR QUALITY

3.1 ENVIRONMENTAL SETTING

The proposed project is located within the San Joaquin Valley Air Basin (SJVAB). The San Joaquin Valley Air Pollution Control District (SJVAPCD) regulates air quality in eight counties including: Fresno, Kern (western and central), Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare.

Air pollution in the SJVAB can be attributed to both human-related (anthropogenic) and natural (non-anthropogenic) activities that produce emissions. Air pollution from significant anthropogenic activities in the SJVAB includes a variety of industrial-based sources as well as on- and off-road mobile sources.

Activities that tend to increase mobile activity include increases in population, increases in general traffic activity (including automobiles, trucks, aircraft, and rail), urban sprawl (which will increase commuter driving distances), and general local land management practices as they pertain to modes of commuter transportation. These sources, coupled with geographical and meteorological conditions unique to the area, contribute to the formation of unhealthy air.

3.1.1 Climate Topography

The following information is excerpted from the most recent version of the SJVAPCD Guide for Assessing, and Mitigating Air Quality Impacts (GAMAQI) adopted in March 2015 (SJVAPCD 2015a).

The SJVAB has an “inland Mediterranean” climate and is characterized by long, hot, dry summers and short, foggy winters. Sunlight can be a catalyst in the formation of some air pollutants (such as ozone); the Basin averages over 260 sunny days per year. The SJVAB is generally shaped like a bowl. It is open in the north and is surrounded by mountain ranges on all other sides. The Sierra Nevada mountains are along the eastern boundary (8,000 to 14,000 feet in elevation), the Coast Ranges are along the western boundary (3,000 feet in elevation), and the Tehachapi Mountains are along the southern boundary (6,000 to 8,000 feet in elevation).

Dominant airflows provide the driving mechanism for transport and dispersion of air pollution. The mountains surrounding the SJVAB form natural horizontal barriers to the dispersion of air contaminants. The wind generally flows south-southeast through the valley, through the Tehachapi Pass and into the Southeast Desert Air Basin portion of Kern County. As the wind moves through the Basin, it mixes with the air pollution generated locally, generally transporting air pollutants from the north to the south in the summer and in a reverse flow in the winter.

Generally, the temperature of air decreases with height, creating a gradient from warmer air near the ground to cooler air at elevation. This gradient of cooler air over warm air is known as the environmental lapse rate. Inversions occur when warm air sits over cooler air, trapping the cooler air near the ground. These inversions trap pollutants from dispersing vertically and the mountains surrounding the San

Joaquin Valley trap the pollutants from dispersing horizontally. Strong temperature inversions occur throughout the SJVAB in the summer, fall, and winter. Daytime temperature inversions occur at elevations of 2,000 to 2,500 feet above the San Joaquin Valley floor during the summer and at 500 to 1,000 feet during the winter. The result is a relatively high concentration of air pollution in the valley during inversion episodes. These inversions cause haziness, which in addition to moisture may include suspended dust, a variety of chemical aerosols emitted from vehicles, particulates from wood stoves, and other pollutants. In the winter, these conditions can lead to carbon monoxide "hotspots" along heavily traveled roads and at busy intersections. During summer's longer daylight hours, stagnant air, high temperatures, and plentiful sunshine provide the conditions and energy for the photochemical reaction between reactive organic gases (ROG) and oxides of nitrogen (NO_X), which results in the formation of ozone.

Because of the prevailing daytime winds and time-delayed nature of ozone, concentrations are highest in the southern portion of the Basin. Summers are often periods of hazy visibility and occasionally unhealthful air, while winter air quality impacts tend to be localized and can consist of (but are not exclusive to) odors from agricultural operations; soot or smoke around residential, agricultural, and hazard-reduction wood burning; or dust near mineral resource recovery operations.

3.1.2 Criteria Air Pollutants

Criteria air pollutants includes ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (measured both in units of smaller than 2.5 microns in diameter [$PM_{2.5}$] and in units of particulate matter smaller than 10 microns in diameter [PM_{10}]), and lead (Pb).

Ozone. Most ground-level O_3 is formed as a result of complex photochemical reactions in the atmosphere between ROGs, NOx, and oxygen. ROGs and NOx are considered precursors to the formation of ozone, a highly reactive gas that can damage lung tissue and affect respiratory function. While ozone in the lower atmosphere is considered a damaging air pollutant, ozone in the upper atmosphere is beneficial, as it protects the Earth from harmful ultraviolet radiation. However, atmospheric processes preclude ground-level ozone from reaching the upper atmosphere (USEPA 2023).

Carbon Monoxide. CO is a colorless, odorless, poisonous gas produced by the incomplete combustion of fossil fuels. Elevated levels of CO can result in harmful health effects, especially for the young and elderly, and can also contribute to global climate change.

Nitrogen Dioxide. NO_2 is a brownish, highly reactive gas primarily produced as a result of the burning of fossil fuels. NO_2 can also lead to the formation of ozone in the lower atmosphere. NO_2 can cause respiratory ailments, especially in the young and elderly, and can lead to degradations in the health of aquatic and terrestrial ecosystems.

Sulfur Dioxide. SO_2 is primarily emitted from the combustion of coal and oil by steel mills, pulp and paper mills, and non-ferrous smelters. High concentrations of SO_2 can aggravate existing respiratory and cardiovascular diseases in asthmatics and others who suffer from emphysema or bronchitis. SO_2 also contributes to acid rain, which in turn, can lead to the acidification of lakes and streams.

Particulate Matter. Airborne PM is not a single pollutant, but rather is a mixture of many chemical species. PM is a complex mixture of solids and aerosols composed of small droplets of liquid, dry solid fragments, and solid cores with liquid coatings. Particles vary widely in size, shape, and chemical composition, and may contain inorganic ions, metallic compounds, elemental carbon, organic compounds, and compounds from the earth's crust. Particles are defined by their diameter for air quality regulatory purposes. Those with a diameter of 10 microns or less (PM_{10}) are inhalable into the lungs and can induce adverse health effects. Fine particulate matter is defined as particles that are 2.5 microns or less in diameter ($PM_{2.5}$). Therefore, $PM_{2.5}$ compromises a portion of PM_{10}. Emissions from combustion of gasoline, oil, diesel fuel or wood produce much of the $PM_{2.5}$ pollution found in outdoor air, as well as significant proportion of PM_{10}. PM_{10} also includes dust from construction sites, landfills and agriculture, wildfires and brush/waste burning, industrial sources, wind-blown dust from open lands, pollen, and fragments of bacteria.

PM may be either directly emitted from sources (primarily particles) or formed in the atmosphere through chemical reactions of gases (secondary particles) such as SO_2, NOx, and certain organic compounds.

Lead. Sources of Pb include pipes, fuel, and paint, although the use of Pb in these materials has declined dramatically in recent years. Historically, a main source of Pb was automobile emissions. Pb can be inhaled directly or ingested by consuming Pb-contaminated food, water, or dust. Fetuses and children are most susceptible to Pb poisoning, which can result in heart disease and nervous system damage. Through regulations the United States Environmental Protection Agency (USEPA) has gradually reduced the Pb content of gasoline. This program has essentially eliminated violations of the Pb standard in urban areas excerpt those areas with Pb point sources.

3.1.3 Attainment Status

The USEPA and the California Air Resources Board (CARB) designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Attainment status is based on the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS). Each standard has a different definition, or "form" of what constitutes attainment, based on specific air quality statistics. For example, the federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual standard for $PM_{2.5}$ is met if the 3-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

The Clean Air Act (CAA) identifies two types of NAAQS. Primary standards provide public health protection, including protecting the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings (USEPA 2021). The CAAQS are equal

to or more stringent than the NAAQS and include pollutants for which national standards do not exist. Table 1 presents the applicable NAAQS and CAAQS for the Project area.

Table 1 California and National Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards	
		Concentration	Primary	Secondary
Ozone	1 hour	0.09 ppm (180 µg/m^3)	—	Same as primary standard
	8 hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	
Respirable particulate matter	24 hour	50 µg/m^3	150 µg/m^3	Same as primary standard
	Annual arithmetic mean	20 µg/m^3	—	
Fine particulate matter	24 hour	—	35 µg/m^3	Same as primary standard
	Annual arithmetic mean	12 µg/m^3	12 µg/m^3	
Carbon monoxide	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	—
	8 hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	—
	8 hour (Lake Tahoe)	6 ppm (7 mg/m^3)	—	—
Nitrogen dioxide	1 hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	—
	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as primary standard
Sulfur dioxide	1 hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	—
	3 hour	—	—	0.5 ppm (1,300 µg/m^3)
	24 hour	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas)	—
	Annual arithmetic mean	—	0.030 ppm (for certain areas)	—
Lead	30-day average	1.5 µg/m^3	—	—
	Calendar quarter	—	1.5 µg/m^3	Same as Primary Standard
	Rolling 3-month average	—	0.15 µg/m^3	
Visibility-reducing particles	8 hour	See Footnote[1]	No National Standards	
Sulfates	24 hour	25 µg/m^3		
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m^3)		
Vinyl chloride	24 hour	0.01 ppm (26 µg/m^3)		

Notes:
µg/m^3 =micrograms per liter
mg/m^3 = milligrams per cubic meter
Source: CARB 2016a

The current attainment designations for the SJVAB are shown in Table 2. The SJVAB is designated as nonattainment for federal and state ozone and PM2.5 and state PM_{10}.

Table 2: San Joaquin Valley Air Basin Attainment Status

Pollutant	Designation/Classification	
	Federal Standards[a]	State Standards[b]
Ozone – One hour	No Federal Standard[f]	Nonattainment/Severe
Ozone – Eight Hour	Nonattainment/Extreme[e]	Nonattainment
PM_{10}	Attainment[c]	Nonattainment
$PM_{2.5}$	Nonattainment[d]	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

Notes:

a See 40 CFR Part 81

b See CCR Title 17 Sections 60200-60210

c On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM10 National Ambient Air Quality Standard (NAAQS) and approved the PM10 Maintenance Plan.

d The Valley is designated nonattainment for the 1997 $PM_{2.5}$ NAAQS. EPA designated the Valley as nonattainment for the 2006 PM2.5 NAAQS on November 13, 2009 (effective December 14, 2009).

e Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).

f Effective June 15, 2005, the U.S. Environmental Protection Agency (EPA) revoked the federal 1-hour ozone standard, including associated designations and classifications. EPA had previously classified the SJVAB as extreme nonattainment for this standard. EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan on March 8, 2010 (effective April 7, 2010). Many applicable requirements for extreme 1-hour ozone nonattainment areas continue to apply to the SJVAB.

Source: SJVAPCD N.d.

3.1.4 Ambient Air Quality

Local air quality can be evaluated by reviewing relevant air pollution concentrations near the Project. Table 3 summarizes published monitoring data from the Madera – Pump Yard Monitoring Station at Road 29 ½ No. of Avenue 8 within the County for the years 2019 to 2021. The Merced-S. Coffee Avenue Monitoring Station monitors ambient ozone and NOx.

Table 3: Madera – Pump Yard Monitoring Station

Air Pollutant	Averaging Time	Item	2019	2020	2021
Ozone	1 Hour	Max 1 Hour (ppm)	0.095	0.107	0.110
		Days > State Standard (0.09 ppm)	1	6	2
	8 Hour	Max 8 Hour (ppm)	0.080	0.092	0.085
		Days > State Standard (0.070 ppm)	6	13	12
		Days > National Standard (0.070 ppm)	6	11	11
		Days > National Standard (0.075 ppm)	3	9	5
Nitrogen Dioxide	1-Hour	Max 1 Hour (ppb)	31.5	47.3	34.7
		Annual Average	6	6	5
		Days > State Standard (180 ppb)	0	0	0
		Days > National Standard (100 ppb)	0	0	0

Source: California Air Resources Board, N.d.
ppb = parts per billion
ppm = parts per million
* = insufficient data available to determine the value

3.1.5 Odors

Typically, odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from the psychological (i.e. irritation, anger, or anxiety) to the physiological, including circulatory and respiratory effects, nausea, vomiting, and headache.

The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals can smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor and in fact an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word strong to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant

reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

Neither the state nor the federal governments have adopted rules or regulations for the control of odor sources. The SJVAPCD does not have an individual rule or regulation that specifically addresses odors; however, odors would be subject to SJVAPCD Rule 4102, Nuisance. Any actions related to odors would be based on citizen complaints to local governments and the SJVAPCD.

3.1.6 Toxic Air Contaminants

Toxic Air Contaminants (TACs) are air pollutants that may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air, but due to their high toxicity, they may pose a threat to public health even at very low concentrations. Because there is no threshold level below which adverse health impacts are not expected to occur, TACs differ from criteria pollutants for which acceptable levels of exposure can be determined and for which state and federal governments have set ambient air quality standards. TACs, therefore, are not considered “criteria pollutants” under either the CAA or the California Clean Air Act (CCAA) and are thus not subject to NAAQS or CAAQS. Instead, the EPA and the CARB regulate Hazardous Air Pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology (BACT) to limit emissions. In conjunction with District rules, these federal and state statutes and regulations establish the regulatory framework for TACs. At the national levels, the EPA has established National Emission Standards for HAPs (NESHAPs), in accordance with the requirements of the FCAA and subsequent amendments. These are technology-based source-specific regulations that limit allowable emissions of HAPs.

Within California, TACs are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for CARB to designate substances as TACs. The following provides a summary of the primary TACs of concern within the State of California and related health effects.

Diesel Particulate Matter

Diesel Particulate Matter (DPM) was identified as a TAC by the CARB in August 1998. DPM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled vehicles contribute approximately 42% of the statewide total, with an additional 55% attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources, contributing about 3% of emissions, include shipyards, warehouses, heavy equipment repair yards, and oil and gas production operations. Emissions from these sources are from diesel-fueled internal combustion engines. Stationary sources that report DPM emissions also include heavy construction, manufacturers of asphalt paving materials and blocks, and diesel-fueled electrical generation facilities (CARB 2016b).

DPM is typically composed of carbon particles (“soot”, also called black carbon) and numerous organic compounds, including over 40 known cancer-causing organic substances. Examples of these chemicals

include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene. Diesel exhaust also contains gaseous pollutants, including volatile organic compounds and NOx. NOx emissions from diesel engines are important because they can undergo chemical reactions in the atmosphere leading to formation of PM2.5 and ozone.

In California, diesel exhaust particles have been identified as a carcinogen accounting for an estimated 70% of the total known cancer risks in California. DPM is estimated to increase statewide cancer risk by 520 cancers per million residents exposed over an estimated 70-year lifetime. Non-cancer health effects associated with exposure to DPM include premature death, exacerbated chronic heart and lung disease, including asthma, and decreased lung function in children. Short-term exposure to diesel exhaust can also have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks (CARB 2016b).

Individuals most vulnerable to non-cancer health effects of DPM are children whose lungs are still developing and the elderly who often have chronic health problems. The elderly and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to DPM (CARB 2016b). In addition to its health effects, DPM significantly contributes to haze and reduced visibility.

Asbestos

Asbestos is the name given to a number of naturally occurring fibrous silicate minerals that have been mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States. Exposure to asbestos is a health threat; exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest, and abdominal cavity), and asbestosis (a non-cancerous lung disease that causes scarring of the lungs). Exposure to asbestos can occur during demolition or remodeling of buildings constructed prior to its ban for use in buildings in 1977. Exposure to naturally occurring asbestos can occur during soil disturbing activities in areas with deposits present.

Benzene

Benzene was identified as a TAC by CARB in 1985. CARB is widely used across the United States and is commonly emitted from gasoline service stations. Subsequently, CARB adopted the Airborne Toxic Control Measure (ACTM) to reduce benzene emissions from retail gasoline stations. The ACTM requires the use of best available control technology which requires gasoline stations to install CARB-certified vapor recovery control equipment to reduce benzene emissions (CARB 2023).

3.1.7 Valley Fever

Valley Fever is an infection caused by a fungus that lives in the soil. About 10,000 U.S. cases are reported each year, mostly from Arizona and California. Valley fever can be misdiagnosed because its symptoms are like those of other illnesses.

The fungus that causes Valley fever, Coccidioides, is found in the southwestern United States, parts of Mexico and Central America, and parts of South America. The fungus grows naturally and is endemic in many areas along the southwestern region of Tulare County. People can get this infection by breathing in fungal spores from the air, especially when the wind blows the soil with the fungal spores into the air or the dirt is moved by human activity. About 40% of the people who come into contact with the fungal spores will develop symptoms that may require medical treatment and the symptoms will not go away on their own. Some people may develop a more severe infection, especially those with compromised immune systems (Centers for Disease Control and Prevention [CDC] 2020).

3.1.8 Sensitive Receptors

Those who are sensitive to air pollution include children, the elderly, and persons with pre-existing respiratory or cardiovascular illness. For the purposes of CEQA, the SJVAPCD considers a sensitive receptor a location that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Examples of sensitive receptors include hospitals, residences, convalescent facilities, and schools.

The project site is located within 1,000 feet from existing sensitive receptors that could be exposed to diesel emission exhaust during the construction periods and from benzene emissions from the gas station during operation. The nearest sensitive receptors are residents occupying the residential single-family houses to the west and south of the project site.

3.2 REGULATORY SETTING

Air quality within the project area is regulated by several jurisdictions including the USEPA, CARB, and the SJVAPCD. Each of these jurisdictions develops rules, regulations, and policies to attain the goals or directives imposed upon them through legislation. Although USEPA regulations may not be superseded, both state and local regulations may be more stringent.

3.2.1 Federal

U.S. Environmental Protection Agency

At the federal level, the USEPA has been charged with implementing national air quality programs. The USEPA's air quality mandates are drawn primarily from the CAA, which was signed into law in 1970. Congress substantially amended the CAA in 1977 and again in 1990.

Federal Clean Air Act

The CAA required the USEPA to establish NAAQS, and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions. NAAQS are summarized above in Table 1.

National Emission Standards for Hazardous Air Pollutants

Pursuant to the CAA of 1970, the USEPA established the NESHAPs. These are technology-based source-specific regulations that limit allowable emissions of HAPs. Among these sources include asbestos-containing building materials (ACBMs). NESHAPs include requirements pertaining to the inspection, notification, handling, and disposal of ACBMs associated with the demolition and renovation of structures.

3.2.2 State

California Air Resources Board

CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the CCAA of 1988. Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts), establishing CAAQS, which in many cases are more stringent than the NAAQS, and setting emissions standards for new motor vehicles. The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel and engine used. The CAAQS are summarized above in Table 1.

California Clean Air Act

The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for O_3, CO, SO_2, and NO_2 by the earliest practical date. The CCAA specifies that districts focus attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a 5% annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

Assembly Bills 1807 & 2588 - Toxic Air Contaminants

Within California, TACs are regulated primarily through Assembly Bill (AB) 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB designates a substance as a TAC.

Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

Assembly Bill 617

In response to AB 617 (C. Garcia, Chapter 136, Statutes of 2017), the CARB established the Community Air Protection Program. The Community Air Protection Program includes community air monitoring and community emissions reduction program's focus is to reduce exposure in communities most impacted by air pollution. The Legislature has appropriated funding to support early actions to address localized air pollution through targeted incentive funding to deploy cleaner technologies in these communities, as well as grants to support community participation in the AB 617 process. AB 617 also includes new requirements for accelerated retrofit of pollution controls on industrial sources, increased penalty fees, and greater transparency and availability of air quality and emissions data, which will help advance air pollution control efforts throughout the State.

Naturally-Occurring Asbestos Regulations

CARB has adopted two Airborne Toxic Control Measures (ATCMs) which regulates the control of Naturally Occurring Asbestos (NOA) associated with construction, surfacing, grading, mining, and quarrying activities. The SJVAPCD is responsible for enforcing Asbestos ATCMs. There are no known likely areas of NOA in the Project area (USGS 2011).

Regulatory Attainment Designations

Under the CCAA, CARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data does not support either an attainment or nonattainment designation. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The EPA designates areas for O_3, CO, and NO_2 as "does not meet the primary standards," "cannot be classified," or "better than national standards." For SO_2, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, CARB terminology of attainment, nonattainment, and unclassified is more frequently used. The EPA uses the same sub-categories for nonattainment status: serious, severe, and extreme. In 1991, EPA assigned new nonattainment designations to areas that had previously been

classified as Group I, II, or III for PM_{10} based on the likelihood that they would violate national PM_{10} standards. All other areas are designated "unclassified."

As discussed previously, the SJVAB is designated as nonattainment for the federal ozone and $PM_{2.5}$ standards. The SJVAB is nonattainment for State ozone, PM_{10}, and $PM_{2.5}$ standards.

3.2.3 Regional

San Joaquin Valley Air Pollution Control District

The SJVAPCD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained in the SJVAB, within which the proposed project is located. Responsibilities of the SJVAPCD include, but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the FCAA and the CCAA.

SJVAPCD Rules and Regulations

The SJVAPCD rules and regulations that may apply to projects that will occur during buildout of the project include but are not limited to the following:

Rule 2010 – Permits Required. The purpose of this rule is to require any person constructing, altering, replacing or operating any source operation which emits, may emit, or may reduce emissions to obtain an Authority to Construct or a Permit to Operate. This rule also explains the posting requirements for a Permit to Operate and the illegality of a person willfully altering, defacing, forging, counterfeiting or falsifying any Permit to Operate.

Rule 2201 – New and Modified Stationary Source Review Rule. The purpose of this rule is to provide for the following:

- The review of new and modified Stationary Sources of air pollution and to provide mechanisms including emission trade-offs by which Authorities to Construct such sources may be granted, without interfering with the attainment or maintenance of Ambient Air Quality Standards; and
- No net increase in emissions above specified thresholds from new and modified Stationary Sources of all nonattainment pollutants and their precursors.

Rule 4002 – National Emission Standards for Hazardous Air Pollutants. This rule incorporates the National Emission Standards for Hazardous Air Pollutants from Part 61, Chapter I, Subchapter C, Title 40, Code of Federal Regulations (CFR) and the National Emission Standards for Hazardous Air Pollutants for Source Categories from Part 63, Chapter I, Subchapter C, Title 40, Code of Federal Regulations.

Rule 4102 – Nuisance. The purpose of this rule is to protect the health and safety of the public and applies to any source operation that emits or may emit air contaminants or other materials.

Rule 4601 – Architectural Coatings. The purpose of this rule is to limit Volatile Organic Compounds (VOC) emissions from architectural coatings. Emissions are reduced by limits on VOC content and providing requirements on coatings storage, cleanup, and labeling.

Rule 4622 – Gasoline Transfer into Motor Vehicles. The purpose of this rule is to limit emissions of gasoline vapors from the transfer of gasoline into motor vehicle fuel tanks

Rule 4623 – Storage of Organic Liquids. The purpose of this rule is to limit volatile organic compound (VOC) emissions from the storage of organic liquids.

Rule 4624 – Transfer of Organic Liquids. The purpose of this rule is to limit volatile organic compound (VOC) emissions from the transfer of organic liquids.

Rule 4641 – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations. The purpose of this rule is to limit VOC emissions from asphalt paving and maintenance operations. If asphalt paving will be used, then the paving operations will be subject to Rule 4641.

Regulation VIII – Fugitive PM_{10} Prohibitions. Rule 8011-8081 are designed to reduce PM_{10} emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and trackout, etc. All development projects that involve soil disturbance are subject to at least one provision of the Regulation VIII series of rules.

Rule 9510 – Indirect Source Review. This rule reduces the impact of NOx and PM10 emissions from growth on the Air Basin. The rule places application and emission reduction requirements on development projects meeting applicability criteria to reduce emissions through onsite mitigation, offsite District -administered projects, or a combination of the two. This project is subject to Rule 9510 because it would develop more than 2,000 square feet of commercial uses.

CEQA

The SJVAPCD has three roles under CEQA:

Lead Agency: responsible for preparing environmental analyses for its own projects (adoption of rules, regulations, or plans) or permit projects filed with the District where the District has primary approval authority over the project.

Responsible Agency: The discretionary authority of a Responsible Agency is more limited than a Lead Agency; having responsibility for mitigating or avoiding only the environmental effects of those parts of the project which it decides to approve, carry out, or finance. The District defers to the Lead Agency for preparation of environmental documents for land use projects that also have discretionary air quality permits unless no document is prepared by the Lead Agency and potentially significant impacts related to

the permit are possible. The District comments on documents prepared by Lead Agencies to ensure that District concerns are addressed.

Commenting Agency: The District reviews and comments on air quality analyses prepared by other public agencies (such as the project).

3.2.4 Local

Madera County General Plan Air Quality Element

The Air Quality Element establishes a central place for goals, objectives and policies to guide and address the wide range of air quality issues facing Madera County. These goals, objectives and policies are consistent with other General Plan Elements, the eight Community Plans, and the Madera County Transportation Commission (MCTC) Regional Transportation Plan. The Air Quality Element was adopted by the Board of Supervisors in 2010 and includes the following goals and policies applicable to the project (Madera County 2010):

- AQ GOAL A1: Achieve effective communication, cooperation, coordination and education in developing and implementing countywide and regional programs to improve air quality and reduce potential climate change impacts.
    - AQ Policy A1.1.1: Designate an Air Quality and Climate Change Coordinator to coordinate County efforts and work with neighboring jurisdictions and affected agencies to minimize cross-jurisdictional transportation and regional transportation and air quality issues.
    - AQ Policy A1.1.2: Consult with the SJVAPCD and MCTC during CEQA review of discretionary projects having the potential for causing adverse air quality, transportation, and climate change impacts. Participate in the SJVAPCD Climate Change Action Plan implementation.
- AQ GOAL B1: Improve Air Quality, Land Use and Transportation Planning integration and reduce impacts through appropriate project location, design and application of best available technologies.
    - AQ Policy B1.1.1: Minimize air quality and potential climate change impacts through project review, evaluation, and conditions of approval when planning the location and design of land uses and transportation systems needed to accommodate expected County population growth. Integrate decisions on land use and development locations with the SJV Blueprint.
- AQ GOAL C1: Use Air Quality Assessment and Mitigation programs and resources of the SJVAPCD and other agencies to minimize air pollution, related public health effects, and potential climate change impacts within the County.
    - AQ Policy C1.1.1: Assess and mitigate project air quality impacts using analysis methods and significance thresholds recommended by the SJVAPCD and require that projects do not exceed established SJVAPCD thresholds.

  - AQ Policy C1.1.2: Assess and mitigate project greenhouse gas/climate change impacts using analysis methods and significance thresholds as defined or recommended by the SJVAPCD, MCTC or California Air Resources Board (ARB) depending on the type of project involved.
  - Policy C1.1.3: Ensure that air quality and climate change impacts identified during CEQA review are minimized and consistently and fairly mitigated at a minimum, to levels as required by CEQA.

- AQ GOAL F1: Minimize exposure of the public to hazardous air pollutant emissions, particulates and noxious odors from freeways, major arterial roadways, industrial, manufacturing, and processing facilities.
  - AQ Policy F1.1.2: Locate new air pollution point sources such as, but not limited to industrial, manufacturing, and processing facilities an adequate distance from residential areas and other sensitive receptors in accordance with the provisions of ARB's Air Quality Land Use Handbook.

4.0 GREENHOUSE GAS

4.1 ENVIRONMENTAL SETTING

To fully understand global climate change, it is important to recognize the naturally occurring "greenhouse effect" and to define the GHGs that contribute to this phenomenon. Various gases in the earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. GHGs, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect.

4.1.1 Local

Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), nitrogen trifluoride (NF_3) and sulfur hexafluoride (SF_6). Primary GHGs attributed to global climate change, are discussed in the following subsections.

Carbon Dioxide. CO_2 is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal

production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere (USEPA 2022a).

Methane (CH_4). CH_4 is a colorless, odorless gas that is not flammable under most circumstances. CH_4 is the major component of natural gas, about 87% by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. CH_4 is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (enteric fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of methane to the atmosphere. Natural sources of methane include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of CH_4 is about 12 years (USEPA 2022a).

Nitrous Oxide (N_2O). N_2O is a clear, colorless gas with a slightly sweet odor. N_2O is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years (USEPA 2022a).

Hydrofluorocarbons (HFCs). HFCs are man-made chemicals, many of which have been developed as alternatives to ozone-depleting substances for industrial, commercial, and consumer products. The only significant emissions of HFCs before 1990 were of the chemical HFC-23, which is generated as a byproduct of the production of HCFC-22 (or Freon 22, used in air conditioning applications). The atmospheric lifetime for HFCs varies from just over a year for HFC-152a to 260 years for HFC-23. Most of the commercially used HFCs have atmospheric lifetimes of less than 15 years (e.g., HFC-134a, which is used in automobile air conditioning and refrigeration, has an atmospheric life of 14 years) (USEPA 2022a).

Perfluorocarbons (PFCs). PFCs are colorless, highly dense, chemically inert, and nontoxic. There are seven PFC gases: perfluoromethane, perfluoroethane, perfluoropropane, perfluorobutane, perfluorocyclobutane, perfluoropentane, and perfluorohexane (C6F14). Natural geological emissions have been responsible for the PFCs that have accumulated in the atmosphere in the past; however, the largest current source is aluminum production, which releases perfluoromethane and perfluoroethane as byproducts. The estimated atmospheric lifetimes for perfluoromethane and perfluoroethane are 50,000 and 10,000 years, respectively (EPA 2022a).

Nitrogen Trifluoride (NF_3). NF_3 is an inorganic, colorless, odorless, toxic, nonflammable gas used as an etchant in microelectronics. NF_3 is predominantly employed in the cleaning of the plasma-enhanced chemical vapor deposition chambers in the production of liquid crystal displays and silicon-based thin film solar cells. In 2009, NF_3 was listed by California as a potential GHG to be listed and regulated under AB 32 (Section 38505 Health and Safety Code).

Sulfur Hexafluoride (SF_6). SF_6 is an inorganic compound that is colorless, odorless, nontoxic, and generally nonflammable. SF_6 is primarily used as an electrical insulator in high voltage equipment. The electric power industry uses roughly 80% of all SF_6 produced worldwide. Leaks of SF_6 occur from aging equipment and during equipment maintenance and servicing. SF6 has an atmospheric life of 3,200 years (USEPA 2022b).

Black Carbon. Black carbon is the most strongly light-absorbing component of PM emitted from burning fuels such as coal, diesel, and biomass. Black carbon contributes to climate change both directly by absorbing sunlight and indirectly by depositing on snow and by interacting with clouds and affecting cloud formation. Black carbon is considered a short-lived species, which can vary spatially and, consequently, it is very difficult to quantify associated global-warming potentials. The main sources of black carbon in California are wildfires, off-road vehicles (locomotives, marine vessels, tractors, excavators, dozers, etc.), on-road vehicles (cars, trucks, and buses), fireplaces, agricultural waste burning, and prescribed burning (planned burns of forest or wildlands). California has been an international leader in reducing emissions of black carbon, including programs that target reducing PM from diesel engines and burning activities (CARB 2023).

4.1.2 Global Warming Potential

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weight each gas by its global warming potential (GWP).

Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted. Based on a 100-year time horizon, Methane traps over 25 times more heat per molecule than CO_2, and N_2O absorbs roughly 298 times more heat per molecule than CO_2. Additional GHGs with high GWP include NF_3, SF_6, PFCs, and black carbon.

4.1.3 Sources of Greenhouse Gas Emissions

On a global scale, GHG emissions are predominantly associated with activities related to energy production; changes in land use, such as deforestation and land clearing; industrial sources; agricultural activities; transportation; waste and wastewater generation; and commercial and residential land uses. World-wide, energy production including the burning of coal, natural gas, and oil for electricity and heat is the largest single source of global GHG emissions.

In 2020, GHG emissions within California totaled 369.2 million metric tons (MMT) of CO_2e. Within California, the transportation sector is the largest contributor, accounting for approximately 38% of the total statewide GHG emissions. Emissions associated with industrial uses are the second largest contributor, totaling roughly 23%. Electricity generation (including instate and imports) totaled roughly 16% (CARB 2022a).

4.1.4 Effects of Global Climate Change

There are uncertainties as to exactly what the climate changes will be in various local areas of the earth. There are also uncertainties associated with the magnitude and timing of other consequences of a warmer planet: sea level rise, spread of certain diseases out of their usual geographic range, the effect on agricultural production, water supply, sustainability of ecosystems, increased strength and frequency of storms, extreme heat events, increased air pollution episodes, and the consequence of these effects on the economy.

Within California, climate changes would likely alter the ecological characteristics of many ecosystems throughout the state. Such alterations would likely include increases in surface temperatures and changes in the form, timing, and intensity of precipitation. For instance, historical records are depicting an increasing trend toward earlier snowmelt in the Sierra Nevada. This snowpack is a principal supply of water for the state, providing roughly 50% of state's annual runoff. If this trend continues, some areas of the state may experience an increased danger of floods during the winter months and possible exhaustion of the snowpack during spring and summer months. An earlier snowmelt would also impact the state's energy resources. An early exhaustion of the Sierra snowpack may force electricity producers to switch to more costly or non-renewable forms of electricity generation during spring and summer months. A changing climate may also impact agricultural crop yields, coastal structures, and biodiversity. As a result, resultant changes in climate will likely have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing, and forestry.

4.2 REGULATORY SETTING

4.2.1 State

Assembly Bill 32

The California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. CARB was established as the state agency charged with monitoring and regulating sources of GHGs. AB 32 states the following:

> *Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.*

CARB approved the 1990 GHG emissions level of 427 $MMTCO_2e$ on December 6, 2007. California met AB 32 goals in July 2018.

CARB 2008 Scoping Plan

The Scoping Plan contains measures designed to reduce the state's emissions to 1990 levels by the year 2020 to comply with AB 32. The Scoping Plan identifies recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors (CARB 2008).

Cap-and-Trade Program

The Cap-and-Trade Program is a key element of the Scoping Plan. It sets a statewide limit on sources responsible for 85 percent of California's GHG emissions and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The program is designed to provide covered entities the flexibility to seek out and implement the lowest cost options to reduce emissions. The program conducted its first auction in November 2012. Compliance obligations began for power plants and large industrial sources in January 2013. Other significant milestones include linkage to Quebec's Cap-and-Trade system in January 2014 and starting the compliance obligation for distributors of transportation fuels, natural gas, and other fuels in January 2015.

The Cap-and-Trade Program provides a firm cap, ensuring that the 2020 statewide emission limit would not be exceeded. An inherent feature of the Cap-and-Trade Program is that it does not guarantee GHG emissions reductions in any discrete location or by any particular source. Rather, GHG emissions reductions are guaranteed only on an accumulative basis.

The Cap-and-Trade Program works with other direct regulatory measures and provides an economic incentive to reduce emissions. If California's direct regulatory measures reduce GHG emissions more than expected, then the Cap-and-Trade Program would be responsible for relatively fewer emissions reductions. If California's direct regulatory measures reduce GHG emissions less than expected, then the Cap-and-Trade Program would be responsible for relatively more emissions reductions. Thus, the Cap-and-Trade Program assures that California would meet its 2020 GHG emissions reduction mandate.

Assembly Bill 398

The Governor signed AB 398 on July 25, 2017, to extend the Cap-and-Trade Program to 2030. The legislation includes provisions to ensure that offsets used by sources are limited to 4 percent of their compliance obligation from 2021 to 2025 and 6 percent of their compliance obligation from 2026 through 2030. AB 398 also prevents air districts from adopting or implementing emission reduction rules from stationary sources that are also subject to the Cap-and-Trade Program (CARB 2017).

Senate Bill 32

Senate Bill (SB) 32 was signed into law on September 8, 2016. SB 32 gives CARB the statutory responsibility to include the 2030 target previously contained in EO B-30-15 in the 2017 Scoping Plan Update. SB 32 states that "In adopting rules and regulations to achieve the maximum technologically

feasible and cost-effective greenhouse gas emissions reductions authorized by this division, the state [air resources] board shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030."

2017 Climate Change Scoping Plan Update

The 2017 Climate Change Scoping Plan Update was adopted on December 14, 2017 amending the 2008 Scoping Plan and addresses the SB 32 targets. The major elements of the framework proposed to achieve the 2030 target are as follows:

1. SB 350
    a. Achieve 50 percent Renewables Portfolio Standard (RPS) by 2030.
    b. Doubling of energy efficiency savings by 2030.
2. Low Carbon Fuel Standard
    a. Increased stringency (reducing carbon intensity 18 percent by 2030, up from 10 percent in 2020).
3. Mobile Source Strategy (Cleaner Technology and Fuels Scenario)
    a. Maintaining existing GHG standards for light- and heavy-duty vehicles.
    b. Put 4.2 million zero-emission vehicles on the roads.
    c. Increase zero-emission vehicles buses and delivery and other trucks.
4. Sustainable Freight Action Plan
    a. Improve freight system efficiency.
    b. Maximize use of near-zero emission vehicles and equipment powered by renewable energy.
    c. Deploy over 100,000 zero-emission trucks and equipment by 2030.
5. Short-Lived Climate Pollutant Reduction Strategy
    a. Reduce emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030.
    b. Reduce emissions of black carbon 50 percent below 2013 levels by 2030.
6. SB 375 Sustainable Communities Strategies
    a. Increased stringency of 2035 targets.
7. Post-2020 Cap-and-Trade Program

a. Declining caps, continued linkage with Québec, and linkage to Ontario, Canada.

b. CARB will look for opportunities to strengthen the program to support more air quality co-benefits, including specific program design elements. In Fall 2016, CARB staff described potential future amendments including reducing the offset usage limit, redesigning the allocation strategy to reduce free allocation to support increased technology and energy investment at covered entities and reducing allocation if the covered entity increases criteria or toxics emissions over some baseline.

8. 20 percent reduction in GHG emissions from the refinery sector.

9. Develop Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

Many of the measures included in the 2017 Climate Change Scoping Plan Update are implemented on a statewide level and do not specifically apply to the Project. However, the short-lived climate pollutants would be applicable to the Program through the use of cleaner construction equipment.

2022 Scoping Plan for Achieving Carbon Neutrality

CARB prepared the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan) in May 2022 to assess progress towards SB 32's 2030 target while laying out a path to achieving carbon neutrality by 2045 as identified in Executive Order (EO) B-55-18. The 2022 Scoping Plan builds upon the successful framework of the previous scoping plan while identifying new, technologically feasible, and cost-effective solutions. The Plan focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities (CARB 2022b).

Assembly Bill 1279

AB 1279 codified into law EO B-55-15 in September 2022. AB 127 requires the state to both achieve net zero GHG emissions as soon as possible, but no later than 2045, and achieve and maintain net negative GHG emissions therefore, and to ensure that by 2045, statewide anthropogenic GHG emissions are reduced to at least 85% below the 1990 levels.

Senate Bill 375: The Sustainable Communities and Climate Protection Act of 2008

SB 375 was signed into law on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits more than 40 percent of the total GHG emissions in California. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

CARB has prepared the Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets.

Assembly Bill 1493: Pavley Regulations and Fuel Efficiency Standards

AB 1493, enacted on July 22, 2002, required CARB to develop and adopt regulations and fuel efficiency standards that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by USEPA's denial of an implementation waiver. USEPA subsequently granted the requested waiver in 2009, which was upheld by the by the U.S. District Court for the District of Columbia in 2011.

The standards were phased in during the 2009 through 2016 model years. When fully phased in, the near-term (2009–2012) standards resulted in an approximately 22 percent reduction compared with the 2002 fleet, and the mid-term (2013–2016) standards resulted in about a 30 percent reduction. Several technologies stand out as providing significant reductions in emissions at favorable costs. These include discrete variable valve lift or camless valve actuation to optimize valve operation, rather than relying on fixed valve timing and lift as has historically been done; turbocharging to boost power and allow for engine downsizing; improved multi-speed transmissions; and improved air conditioning systems that operate optimally, leak less, and/or use an alternative refrigerant.

The second phase of the implementation for AB 1493 was incorporated into Amendments to the Low-Emission Vehicle Program, referred to as LEV III or the Advanced Clean Cars program. The Advanced Clean Cars program combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2017 through 2025. The regulation would reduce GHGs from new cars by 34 percent from 2016 levels by 2025. The rules would reduce pollutants from gasoline and diesel-powered cars and would deliver increasing numbers of zero-emission technologies, such as full battery electric cars, newly emerging plug-in hybrid electric vehicles, and hydrogen fuel cell cars. The regulations would also ensure that adequate fueling infrastructure is available for the increasing numbers of hydrogen fuel cell vehicles planned for deployment in California.

Senate Bill 1368: Emission Performance Standards

In 2006, the State Legislature adopted SB 1368, which was subsequently signed into law by the governor. SB 1368 directs the California Public Utilities Commission to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant.

Because of the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as natural gas, combined cycle plants. Accordingly, the new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the state. The California Public Utilities Commission adopted the regulations required by SB 1368 on August 29, 2007. The regulations

implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 pounds of CO_2 per megawatt-hour (MWh).

Senate Bill 1078: Renewable Electricity Standards

On September 12, 2002, Governor Gray Davis signed SB 1078, requiring California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, Governor Arnold Schwarzenegger signed EO S-14-08, which established an RPS target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Governor Schwarzenegger signed EO S-21-09, which directed CARB to adopt a regulation by July 31, 2010, requiring the state's load serving entities to meet a 33 percent renewable energy target by 2020. CARB approved the Renewable Electricity Standard on September 23, 2010, by Resolution 10-23. In 2011, the State Legislature adopted this higher standard in SB X1-2. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas.

Senate Bill 350: Clean Energy and Pollution Reduction Act of 2015

The legislature approved and the governor then signed SB 350 on October 7, 2015, which reaffirms California's commitment to reducing its GHG emissions and addressing climate change. Key provisions include an increase in the RPS, higher energy efficiency requirements for buildings, initial strategies towards a regional electricity grid, and improved infrastructure for electric vehicle charging stations.

Executive Order S-01-07: Low Carbon Fuel Standard

The governor signed EO S-01-07 on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the EO established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, CARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan for alternative fuels (State Alternative Fuels Plan adopted by California Energy Commission on December 24, 2007) and was submitted to CARB for consideration as an "early action" item under AB 32. CARB adopted the Low Carbon Fuel Standard on April 23, 2009.

The LCFS was subject to legal challenge in 2011. Ultimately, CARB was required to bring a new LCFS regulation for consideration in February 2015. The proposed LCFS regulation was required to contain revisions to the 2010 LCFS as well as new provisions designed to foster investments in the production of the low-carbon fuels, offer additional flexibility to regulated parties, update critical technical information, simplify and streamline program operations, and enhance enforcement. The Office of Administrative Law approved the regulation on November 16, 2015. The regulation was last amended in 2018.

Executive Order S-13-08

EO S-13-08 states that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in the EO, the 2009 California Climate Adaptation Strategy was adopted, which is the "… first statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States." Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

California Energy Code

Compliance with the California Energy Code (Title 24, Part 6, of the California Code of Regulations [CCR], California's Energy Efficiency Standards) and Title 20, Public Utilities and Energy, standards must occur for all new buildings constructed in California. These efficiency standards apply to new construction of both residential and nonresidential (i.e., maintenance buildings and pump station buildings associated with the Program) buildings, and they regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building permit processes, and local government agencies may adopt and enforce energy standards for new buildings provided that these standards meet or exceed those provided in the Title 24 guidelines.

4.2.2 Regional

San Joaquin Valley Air Pollution Control District

On December 17, 2009, the SJVAPCD Governing Board adopted "Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA," and the policy "District Policy—Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency." SJVAPCD concluded that the existing science is inadequate to support quantification of the impacts that project-specific GHG emissions have on global climate change. SJVAPCD found the effects of project-specific emissions to be cumulative, and without mitigation, their incremental contribution to global climate change could be considered cumulatively considerable. SJVAPCD found that this cumulative impact is best addressed by requiring all projects to reduce their GHG emissions, whether through project design elements or mitigation.

5.0 MODELING PARAMETERS AND ASSUMPTIONS

The following modeling parameters and assumptions were used to generate criteria air pollutant and GHG emissions for the Project.

5.1 CRITERIA AIR POLLUTANT AND GHG MODEL SELECTION

The California Emissions Estimator Model (CalEEMod) is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. CalEEMod quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Further, CalEEMod identifies mitigation measures to reduce criteria pollutant and GHG emissions along with calculating the benefits achieved from measures chosen by the user.

CalEEMod was developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the California Air Districts. Default data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California Air Districts to account for local requirements and conditions.

CalEEMod is a comprehensive tool for quantifying air quality impacts from land use projects located throughout California. The model can be used for a variety of situations where an air quality analysis is necessary or desirable such as preparing CEQA or National Environmental Policy Act documents, conducting pre-project planning, and, verifying compliance with local air quality rules and regulations, etc.

CalEEMod version 2020.4.0 was used to model emissions. CalEEMod output files are provided in Appendix A.

5.2 AIR POLLUTANTS AND GHGS ASSESSED

5.2.1 Criteria Pollutants Assessed

The following criteria air pollutants were assessed in this analysis: ROG, NO_X, PM_{10}, and $PM_{2.5}$. Note that the proposed project would emit ozone precursors ROG and NOx. However, the proposed project would not directly emit ozone since it is formed in the atmosphere during the photochemical reaction of ozone precursors.

5.2.2 GHGs Assessed

This analysis was restricted to GHGs identified by AB 32, which include CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, and NF_3. The proposed project would generate a variety of GHGs, including several defined by AB 32 such as CO_2, CH_4, and N_2O.

Certain GHGs defined by AB 32 would not be emitted by the project. HFCs, PFCs, SF_6, and NF_3 are typically used in industrial applications such electronics manufacturing, none of which would be used in construction, operation or maintenance of fuel pumps and typical retail and office buildings. Therefore, it is not anticipated that the proposed project would emit those GHGs.

GHG emissions associated with the proposed project construction, as well as future operations were estimated using CO_2e emissions as a proxy for all GHG emissions. Construction GHG emissions were amortized over the lifetime of the proposed project. In order to obtain the CO_2e, an individual GHG is multiplied by its GWP. The GWP designates on a pound for pound basis the potency of the GHG compared to CO_2.

5.3 ASSUMPTIONS

5.3.1 Construction Modeling Assumptions

Land Use

Table 4 provides a summary of the land use inputs included in the CalEEMod modeling.

Table 4: CalEEMod Land Use Development Summary Table for the Proposed Project

Project Component	CalEEMod Land Use Type	Land Use Unit Amount (Size)	Land Use Size Metric	Total Square Footage	Land Use Acreage
Medical Office Building	Medical Office Building	16,146	SF	16,146	0.37
Fuel Pumps	Gasoline/Service Station	6	Pumps	847	0.02
Neighborhood Market	Convenience Market (24 hour)	4,100	SF	4,100	0.09
Quick Service Restaurant with Drive-Thru	Fast Food Restaurant with Drive Thru	2,215	SF	2,215	0.05
Parking	Parking Lot	166	Space	66,400	1.49
Notes: SF = square feet					

Construction Schedule

The proposed project would require various tasks including site preparation, grading, building construction, architectural coatings, and paving.

Table 5 shows the anticipated construction schedule for the CEQA analysis. The construction schedule utilized in the analysis will represent a "worst-case" analysis scenario since emission factors for construction equipment decrease as the analysis year increases, due to improvements in technology and more stringent regulatory requirements. Therefore, construction emissions would decrease if the construction schedule moved to later years or is phased over multiple years. The duration of construction activity and associated equipment represent a reasonable approximation of the expected construction fleet as required per CEQA guidelines. The site-specific construction fleet may vary due to specific project needs at the time of construction.

Table 5: Project Construction Schedule

Construction Task	Start Date	End Date	Workdays
Site Preparation	4/17/2023	4/21/2023	5
Grading	4/24/2023	5/5/2023	10
Building Construction	5/9/2023	5/17/2024	269
Architectural Coating – Coffee Shop	7/31/2023	9/1/2023	25
Architectural Coating – Medical Office/Market/Fuel Station	9/25/2023	1/22/2024	76
Paving	8/21/2023	9/1/2023	10
Source: CalEEMod Output (Attachment A).			

Construction Equipment

The off-road equipment fleet for construction were generated using default values from CalEEMod. CalEEMod generates construction fleets for construction activities based on the size of the construction areas. Construction equipment for each construction activity by phase is shown in Table 6.

Table 6: Project Construction Equipment

Construction Task	Equipment Type	Pieces of Equipment	Usage (hours/day)	Horsepower	Load Factor	Fuel Type
Site Preparation	Graders	1	8	187	0.41	Diesel
	Scrapers	1	8	367	0.48	Diesel
	Tractors/Loaders/Backhoes	1	7	97	0.37	Diesel

Construction Task	Equipment Type	Pieces of Equipment	Usage (hours/day)	Horsepower	Load Factor	Fuel Type
Grading	Graders	1	8	187	0.41	Diesel
	Rubber Tired Dozers	1	8	247	0.40	Diesel
	Tractors/Loaders/Backhoes	2	7	97	0.37	Diesel
Building Construction – Coffee Shop/Market/Fuel Station/Medical Office	Cranes	1	8	231	0.29	Diesel
	Forklifts	2	7	89	0.20	Diesel
	Generator Sets	1	8	84	0.74	Diesel
	Tractors/Loaders/Backhoes	1	6	97	0.37	Diesel
	Welders	3	8	46	0.45	Diesel
Paving	Tractors/Loaders/Backhoes	1	8	97	0.37	Diesel
	Pavers	1	8	130	0.42	Diesel
	Paving Equipment	1	8	132	0.36	Diesel
	Rollers	2	8	80	0.38	Diesel
	Cement and Mortar Mixers	1	8	9	0.56	Diesel
Architectural Coating – Coffee Shop	Air Compressor	1	6	78	0.48	Diesel
Architectural Coating – Medical Office/Market/Fuel Station	Air Compressor	1	6	78	0.48	Diesel
Source: CalEEMod Output (Attachment A)						

Vehicle Trips

Off-site construction emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM_{10} and $PM_{2.5}$). Table 7 provides a summary of the construction-related vehicle trips. CalEEMod default values were used to estimate the number of construction-related vehicle trips.

CalEEMod quantifies the number of construction workers by multiplying 1.25 times the number of pieces of equipment for all phases (except Building Construction and Architectural Coating). CalEEMod default values were used to estimate the number of vendor vehicle trips. The number of vendor trips during the Building Construction phase is derived from a study conducted by the Sacramento Metropolitan Air Quality Management District (SMAQMD) as per the CalEEMod defaults. The SMAQMD trip survey during construction counted cement and water trucks as vendor trips (instead of counting them as off-road vehicle trips) and these trip rates were incorporated into the calculations for the Building Construction phase. The default values for hauling trips assume that a truck can haul 20 tons (or 16 cubic yards) of material per load. If one load of material is delivered, CalEEMod assumes that one haul truck importing material will also have a return trip with an empty truck (e.g., 2 one-way trips). The project was assumed

to export approximately 8,700 cubic yards of soil to account for the export required to create the storm basins.

The fleet mix for worker trips is light-duty passenger vehicles to light-duty trucks. The vendor trips fleet mix is composed of a mixture of medium and heavy-duty diesel trucks. The hauling trips were assumed to be 100 percent heavy-duty diesel truck trips. CalEEMod default trip lengths for a project in Madera County and an urban setting were used for the worker (10.8 miles), vendor (7.3 miles), and hauling trips (20 miles).

Table 7: Construction Vehicle Trips

Construction Task	Worker Trips per Day	Vendor Trips per Day	Total Haul Truck Trips
Site Preparation	8	0	0
Grading	10	0	1,090
Building Construction	36	15	0
Architectural Coating – Coffee Shop	7	**0**	0
Architectural Coating – Medical Office/Market/Fuel Station	7	0	0
Paving	15	0	0
Notes: Source: CalEEMod Output (Appendix A).			

5.3.2 Operation Modeling Assumptions

Operational emissions are those emissions that occur during operation of the proposed project. The sources are summarized below.

Motor Vehicles

Motor vehicle emissions refer to exhaust and road dust emissions from the automobiles that would travel to and from the proposed project site. Trip generation for the project site was prepared by Peters Engineering Group. During the weekday, the site is expected to generate approximately 4,580 trips/day. On Saturdays and Sundays, the site is expected to generate 4,984 trips/day and 2,440 trips/day, respectively.

Trip Lengths

The CalEEMod default round trip lengths for an urban setting in Madera County were used in this analysis. Trip lengths are for primary trips. Trip purpose are primary, diverted, and pass-by trips. Diverted trips take a slightly different path than a primary trip. Peters Engineering Group calculated the pass-by versus primary trips within the Traffic Impact Assessment. Peters Engineering Group evaluated the

primary and pass-by trips for weekday, Saturday, and Sundays. CalEEMod modeling does not differentiate in primary versus pass-by for weekday, Saturdays, or Sundays. As such, the weekday primary and pass-by trip of 54.9% and 45.1%, respectively, were used for the analysis.

Vehicle Fleet Mix

The vehicle fleet mix is defined as the mix of motor vehicle classes active during the operation of the proposed project. Emission factors are assigned to the expected vehicle mix as a function of vehicle class, speed, and fuel use (gasoline- and diesel-powered vehicles). The fuel station would not service diesel-fueled heavy-duty diesel trucks. The only delivery vehicles would be associated with food and fuel deliveries and sanitation disposal. As such, the default vehicle fleet mix estimate represents a conservative estimate.

Area Sources

Consumer Products

Consumer products are various solvents used in non-industrial applications that emit ROG during their product use. These typically include cleaning supplies, kitchen aerosols, cosmetics, and toiletries. The default CalEEMod values were used for this project.

Architectural Coatings (Painting)

Paints release VOC emissions. The buildings would be repainted on occasion. CalEEMod defaults for the wall painting size and VOC paint concentration were used for this purpose.

Landscaping Emissions

CalEEMod will estimate a total of 180 days for which landscaping equipment would be used to estimate potential emissions for the proposed project.

Indirect Emissions

For GHG emissions, CalEEMod contains calculations to estimate indirect GHG emissions. Indirect emissions are emissions where the location of consumption or activity is different from where actual emissions are generated. For example, electricity would be consumed at the proposed project site; however, emissions associated with producing that electricity are generated off-site at a power plant. Since the electricity can vary greatly based on locations, the user should override these values if they have more specific information regarding their specific water supply and treatment.

Energy Use

Pacific Gas and Electric (PG&E) would provide electricity and natural gas services to the project site. PG&E provides emission factors for the electricity it provides to customers for its energy portfolio that is used to estimate project emissions. The utilities will be required to increase the use of renewable energy

sources to 60 percent by 2030. The latest iteration of the CalEEMod model (Version 2020.4.0) accounts from the Renewable Portfolio Standard (RPS). Default energy factors in CalEEMod for PG&E were used in this analysis.

The emissions associated with the building electricity and natural gas usage (non-hearth) were estimated based on the land use type and size. The electricity energy use is in units of kilowatt hours per size metric for each land use type. Natural gas use is in units of one thousand British Thermal Units per size metric for each land use type. Hearths and stoves are not assumed to be used in industrial projects.

Other Indirect Emissions (Water Use, Wastewater Use, and Solid Waste)

CalEEMod includes calculations for indirect GHG emissions for electricity consumptions, water consumption, and solid waste disposal. For water consumption, CalEEMod calculates embedded energy (e.g., treatment, conveyance, distribution) associated with providing each gallon of potable water to the project. For solid waste disposal, GHG emissions are associated with the disposal of solid waste generated by the proposed project into landfills. CalEEMod default data were used for inputs associated with solid waste.

Fugitive Dust

Construction

Fugitive dust would be generated from site grading and other earth-moving activities. Most of this fugitive dust would remain localized and would be deposited near the project site. However, the potential for impacts from fugitive dust exists unless control measures are implemented to reduce the emissions from the project site. Therefore, adherence to Regulation VIII would be required during construction of the proposed project. Regulation VIII would require fugitive dust control measures that are consistent with best management practices (BMPs) established by the SJVAPCD to reduce the proposed project's construction-generated fugitive dust impacts to a less than significant level.

Visible Dust Emissions may not exceed 20% opacity during periods when soil is being disturbed by equipment or by wind at any time. Visible dust emissions opacity of 20% means dust that would obstruct an observer's view of an object by 20%. District inspectors are state certified to evaluate visible emissions. Dust control may be achieved by applying water before/during earthwork and onto unpaved traffic areas, phasing work to limit dust, and setting up wind fences to limit wind blown dust.

Soil Stabilization is required at regulated construction sites after normal working hours and on weekends and holidays. This requirement also applies to inactive construction areas such as phased projects where disturbed land is left unattended. Applying water to form a visible crust on the soil and restricting vehicle access are often effective for short-term stabilization of disturbed surface areas. Long-term methods including applying dust suppressants and establishing vegetative cover.

Carryout and Trackout occur when materials from emptied or loaded vehicles falls onto a paved surface or shoulder of a public road or when materials adhere to vehicle tires and are deposited onto a paved

surface or shoulder of a public road. Should either occur, the material must be cleaned up at least daily, and immediately if it extends more than 50 feet from the exit point onto a paved road. The appropriate clean-up methods require the complete removal and cleanup of mud and dirt from the paved surface and shoulder. Using a blower device or dry sweeping with any mechanical device other than a PM10-efficient street sweeper is a violation. Larger construction sites, or sites with a high amount of traffic on one or more days, must prevent carryout and trackout from occurring by installing gravel pads, grizzlies, wheel washers, paved interior roads, or a combination thereof at each exit point from the site. In many cases, cleaning up trackout with water is also prohibited as it may lead to plugged storm drains. Prevention is the best method.

Unpaved Access and Haul Roads, as well as unpaved vehicle and equipment traffic areas at construction sites must have dust control. Speed limit signs limiting vehicle speed to 15 mph or less at construction sites must be posted every 500 feet on uncontrolled and unpaved roads.

Storage Piles and Bulk Materials have handling, storage, and transportation requirements that include applying water when handling materials, wetting or covering stored materials, and installing wind barriers to limit VDE. Also, limiting vehicle speeds, loading haul trucks with a freeboard of six inches or greater along with applying water to the top of the load, and covering the cargo compartments are effective measures for reducing VDE and carryout from vehicles transporting bulk materials.

Demolition: activities require the application of water to the exterior of the buildings and to unpaved surfaces where materials may fall. A Dust Control Plan will be required for large demolition projects. Consider all structures slated for demolition as possibly being regulated due to potential asbestos, per District Rule 4002 - National Emission Standards for Hazardous Air Pollutants. Contact the District well before starting because a 10 working-day notice will likely be required before a demolition can begin.

Dust Control Plans identify the dust sources and describe the dust control measures that will be implemented before, during, and after any dust generating activity for the duration of the project. Owners or operators are required to submit plans to the District at least 30 days prior to commencing the work for the following:

- Residential developments of ten or more acres of disturbed surface area.
- Non-residential developments of five or more acres of disturbed surface area.
- The relocation of more than 2,500 cubic yards per day of materials on at least three days.

Operations may not commence until the District has approved the Dust Control Plan. A copy of the plan must be on site and available to workers and District employees. All work on the site is subject to the requirements of the approved dust control plan. A failure to abide by the plan by anyone on site may be subject to enforcement action. Owners or operators of construction projects that are at least one acre in size and where a Dust Control Plan is not required, must provide written notification to the District at least 48 hours in advance of any earthmoving activity.

Record Keeping is required to document compliance with the rules and must be kept for each day any dust control measure is used. The District has developed record forms for water application, street sweeping, and "permanent" controls such as applying long term dust palliatives, vegetation, ground cover materials, paving, or other durable materials. Records must be kept for one year after the end of dust generating activities (Title V sources must keep records for five years).

Nuisances are prohibited at all times because District Rule 4102 – Nuisance applies to all construction sources of fugitive dust, whether or not they are exempt from Regulation VIII. It is important to monitor dust-generating activities and implement appropriate dust control measures to limit the public's exposure to fugitive dust.

5.4 HEALTH RISK ASSESSMENT MODEL SELECTION AND PARAMETERS

An air dispersion model is a mathematical formulation used to estimate the air quality impacts at specific locations (receptors) surrounding emission sources given the rate of emissions and prevailing meteorological conditions. The air dispersion model applied in this assessment was the EPA AERMOD (version 19191) air dispersion model. Specifically, AERMOD was used to estimate air pollutant emission concentrations at sensitive receptor locations from potential sources of project-generated toxic air contaminants (TACs). The use of AERMOD provides a refined methodology for estimating construction impacts by utilizing long-term, measured representative meteorological data for the project site and a representative construction schedule.

The modeling analysis also considered the spatial distribution and elevation of each emitting source in relation to grid receptors. Direction-dependent calculations were obtained by identifying the Universal Transverse Mercator coordinates for each source location. Terrain elevations were obtained for the project site using the AERMAP model, the AERMOD terrain data pre-processor. Specifically, the United Stated Geological Survey's (USGS) Digital Elevation Model (DEM) data for the area were obtained and included in the model runs to account for complex terrain. The air dispersion model assessment used meteorological data from the Madera Station No. 93242, located approximately 14 miles west of the project site. The meteorological data used was preprocessed for use with AERMOD by the SJVAPCD and included data for the years 2015 to 2017; all years were used in the assessment.

Construction HRA Parameters

The concentration of DPM at these nearby sensitive receptors was calculated through EPA's AERMOD air dispersion model with the site modeled as an area source. DPM emissions were assumed to be emitted uniformly across the site. This is representative of the project emissions as emissions sources such as construction equipment and fugitive dust are not generated at a fixed source and are mobile. To model emissions, a release height of 3 meters was chosen to represent the release height of construction equipment. Emissions from off-road construction equipment vehicle travel were distributed throughout the modeled area source.

Operational HRA Parameters

During operation, the Project is expected to generate DPM emissions from vendor and delivery trucks as well as TAC emissions from the gas pumps. Specifically, the TAC emissions released from gas pumps include benzene, ethyl benzene, n-hexane, naphthalene, propylene, toluene, and xylenes. DPM emissions from vendor truck trips would occur both on-site and off-site. On-site trucking emissions include idling and on-site truck travel. On-site truck travel was modeled as a line volume source across the site and on-site truck idling was modeled as multiple point sources around the area of the proposed gas service station. Off-site truck traffic will be modeled in AERMOD along Avenue 12 as a line volume source that lies immediately north of the project. All off-site truck travel would occur on Avenue 12 and were modeled assuming that the trucks would travel one mile from the project site. Since DPM dissipates with distance from the source, this parameter would capture the emissions and associated exposure risk posed to nearby residential receptors from off-site truck traffic. DPM from on-site and off-site vendor trips was calculated through CARB's EMFAC.

TAC emissions from gasoline spillage, refueling, loading, and breathing are assumed to occur within the footprint of the proposed gas station and will be modeled as an area source within AERMOD assuming a release of approximately 1 meter. TAC emissions were calculated based on the project's estimated 141,000 gallon throughput per month and emission factors derived from CARB's Gasoline Service Station Industrywide Ride Assessment Technical Guidance (CARB 2022c). The speciation of TAC emissions for gasoline were based on CARB's guidance for vapor and liquid summer profiles (CARB 2022c).[1]

[1] Annual average speciation profiles were used in this analysis.

6.0 AIR QUALITY IMPACT ANALYSIS

This section calculates the expected emissions from construction and operation of the proposed project as necessary requisite for assessing the regulatory significance of proposed Project emissions on a regional and localized level.

6.1 CEQA GUIDELINES

According to the CEQA Guidelines' Appendix G Environmental Checklist, the following questions are analyzed and evaluated to determine whether impacts to air quality are significant environmental effects.

Where available, the significance criteria established by the applicable air quality management or air pollution district may be relied upon to make the following determinations.

Would the Project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

c) Expose sensitive receptors to substantial pollutant concentrations?

d) Result in other emissions (such as those leading to odors) affecting a substantial number of people?

6.1.1 Thresholds of Significance

While the final determination of whether a project is significant is within the purview of the Lead Agency pursuant to Section 15064(b) of the CEQA Guidelines, the SJVAPCD recommends that its quantitative air pollution thresholds (shown in Table 8) be used to determine the significance of project emissions. If the Lead Agency finds that the project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts.

Table 8: SJVAPCD Significance Thresholds

Pollutant	Significance Threshold	
	Construction Emissions (tons/year)	Operational Emission (tons/year)
CO	100	100
NO_X	10	10
ROGs	10	10
SO_X	27	27
PM10	15	15
PM2.5	15	15

Source: SJVAPCD 2015.

The project does not contain sources that would produce substantial quantities of SO_2 emissions during construction and operation. Modeling conducted for the project show that SO_2 emissions are well below the SJVAPCD GAMAQI thresholds, as shown in the modeling results contained in Appendix A. No further analysis of SO_2 is required.

6.2 AIR IMPACT ANALYSIS

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

Impact Analysis

The CEQA Guidelines indicate that a significant impact would occur if the Project would conflict with or obstruct implementation of the applicable air quality plan. The GAMAQI does not provide specific guidance on analyzing conformity with the Air Quality Plan (AQP). Therefore, this document proposes the following criteria for determining project consistency with the current AQP's:

1. Will the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emissions reductions specified in the AQPs? This measure is determined by comparison to the regional and localized thresholds identified by the District or Regional and Local Air Pollutants.

2. Will the project conform to the assumptions in the AQPs?

3. Will the project comply with applicable control measures in the AQPs?

The use of criteria listed above is a standard approach for CEQA analysis of projects in the SJVAPCD's jurisdictions, as well as within other air districts, for the following reasons:

- Significant contribution to existing or new exceedances of the air quality standards would be inconsistent with the goal of attaining the air quality standards.
- Air Quality Plan (AQP) emissions inventories and attainment modeling are based on growth assumptions for the area within the SJVAPCD's jurisdiction.
- AQPs rely on a set or air district-initiated control measures as well as implementation of federal and state measures to reduce emissions within their jurisdictions, with the goal of attaining the air quality standards.

AQPs are plans for reaching attainment of air quality standards. The assumptions, inputs, and control measures are analyzed to determine if the SJVAB can reach attainment for the ambient air quality standards. To show attainment of the standards, the SJVAPCD analyzes the growth projections in the valley, contributing factors in air pollutant emissions and formations, and existing and adopted emissions controls. The SJVAPCD then formulates a control strategy to reach attainment that includes both State and SJVAPCD regulations and other local programs and measures. The applicable AQPs include the 2016 8-Hour Ozone Plan which contains measures to achieve reductions in emissions of ozone precursors and sets plans towards attainment of ambient ozone standards by 2031 and the 2018, 2016, 2015, 2012, and 2008 $PM_{2.5}$ Plans to address multiple $PM_{2.5}$ air quality standards and attainment deadlines.

Contribution to Air Quality Violations

A measure of determining if the Project is consistent with the air quality plans is if the Project would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations or delay timely attainment of air quality standards or the interim emission reductions specified in the air quality plans. Because of the region's nonattainment status for ozone, $PM_{2.5}$, and PM_{10}, if Project-generated emissions of either of the ozone precursor pollutants (ROG and NO_x), PM_{10}, or $PM_{2.5}$ would exceed the SJVAPCD's significance thresholds, then the Project would be considered to conflict with the attainment plans.

As shown in Impact AIR-2, emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ from construction and operation of the Project would not exceed the SJVAPCD's significance thresholds. As shown in Impact AIR-3, the Project would not expose sensitive receptors to a substantial pollutant concentration with implementation of Mitigation Measure (MM) AQ-1. Therefore, the Project would not contribute to air quality violations.

Consistency with Assumptions in AQPs

The primary way of determining consistency with the AQP's assumptions is determining consistency with the applicable General Plan to ensure that the project's population density and land use are consistent with the growth assumptions used in the AQPs for the SJVAB.

As required by California law, city and county General Plan contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth and designates locations for land uses to regulate growth. The MCTC uses the growth projections and land

use information in adopted general plans, among other sources to estimate future average daily trips and then vehicles miles traveled (VMT), which are then provided to the SJVAPCD to estimate future emissions in the AQPs. Existing and future pollutant emissions computed in the AQPs are based on land uses from area general plans. AQPs detail the control measures and emission reductions required for reaching attainment of the air standards based on these growth and emission estimates.

The applicable General Plan for the project is Madera County General Plan. The Land Use Element of the General Plan was adopted in 1995, prior to the SJVAPCD's adoption of the applicable AQPs. Madera County has designated the project site as a Planned Development District (Madera County 2022). Therefore, the Project would be consistent with the modeling used to prepare the AQPs. The impact would be less than significant.

Control Measures

The AQP contains several control measures, which are enforceable requirements through the adoption of rules and regulations. A detailed description of rules and regulations that apply to this Project is provided in the Regulatory Setting. The Project would comply with all applicable SJVAPCD rules and regulations. Therefore, the project complies with this criterion and would not conflict with or obstruct implementation of the applicable air quality plan.

Conclusion

The Project would not conflict with or obstruct implementation of the applicable AQPs.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None are required.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact AIR-2 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard?

Impact Analysis

To result in a less than significant impact, the following criteria must be true:

1. Regional analysis: emissions of nonattainment pollutants must be below the SJVAPCD's regional significance thresholds. This is an approach recommended by the SJVAPCD in its GAMAQI.

2. Summary of projections: the project must be consistent with current air AQPs including control measures and regulations. This is an approach consistent with Section 15130(b) of the CEQA Guidelines.

3. Cumulative health impacts: the project must result in less than significant cumulative health effects from the nonattainment pollutants. This approach correlates the significance of the regional analysis with health effects, consistent with the court decision, *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1219-20.

Step 1: Regional Analysis

Air pollutant emissions have regional effects and localized effects. This analysis assesses the regional effects of the Project's criteria pollutant emissions in comparison to SJVAPCD thresholds of significance for short-term construction activities and long-term operation of the project. Localized emissions from Project construction and operation are also assessed using concentration-based thresholds that determine if the Project would result in a localized exceedance of any ambient air quality standards or would make a cumulatively considerable contribution to an existing exceedance.

The primary pollutants of concern during Project construction and operation are ROG, NO_x, PM10, and PM2.5. The SJVAPCD GAMAQI adopted in 2015 contains thresholds for ROG and NO_x; SO_x, CO, PM10, and PM2.5.

Ozone is a secondary pollutant that can be formed miles away from the source of emissions through reactions of ROG and NO_x emissions in the presence of sunlight. Therefore, ROG and NO_x are termed ozone precursors. The SJVAB often exceeds the state and national ozone standards. Therefore, if the Project emits a substantial quantity of ozone precursors, the Project may contribute to an exceedance of the ozone standard. The SJVAB also exceeds air quality standards for PM10 and PM2.5; therefore, substantial Project emissions may contribute to an exceedance for these pollutants. The SJVAPCD's annual emission significance thresholds used for the Project define substantial contribution both operational and construction emissions are provided in Table 8.

Construction Emissions

Construction emissions associated with the Project are shown in Table 9. For assumptions in estimating the emissions, please refer to Modeling Parameters and Assumptions. Construction emissions provided in Table 9 are unmitigated. Implementation of MM AQ-1 would further reduce emissions. As shown in Table 9, the emissions are below the significance thresholds and, therefore, are less than significant.

Table 9: Construction Emissions

Emissions Source	Emissions (Tons/Year)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
2023	0.81	2.73	2.89	0.01	0.24	0.15
2024	0.20	1.10	1.25	<0.01	0.08	0.05
Significance Thresholds	10	10	100	27	15	15
Any Year Exceed Significance Thresholds?	No	No	No	No	No	No

Notes:
Emissions were quantified using CalEEMod, version 2020.4.0 based on project details and estimated operating year for the proposed project.
Source of Thresholds: SJVAPCD 2015.

Operations

The emissions output for project operation at full buildout for 2025 are summarized in Table 10. As shown in Table 10, the operational emissions would be less than the thresholds of significance for all criteria air pollutants. The impact is less than significant.

Table 10: Operational Emissions

Source	Emissions (tons/year)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area	0.11	<0.01	<0.01	0.00	<0.01	<0.01
Energy	<0.01	0.04	0.03	<0.01	<0.01	<0.01
Mobile	1.95	2.71	14.20	0.03	2.45	0.68
Total	2.07	2.75	14.23	0.03	2.46	0.68
Significance Thresholds	10	10	100	27	15	15
Exceed Significance Thresholds?	No	No	No	No	No	No

Notes:

Emissions were quantified using CalEEMod, version 2020.4.0 based on project details and estimated operating year for the proposed project. Totals may not sum exactly due to rounding.

If an area is in nonattainment for a criteria pollutant, then the background concentration of that pollutant has historically exceeded the ambient air quality standard. It follows that if a project exceeds the regional threshold for that nonattainment pollutant, then it would result in a cumulatively considerable net increase of that pollutant and result in a significant cumulative impact.

The SJVAB is in nonattainment for PM_{10}, $PM_{2.5}$, and ozone. Therefore, if the Project exceeds the regional thresholds for PM_{10}, or $PM_{2.5}$, then it contributes to a cumulatively considerable impact for those pollutants. If the Project exceeds the regional threshold for NO_X or ROG, then it follows that the Project would contribute to a cumulatively considerable impact for ozone.

The criteria pollutant emissions analysis, as shown in above, assessed whether the Project would exceed the SJVAPCD's thresholds of significance. As shown in Table 9: and Table 10 criteria pollutant emissions would not exceed any threshold of significance during Project construction or operation. Therefore, the combination of unmitigated Project emissions with the criteria pollutants from other sources within the SJVAB would not cumulatively contribute to a significant impact according to this criterion.

Step 2: Plan Approach

Section 15130(b) of the CEQA Guidelines states the following:

The following elements are necessary to an adequate discussion of significant cumulative impacts: 1) Either: (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact.

In accordance with CEQA Guidelines 15130(b), this analysis of cumulative impacts is based on a summary of projections analysis. The SJVAB is in nonattainment for ozone and particulate matter (PM_{10} and $PM_{2.5}$), which means that concentrations of these pollutants currently exceed the applicable ambient air quality standards.

Cumulative impacts may be analyzed using other plans that evaluate relevant cumulative effects. The geographic scope for cumulative criteria pollution from air quality impacts is the SJVAB, because that is the area in which the air pollutants generated by the sources within the SJVAB circulate and are often trapped. The SJVAPCD is required to prepare and maintain air quality attainment plans and a State Implementation Plan to document the strategies and measures to be undertaken to reach attainment of ambient air quality standards. While the SJVAPCD does not have direct authority over land use decisions, it is recognized that changes in land use and circulation planning would help the SJVAB achieve clean air mandates. The SJVAPCD evaluated emissions from land uses and transportation in the entire SJVAB when it developed its attainment plans.

In accordance with CEQA Guidelines Section 15064, subdivision (h)(3), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the Project complies with the requirements in a previously approved plan or mitigation program.

As discussed in Impact AIR-1, the project is consistent with all applicable control measures in the air quality attainment plans. The Project would be required to comply with any SJVAPCD rules and regulations that may pertain to implementation of the AQPs. Therefore, impacts would be less than significant with regard to compliance with control measures and regulations.

Step 3: Cumulative Health Impacts

The SJVAB is in nonattainment for ozone, PM_{10}, and $PM_{2.5}$, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (such as children, the elderly, and the infirm). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience health effects.

Adverse health effects induced by ozone includes short-term effects such as coughing, difficulty breathing, and sore throat as well as long-term effects including inflamed or damaged airways, aggravated lung diseases like asthma or bronchitis, and increased frequency of asthma attacks. O_3 is created through chemical reactions between NOx, ROG, and oxygen (USEPA 2022c). Therefore, the health effects related to O_3 are the product of emissions generated by numerous sources throughout the region.

Exposure to particulate matter (PM_{10} and $PM_{2.5}$) can affect the lungs and heart and may cause irregular heartbeat, aggravated asthma, and decreased lung function (USEPA 2022d). Direct sources of particulate matter include construction sites, unpaved roads, fields, and fires. Particulate matter is also formed indirectly as a result of complex reactions of chemicals such as SOx and NOx (USEPA 2022d).

The SJVAPCD has acknowledged that while HRAs for localized air toxic impacts are commonly prepared, the currently available modeling tools are not equipped to provide a meaningful analysis of the correlation between an individual development project's criteria air pollutant emissions and specific human health impacts (SJVAPCD 2015b). The South Coast Air Quality Management District (SCAQMD) states that based on their own modeling in the SCAQMD's *2012 Air Quality Management Plan*, a reduction of 432 tons (864,000 pounds) per day of NOx and a reduction of 187 tons (374,000 pounds) per day of VOC would reduce O_3 levels at the highest monitored site by only nine parts per billion. As such, the SCAQMD concludes that it is not currently possible to accurately quantify O_3-related health impacts caused by NOx or VOC emissions from relatively small projects (defined as projects with regional scope) due to photochemistry and regional model limitations (SCAQMD 2015).

The regional analysis of construction and operational emissions, as shown above indicates that the Project would not exceed the SJVAPCD's significance thresholds, and the Project is consistent with the applicable AQPs. Therefore, the Project's emissions would not have a measurable effect on human health and would not result in significant cumulative health impacts from nonattainment pollutants and impacts would be less than significant.

Conclusion

The proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None are required.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact AIR-3 Expose sensitive receptors to substantial pollutant concentrations?

Impact Analysis

This discussion addresses whether the proposed Project would expose sensitive receptors to NOA, construction-generated fugitive dust (PM_{10}), ROG, NO_X, $PM_{2.5}$, Valley Fever, construction generated DPM and operational health risks from the proposed service station. A sensitive receptor is a person in a population who is particularly susceptible to health effects due to exposure to an air contaminant. The following are land uses (sensitive sites) where sensitive receptors are typically located:

- Long-term health care facilities
- Rehabilitation centers
- Convalescent centers
- Hospitals
- Retirement homes
- Residences
- Schools, playgrounds and childcare centers

The proposed Project is not considered a sensitive receptor once operational, however there are nearby offsite residents adjacent to the project site.

Localized Impacts

Emissions occurring at or near the Project have the potential to create a localized impact also referred to as an air pollutant hotspot. Localized emissions are considered significant if when combined with background emissions, they would result in exceedance of any health-based air quality standard. In locations that already exceed standards for these pollutants, significance is based on a significant impact level (SIL) that represents the amount that is considered a cumulatively considerable contribution to an existing violation of an air quality standard. The pollutants of concern for localized impact in the SJVAB are NO_2 and CO.

The SJVAPCD has provided guidance for screening localized impacts in the GAMAQI that establishes a screening threshold of 100 pounds per day of any criteria pollutant. If a project exceeds 100 pounds per day of any criteria pollutant, then ambient air quality modeling would be necessary. If the Project does not exceed 100 pounds per day of any criteria pollutant, then it can be assumed that it would not cause a violation of an ambient air quality standard.

Construction: Screening for Localized Concentrations of PM10, PM2.5, CO, and NO_2

Local construction impacts would be short-term in nature lasting only during the duration of construction. Because of the short duration and limited amount of construction anticipated for the Project, application of best management practices through compliance with Regulation VIII Fugitive Dust Prohibitions to minimize construction emissions, and levels of emissions less than the SJVAPCD's emission significance thresholds, localized construction concentrations are considered less than significant. It should also be noted that the on-site construction emissions would be less than 100 pounds per day for each of the criteria pollutants, as shown in Table 11 below. To present a conservative estimate, daily maximum emissions from the CalEEMod output files were compared to localized significance thresholds. These daily maximum emissions account for both on-site and off-site emissions. It should be noted that the estimates below do not include reductions associated with Rule 9510 compliance, which would reduce NO_X and PM_{10} emissions. Based on the SJVAPCD's guidance the construction emissions would not cause an ambient air quality standard violation. Impacts would be less than significant.

Table 11: Screening for Localized Concentrations of PM10, PM2.5, CO, and NO_X for Construction

Emissions Source	Emissions (pounds per day)			
	NO_X	CO	PM_{10}	PM2.5
2023	43.00	46.77	10.0	4.67
2024	29.51	34.82	2.12	1.41
Significance Thresholds	100	100	100	100
Any Year Exceed Significance Thresholds?	No	No	No	No

Notes: PM_{10} and $PM_{2.5}$ emissions are from the unmitigated output and as a result are more conservative as they do not reflect compliance with Regulation VIII—Fugitive PM_{10} Prohibitions. The table only accounts for on-site construction emissions.
Source of Emissions: CalEEMod Output (Attachment A).
Daily maximum emissions in the table account for on-site and off-site emissions.
Source of Thresholds: SJVAPCD 2015.

Operation: Localized Concentrations of PM10, PM2.5, CO, and NO_2

Localized impacts could occur in areas with a single large source of emissions such as a power plant or with multiple sources concentrated in a small area such as a distribution center. As a small commercial center, the proposed project would not be expected to cause a local exceedance for on-site emissions.

Construction

ROG

During paving operations, ROG is emitted. The amount emitted is dependent on the amount of ROG (or VOC) in the paving materials. There are three types of asphalt that are typically used in paving: asphalt cements, cutback asphalts, and emulsified asphalts. However, SJVAPCD Rule 4641 prohibits the use of the following types of asphalt: rapid cure cutback asphalt; medium cure cutback asphalt; slow cure asphalt that contains more than one-half (0.5) percent of organic compounds that evaporate at 500 degrees Fahrenheit (°F) or lower; and emulsified asphalt containing organic compounds, in excess of 3 percent by volume, that evaporate at 50°F or lower. An exception to this is medium cure asphalt when the National Weather Service official forecast of the high temperature for the 24-hour period following application is below 50°F.

The acute (short-term) health effects from worker direct exposure to asphalt fumes include irritation of the eyes, nose, and throat. Other effects include respiratory tract symptoms and pulmonary function changes. The studies were based on occupational exposure of fumes. Sensitive receptors are not in the immediate vicinity of the fumes; therefore, they would not be subjected to concentrations high enough to evoke a negative response. In addition, the restrictions that are placed on asphalt in the San Joaquin Valley reduce ROG emissions from asphalt and exposure. The impact to sensitive receptors from ROG during construction is less than significant.

Naturally-Occurring Asbestos

According to a map of areas where naturally occurring asbestos in California are likely to occur (USGS 2011), there are no such areas in the Project area. Therefore, development of the project is not anticipated to expose receptors to naturally occurring asbestos. Impacts would be less than significant.

Fugitive Dust (PM10)

PM10 emissions would not exceed the thresholds of significance, nevertheless, the potential for localized PM10 health impacts are a concern, however, the Project would comply with the SJVAPCD's Regulation VIII incorporating Best Management Practices for reducing fugitive dust, thus potential impacts are reduced to a less than significant level.

Valley Fever

Valley fever, or coccidioidomycosis, is an infection caused by inhalation of the spores of the fungus, *Coccidioides immitis* (*C. immitis*). The spores live in soil and can live for an extended time in harsh environmental conditions. Activities or conditions that increase the amount of fugitive dust contribute to greater exposure, and they include dust storms, grading, and recreational off-road activities. The San Joaquin Valley is considered an endemic area for Valley fever.

Construction activities would generate fugitive dust that could contain *C. immitis* spores. The Project will minimize the generation of fugitive dust during construction activities by complying with the SJVAPCD's Regulation VIII. Therefore, this regulation would reduce Valley fever impacts to less than significant.

During operations, dust emissions are anticipated to be negligible, because most of the Project area would be occupied by buildings, pavement, and landscaped areas. This condition would preclude the possibility of the Project from generating fugitive dust that may contribute to Valley fever exposure. Impacts would be less than significant.

Health Risk Assessment

The proposed Project has the potential to generate TAC emissions during Project construction and gasoline service station operations. A construction and operational HRA was prepared in accordance with SJVAPCD and the Office of Environmental Health Hazard Assessment (OEHHA) guidance for the proposed project and is included as Appendix B. To assess the Project's total health risk impacts, impacts from both construction and operations were considered in this HRA.

Construction

Off-road, heavy-duty diesel equipment used for site grading, building construction, paving, and other construction activities result in the generation of DPM. For construction activity, DPM is the primary air toxic of concern. Because of the proximity of sensitive receptors, to the Project site there is potential for DPM emissions to result in health impacts.

The construction HRA evaluated DPM (represented as exhaust PM_{10}) emissions generated during construction of the proposed project and the related health risk impacts for sensitive receptors located within 1,000 feet of the project boundary. The concentration of DPM at these nearby sensitive receptors was calculated through EPA's AERMOD air dispersion model. The methodology to prepare the construction HRA is detailed in Section 5.4 above.

The current OEHHA guidance recommends that cancer risks be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, it recommends evaluating the risks for the third trimester of pregnancy to age zero (third trimester exposure), 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 exposure, an ASF of 3 for 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 kilograms of body weight per day (L/kg-day). As recommended, 95th percentile breathing rates are used for the third trimester and infant exposure, and 80th percentile breathing rates are used for child and adult exposure. These age-specific breathing rates are 361 L/kg-day for the third trimester receptor, 1,090 L/kg-day for the infant receptors, 572 L/kg-day for child receptors, and 233 L/kg-day for adult receptors (OEHHA 2015). According to OEHHA, the cancer risk for a residential receptor is assumed to start in the third trimester of life.

Results of the health risk analysis for the unmitigated emissions are summarized in Table 12. As shown in Table 12 the Project would exceed SJVAPCD health risk thresholds for the maximally exposed individual receptor (MEIR). As shown in Table 13, implementation of MM AIR-1 would reduce the health risks to below SJVAPCD thresholds. Appendix B contains detailed information for the HRA.

Table 12: Health Risks from Project Construction at the Maximally Exposed Individual Receptor - Unmitigated

Health Impact Metric	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index (DPM)
Risks and Hazards at the MEIR[1]		
Risks and Hazards: 3rd Trimester	3.16	0.054
Risks and Hazards: Infant	40.8	0.054
Risks and Hazards: Child	5.43	0.054
Risks and Hazards: Adult	0.84	0.054
Threshold	**20**	**1**
Exceeds Threshold?	**Yes**	**No**

Notes:
[1] The maximally exposed sensitive receptor is located at an existing residence located immediately west of the project site.
[2] Chronic non-cancer hazard index was estimated by dividing the highest annual DPM concentration (as $PM_{2.5}$ exhaust) for each age group by the REL of 5 $\mu g/m^3$. Benzene concentration was divided by the REL of 3 $\mu g/m^3$.
MEIR = maximally exposed individual receptor
Source: Appendix B.

As shown in Table 12, the cancer risk posed to the MEIR would exceed the cancer risk significance threshold of 20 in one million for the infant scenario. Therefore, the Project would be required to implement MM AIR-1 to reduce health risk impacts. MM AIR-1 would require the use of cleaner off-road construction equipment that would reduce particulate matter exhaust emissions.

Table 13 summarizes the health and hazard impacts at the MEIR after the incorporation of MM AIR-1.

Table 13: Health Risks from Project Construction at the Maximally Exposed Individual Receptor - Mitigated

Health Impact Metric	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index (DPM)
Risks and Hazards at the MEIR[1]		
Risks and Hazards: 3rd Trimester	0.24	0.004
Risks and Hazards: Infant	3.12	0.004
Risks and Hazards: Child	0.46	0.004
Risks and Hazards: Adult	0.06	0.004
Threshold	**20**	**1**
Exceeds Threshold?	**No**	**No**

Notes:
[1] The maximally exposed sensitive receptor is located at an existing residence located immediately west of the project site.
[2] Chronic non-cancer hazard index was estimated by dividing the highest annual DPM concentration (as $PM_{2.5}$ exhaust) for each age group by the REL of 5 $\mu g/m^3$.
MEIR = maximally exposed individual receptor
Source: Appendix B.

Operations

The CARB Air Quality and Land Use Handbook contains recommendations that will "help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution" (CARB 2005), including recommendations for distances between sensitive receptors and certain land uses such as gasoline service stations. As a commercial site with a gas station, the Project is identified as a land use of concern by CARB. However, the gas station would be constructed on the eastern side of the site over 300 feet from sensitive receptors that lie adjacent to the west side of the site. Regardless, to demonstrate that existing receptors would not be impacted by operation of the Project, an operational HRA was prepared. The Project is expected to generate DPM emissions from vendor and delivery trucks as well as TAC emissions from the gas pumps. Specifically, the TAC emissions released from gas pumps include benzene, ethyl benzene, n-hexane, naphthalene, propylene, toluene, and xylenes. The methodology to prepare the operational HRA is detailed in Section 5.4 above.

Results of the health risk analysis are summarized in Table 14. The complete cumulative HRA prepared for the proposed project, including calculations and AERMOD output data used in the construction HRA, are included in Appendix B.

Table 14: Summary of the Health Impacts from Construction and Operations of the Proposed Project (70-year Scenario)

Exposure Scenario	Maximum Cancer Risk (Risk per Million)	Chronic Inhalation Hazard Index (DPM)	Chronic Inhalation Hazard Index (Benzene)
Operation Only Risk (70 Year)	13.90	0.004	-
Operation and Mitigated Construction Risk (70 Year)	17.02	0.003	0.003
Applicable Threshold of Significance	20	1	<0.001
Threshold Exceeded in Either Scenario?	No	No	No

Source: Attachment A.
[1] Risk is calculated at the maximally exposed individual receptor.

As indicated in Tables 13 and 14, project construction and operation would not expose nearby sensitive receptors to substantial pollutant concentration after incorporation of MM AIR-1. Therefore, the impact would be less than significant with mitigation incorporated.

Conclusion

Sensitive receptors would be exposed to substantial pollutant concentrations.

Level of Significance Before Mitigation

Significant Impact.

Mitigation Measures

MM AIR-1: **Cleaner Off-road Construction Equipment.** The following mitigation measure shall be implemented during all phases of construction to reduce potential exposure of diesel particulate matter (DPM) and particulate matter less than 10 micrometers in aerodynamic diameter ($PM_{2.5}$) emissions to sensitive receptors located near the Project site. Prior to the issuance of any grading and/or building permits (whichever occurs earliest), the project applicant shall prepare and submit a construction management plan that includes specifications of the equipment to be used during construction to the Director of Planning, Building and Code Enforcement or the Director's designee. The plan shall meet the standards set forth below:

- For all construction equipment larger than 25 horsepower used at the site, equipment shall meet USEPA Tier 4 emission standards. Tier 4 Interim engines shall, at a minimum, meet USEPA or CARB particulate matter emissions standards for Tier 4 Interim engines.

- Alternatively, use of CARB-certified Level 3 diesel particulate filters on off-road equipment with engines greater than 75 horsepower can be used in lieu of Tier 4 Interim engines or in combination with Tier 4 Interim engines.
- The construction contractor shall maintain records documenting its efforts to comply with this requirement, including equipment lists. Off-road equipment descriptions and information shall include, but are not limited to, equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, and engine serial number.
- Monthly records of equipment usage shall be maintained. At the end of the construction for individual phases, all records shall be submitted to the County of Madera.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation Incorporated.

Impact AIR-4 Result in other emissions (such as those leading to odors) affecting a substantial number of people?

Impact Analysis

While offensive odors rarely cause any physical harm, they can still be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the SJVAPCD. The occurrence and severity of odor impacts depends on numerous factors, including nature, frequency, and intensity of the source, the wind speed and direction, and the sensitivity of the receptor. The nearest sensitive receptor in the vicinity of the proposed Project site would be the residents at single-family homes to the east of the project site.

Construction activities associated with the proposed Project could result in short-term odorous emissions from diesel exhaust associated with construction equipment. However, these emissions would be intermittent and would dissipate rapidly from the source. In addition, this diesel-powered equipment would only be present on site temporarily during construction activities. Therefore, construction would not create objectionable odors affecting a substantial number of people, and the impact would be less than significant.

Land uses typically considered associated with odors include wastewater treatment facilities, waste-disposal facilities, or agricultural operations. The proposed Project does not contain land uses typically associated with emitting objectionable odors and is not located within the screening distances to sources of odors recommended by the SJVAPCD. Therefore, the impact would be less than significant.

Conclusion

The proposed Project would not create objectionable odors affecting a substantial number of people.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None.

Level of Significance After Mitigation

Less Than Significant Impact.

7.0 GREENHOUSE GAS IMPACT ANALYSIS

7.1 CEQA GUIDELINES

The CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on GHGs, the type, level, and impact of emissions generated by the project must be evaluated.

The following GHG significance thresholds are contained in Appendix G of the CEQA Guidelines:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

This section discusses potential impacts concerning greenhouse gases associated with the proposed project and provides mitigation measures where necessary.

7.1.1 Thresholds

The State CEQA Guidelines indicate that a project would normally have a significant adverse GHG impact is the project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reduction the emissions of greenhouse gases.

The SJVAPCD's Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA presents a tiered approach to analyzing project significance with respect to GHG emissions. Project GHG emissions are considered less than significant if they can meet any of the following conditions, evaluated in the order presented:

- Project is exempt from CEQA requirements;
- Project complies with an approved GHG emission reduction plan or GHG mitigation program;
- Project implements Best Performance Standards (BPS); or
- Project demonstrates that specific GHG emissions would be reduced or mitigated by at least 29 percent compared to Business-as-Usual (BAU), including GHG emission reductions achieved since the 2002-2004 baseline period.

On November 20, 2015, the California Supreme Court (Court) issued its decision on the *Center for Biological Diversity v. California Department of Fish and Wildlife* on the Newhall Ranch project case. The

Court determined that there is not substantial evidence to link a specific project's achievement of CARB's Scoping Plan's statewide average reduction below BAU to the conclusion that the project's reduction would meet AB 32's 2020 goals. Furthermore, since the release of SJVAPCD's guidance, SB32 has been issued that requires the state to further reduce GHG emissions beyond the goals laid out in AB32. As a result, the 29 percent reduction in emissions as compared to a BAU standard are outdated and were not used for this analysis.

CEQA Guidelines 15064.4 provides guidance for determining the significance of impacts from GHGs as follows:

(a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

(1) Quantify greenhouse gas emissions resulting from a project; and/or

(2) Rely on a qualitative analysis or performance-based standards.

(b) In determining the significance of a project's greenhouse gas emissions, the lead agency should focus its analysis on the reasonably foreseeable incremental contribution of the project's emissions to the effects of climate change. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national or global emissions. The agency's analysis should consider a timeframe that is appropriate for the project. The agency's analysis also must reasonably reflect evolving scientific knowledge and state regulatory schemes. A lead agency should consider the following factors, among others, when determining the significance of impacts from greenhouse gas emissions on the environment:

(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions (see, e.g., section 15183.5(b)). Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the

project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

(c) A lead agency may use a model or methodology to estimate greenhouse gas emissions resulting from a project. The lead agency has discretion to select the model or methodology it considers most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change. The lead agency must support its selection of a model or methodology with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use.

Project Threshold

The County of Madera does not have a qualified Climate Action Plan currently. However, the Project will be required to comply with a series of state and regional GHG reduction plans, including CARB's 2017 Scoping Plan and SJVAPCD's Climate Change Action Plan (CCAP) Measures. These plans include approved GHG emission reduction plans and Project's consistent with these plans would also comply with SB32. Therefore, as SJVAPCD does not have a quantifiable emissions threshold, project significance was determined based on compliance with applicable plans to reduce GHG emissions in accordance with CEQA Guidelines 15064.4(b)(3).

7.2 GHG IMPACT ANALYSIS

Impact GHG-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Impact Analysis

The following emissions estimate is consistent with CEQA Guidelines 15064.4. CalEEMod was used to estimate the Project's GHG emissions. Modeling assumptions are described in Section 5: Modeling Parameters and Assumptions.

Constructions Emission Inventory

Construction GHGs would be emitted by the off-road construction equipment and vehicle travel by workers and material deliveries to the project site. The estimated construction GHG emissions are shown in Table 15. Because construction GHG emissions are temporary and reduction measures are limited, a common professional practice is to amortize the construction emissions over the life of the project. A retail project is conservatively assumed to have a life of 30 years.

Table 15: Construction Greenhouse Gas Emissions - Unmitigated

Construction Year	$MTCO_2e$
2023	292
2024	134
Total	**426**
Amortized over 30 years[1]	14.2

Notes:

1. GHG emissions are amortized over the 30-year life of the proposed project.

Source: Stantec 2022, CalEEMod 2020.4.0 (Appendix A).

Operational Emission Inventory

Operational or long-term emissions occur over the life of the project. Sources of emissions may include motor vehicles and trucks, energy usage, water usage, waste generation, and area sources, such as landscaping activities and residential woodburning. Operational GHG emissions associated with the project were estimated using CalEEMod 2020.4.0.

Operational GHG emissions are shown in Table 16.

Table 16: Operational Greenhouse Gas Emissions

Source	Emissions ($MTCO_2e$ per year)
Area	>0.01
Energy	64.53
Mobile	2,582
Waste	108
Water	6
Amortized Construction Emissions	14.2
Total	**2,775**

Source: Stantec 2022, CalEEMod 2020.4.0 (Appendix A).

The proposed project's GHG impact is determined by its consistency with applicable statewide and regional GHG reduction plans. As shown in Impact GHG-2, the proposed project would be consistent with the CARB's 2017 Scoping Plan, CARB's 2022 Scoping Plan, MCTC Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), and the County's General Plan goals that aim to

reduce air quality and energy (which in turn reduce GHG emissions), as such the Project will comply with applicable reduction plans and GHG emissions are less than significant.

The proposed project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; the impact is less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact GHG-2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The proposed project would have a significant impact with respect to GHG emissions and global climate change if it would substantially conflict with the provisions of Section 15064.4(b) of the *CEQA Guidelines.*

Pursuant to Appendix G of the *CEQA Guidelines*, a significant GHG impact is identified if the project could conflict with applicable GHG reduction plans, policies, or regulations. Development projects would be subject to complying with SB 32, MCTC's RTP/SCS, and the City's applicable goals. SB 32 is a statewide reduction goal aimed at reducing emissions to 40% below 1990 levels by 2030. CARB's 2017 Scoping Plan sets a framework for the State to meet the reduction targets of SB 32.

Consistency with the 2017 and 2022 CARB Scoping Plan

CARB issued the Final 2017 Scoping Plan Update in November 2017 and establishes emissions reduction strategies necessary to meet SB 32's 2030 reduction goals. In 2022, CARB approved their 2022 Scoping Plan which expands on the Final 2017 Scoping Plan to assess progress in meeting SB 32 and reach AB 1279. Consistency with the 2017 and 2022 Scoping Plans are included in Tables 17 and 18, respectively, below.

Table 17: Project Consistency with Applicable 2017 Scoping Plan Greenhouse Gas Reduction Strategies

Measure Name	Measure Description	Consistency Determination
SB 350 50% Renewable Mandate.	Utilities subject to the legislation will be required to increase their renewable energy mix from 33% in 2020 to 50% in 2030.	**Consistent.** The proposed project will purchase electricity from a utility subject to the SB 350 Renewable Mandate.

Measure Name	Measure Description	Consistency Determination
Low Carbon Fuel Standard	This measure requires fuel providers to meet an 18 percent reduction in carbon content by 2030.	**Consistent.** Fuel sold with contain lower carbon content as the fuel standard is implemented.
Mobile Source Strategy (Cleaner Technology and Fuels Scenario)	Vehicle manufacturers will be required to meet existing regulations mandated by the LEV III and Heavy-Duty Vehicle programs. The strategy includes a goal of having 4.2 million ZEVs on the road by 2030 and increasing numbers of ZEV trucks and buses.	**Consistent.** Delivery and vending trucks accessing the site will be equipped with ZEV's as new trucks are manufactured and the deadline for the goal comes closer.
Short-Lived Climate Pollutant (SLCP) Reduction Strategy	The strategy requires the reduction of SLCPs by 40 percent from 2013 levels by 2030 and the reduction of black carbon by 50 percent from 2013 levels by 2030.	**Consistent.** The project will comply with all SJVAPCD and state regulations governing SLCPs. For example, the project's commercial components including the convenience store will use refrigerators free of HFCs.
SB 375 Sustainable Communities Strategies	Requires Regional Transportation Plans to include a sustainable communities' strategy for reduction of per capita vehicle miles traveled.	**Consistent.** The proposed project would provide necessary services including food and gasoline for drivers along Avenue 12. This allows drivers to stop along their route as compared to driving off route to find other services within the County.
Post-2020 Cap-and-Trade Program	The Post 2020 Cap-and-Trade Program continues the existing program for another 10 years. The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers.	**Consistent.** The post-2020 Cap-and-Trade Program indirectly affects people who use the products and services produced by the regulated industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap- and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the program's first compliance period.

Source: CARB 2017

Table 18: Project Consistency with 2022 Scoping Plan Greenhouse Gas Reduction Strategies

Measure	Consistency Determination
Deploy ZEVs and reduce driving demand	**Consistent.** The Project would cite a new medical office, quick service restaurant, market, and gasoline service station in a rural portion of Madera County. Residents near the Project would have access to new amenities that would decrease driving demand to other areas of the County. Moreover, as the fleet of ZEVs grows within the state, it is expected that more vendor trips and vehicle passenger trips to the site would be from ZEVs. In addition, the Project would include 7 EV parking spaces that would increase EV charging capacity in the area.
Coordinate supply of liquid fossil fuels with declining CA fuel demand	**Consistent.** This measure is aimed at petroleum refineries and fossil fuel extraction operations. The Project would comply and would be expected to sell less fossil fuels as the ZEV fleet in the state grows.
Generate clean electricity	**Consistent.** This measure is aimed at the electric sector to decarbonize. The Project would purchase electricity from utility providers that are expanding GHG free electricity consistent with SB 350 Renewable Mandate.
Decarbonize Buildings	**Consistent.** The Project would comply with the latest California Green Building Standards that require energy and water efficient project design features that would reduce GHG emissions.
Decarbonize Industrial Energy Supply	**Not Applicable.** The Project would not include any industrial land uses.
Reduce non-combustion emissions (Methane)	**Not Applicable.** The Project would not include any land uses that generate significant levels of methane such as landfills or dairy farms.
Reduce non-combustion emissions (Hydrofluorocarbons[HFCs])	**Consistent.** The project will comply with all SJVAPCD and state regulations governing SLCPs, including HFCs. For example, the project's commercial components including the convenience store will use refrigerators free of HFCs.
Compensate for remaining emissions	**Not Applicable.** This measures is aimed at the state government to reduce statewide emissions to meet AB 1279 goals.

Source: CARB 2022b

Consistency with SJVAPCD CCAP

The SJVAPCD has adopted a CCAP, which includes suggested BPS for proposed residential development projects. Appendix J of the SJVAPCD Final Staff Report for the CCAP contains GHG reduction measures that would be applicable to the proposed project. The proposed project's consistency

with these measures is included in Table 19 below. As shown in the table, the project would be consistent with applicable CCAP measures.

Table 19: Project Consistency with Applicable SJVAPCD CCAP GHG Reduction Measures

Measure Name	Measure Description	Project Consistency
TDM and Misc. Measures		
5 – Site Design Measures	Site design to minimize the need for external trips by including services/facilities for day care, banking/ATM, restaurants, vehicle refueling, and shopping.	**Consistent.** The proposed project would create a new gas station with a convenience store, quick service restaurant, and medical office that will allow users to have multiple uses on the site.
11 – Vehicle Idling	Limit idling time for commercial vehicles, including delivery and construction vehicles.	**Consistent.** Construction and all delivery and vendor trucks will be subject to CARB rules that limit idling to 5 minutes.

Source: SJVAPCD 2009.

Consistency with Madera County General Plan

Madera County adopted the Air Quality Element of the General Plan in 2010 and it included a series of goals and policies aimed at reducing air quality emissions. However, the reduction in air quality emissions would also reduce GHG emissions. As shown in Table 20, the proposed project would be consistent with applicable policies of the General Plan.

Table 20: Consistency with the Madera County General Plan

Policy Number	Policy Description	Consistency Determination
AQ Goal A1: Achieve effective communication, cooperation, coordination and education in developing and implementing countywide and regional programs to improve air quality and reduce potential climate change impacts.		
A1.1.1	Designate an Air Quality and Climate Change Coordinator to coordinate County efforts and work with neighboring jurisdictions and affected agencies to minimize cross-jurisdictional transportation and regional transportation and air quality issues.	**Not Applicable.** This policy is aimed at the County, but the proposed project will not interfere with implementation of this policy.
A1.1.2	Consult with the SJVAPCD and MCTC during CEQA review of discretionary projects having the potential for causing adverse air quality, transportation, and climate change impacts. Participate in the SJVAPCD Climate Change Action Plan implementation.	**Not Applicable.** The project is not a discretionary project.
AQ Goal B1: Improve Air Quality, Land Use and Transportation Planning integration and reduce impacts through appropriate project location, design and application of best available technologies.		
B1.1.1	Minimize air quality and potential climate change impacts through project review, evaluation, and conditions of approval when planning the location and design of land uses and transportation systems needed to accommodate expected County population growth. Integrate decisions on land use and development locations with the SJV Blueprint.	**Consistent.** This policy is aimed at the County, but as is required, the CEQA document will be sent to the SJVAPCD for review.
AQ Goal C1: Use Air Quality Assessment and Mitigation programs and resources of the SJVAPCD and other agencies to minimize air pollution, related public health effects, and potential climate change impacts within the County.		
C1.1.1	Assess and mitigate project air quality impacts using analysis methods and significance thresholds recommended by the SJVAPCD and require that projects do not exceed established SJVAPCD thresholds.	**Consistent.** The analysis for the proposed project relies on SJVAPCD methodologies and impact thresholds.

Policy Number	Policy Description	Consistency Determination
AQ Goal A1: Achieve effective communication, cooperation, coordination and education in developing and implementing countywide and regional programs to improve air quality and reduce potential climate change impacts.		
C1.1.2	Assess and mitigate project greenhouse gas/climate change impacts using analysis methods and significance thresholds as defined or recommended by the SJVAPCD, MCTC or California Air Resources Board (ARB) depending on the type of project involved.	**Consistent.** The proposed project is consistent with recommended SJVAPCD methodologies.
C1.1.3	Ensure that air quality and climate change impacts identified during CEQA review are minimized and consistently and fairly mitigated at a minimum, to levels as required by CEQA.	**Consistent.** The proposed project's air quality and greenhouse gas analysis demonstrates that the impacts are less than significant with implementation of MM-AIR-1.
AQ Goal F1: Minimize exposure of the public to hazardous air pollutant emissions, particulates and noxious odors from freeways, major arterial roadways, industrial, manufacturing, and processing facilities.		
F1.1.2	Locate new air pollution point sources such as, but not limited to industrial, manufacturing, and processing facilities an adequate distance from residential areas and other sensitive receptors in accordance with the provisions of ARB's Air Quality Land Use Handbook.	**Consistent.** ARB's Air Quality Land Use Handbook states that most typical gas dispensing facilities have a risk of less than 10 at 50 feet from the source therefore recommends avoiding placing a sensitive receptor within 50 feet of a gas dispensing facility. The closest sensitive receptor lies adjacent to the project site, however the gas station would be placed away from existing residences. As such, existing residences lies over 300 feet west of the proposed location of the gas station.

Source of Measures: Madera County 2010.

Consistency with Madera County Transportation Commission

The Madera County Transportation Commission's (MCTC) 2022 RTP/SCS includes a series of goals for the region that would reduce GHG emissions based on the land use consistency and the reduction of vehicle trips. The proposed project's consistency with these measures is included in Table 21 below. As shown in the table, the project would be consistent with applicable MCTC measures.

Table 21: Project Consistency with MCTC 2022 RTP/SCS Goals

Objectives	Consistency
Provide equitable access to effective transportation options for all, regardless of race, income, national origin, age, location, physical ability, or any other factor.	**Consistent**. The project will provide a fuel station in a rural area of Madera County along Avenue 12 that will better connect the transportation system by providing a reliable fuel source for travelers and residents.
Develop a transportation network able to support the safe and efficient movement of people and goods and increase economic vitality.	**Not Applicable.** This goal is aimed at MCTC and the County, the project will not interfere with implementation of this goal.
Improve environmental conditions through integrated planning of transportation and land uses and achieve state and federal air quality improvement mandates.	**Not Applicable.** This goal is aimed at MCTC and the County, the project will not interfere with implementation of this goal.
Foster a secure, safe, and reliable transportation system.	**Consistent**. The project will provide a fuel station in a rural area of Madera along Avenue 12 that will provide a reliable fuel source that would enhance efficiency of the transportation system.
Support the development and implementation of innovative and emerging transportation technologies.	**Consistent**. The project will provide 7 EV parking stations that will increase EV charging capacity in the area.
Improve mobility for all travelers through a variety of accessible modal options.	**Consistent**. The project will provide a fuel station in a rural area of Madera along Avenue 12 that will better enhance the transportation system by providing a reliable fuel source. The project will also provide 7 EV parking stations that will increase EV charging capacity in the area.
Foster growth with a mix of land use types able to facilitate mixed uses, infill and compact development and preserve agricultural land and natural resources.	**Consistent.** The project is an infill development as it will place a new medical building, quick service restaurant, and gasoline service station on an empty plot of land adjacent to existing residences and commercial space. The existing site is empty and construction of the project would not interfere with any agricultural land or natural resources.
Develop funding and financing strategies to implement the project and strategies in the RTP/SCS.	**Not Applicable.** This goal is aimed at MCTC and the County, the project will not interfere with implementation of this goal.

Source of Measures: MCTC 2022.

Based on this evaluation, this analysis finds the project would be consistent with all feasible and applicable strategies recommended by the MCTC.

Conclusion

The Proposed Project would not conflict with the goals and objectives of the SJVAPCD's CCAP, CARB's Scoping Plans, or any other State or regional plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions. As such, the proposed project would not conflict with an applicable plan; therefore, impacts would be considered less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

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APPENDIX A

CRITERIA AIR POLLUTANT AND GHG EMISSIONS RESULTS

Madera Ranchos - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Madera Ranchos

Madera County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	16.15	1000sqft	0.37	16,146.00	0
Parking Lot	166.00	Space	1.49	66,400.00	0
Fast Food Restaurant with Drive Thru	2.21	1000sqft	0.05	2,215.00	0
Convenience Market (24 hour)	4.10	1000sqft	0.09	4,100.00	0
Gasoline/Service Station	6.00	Pump	0.02	847.05	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.9	**Precipitation Freq (Days)**	51
Climate Zone	3			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Square footage updated to match project description

Construction Phase - Construction schedule provided

Trips and VMT -

Grading -

Vehicle Trips - Convenience store trips accounted for in gasoline/service station land use. Trip rates adjusted to account for internal capture.

Area Coating -

Fleet Mix -

Madera Ranchos - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	PhaseName	Architectural Coating - Medical Office	Architectural Coating - Medical Office/Market/FuelStation
tblConstructionPhase	NumDays	10.00	25.00
tblConstructionPhase	NumDays	10.00	86.00
tblConstructionPhase	NumDays	220.00	269.00
tblConstructionPhase	NumDays	6.00	10.00
tblConstructionPhase	NumDays	3.00	5.00
tblGrading	MaterialExported	0.00	8,723.00
tblLandUse	LandUseSquareFeet	16,150.00	16,146.00
tblLandUse	LandUseSquareFeet	2,210.00	2,215.00
tblOffRoadEquipment	PhaseName	Architectural Coating - Medical Office	Architectural Coating - Medical Office/Market/FuelStation
tblOffRoadEquipment	PhaseName	Building Construction - Coffee Shop	Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice
tblOffRoadEquipment	PhaseName	Building Construction - Coffee Shop	Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice
tblOffRoadEquipment	PhaseName	Building Construction - Coffee Shop	Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice
tblOffRoadEquipment	PhaseName	Building Construction - Coffee Shop	Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice
tblOffRoadEquipment	PhaseName	Building Construction - Coffee Shop	Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice
tblOnRoadDust	PhaseName	Building Construction - Coffee Shop	Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice
tblOnRoadDust	PhaseName	Architectural Coating - Medical Office	Architectural Coating - Medical Office/Market/FuelStation
tblTripsAndVMT	PhaseName	Building Construction - Coffee Shop	Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice
tblTripsAndVMT	PhaseName	Architectural Coating - Medical Office	Architectural Coating - Medical Office/Market/FuelStation
tblVehicleTrips	DV_TP	21.00	0.00
tblVehicleTrips	DV_TP	27.00	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	DV_TP	30.00	0.00
tblVehicleTrips	PB_TP	50.00	45.10
tblVehicleTrips	PB_TP	59.00	45.10
tblVehicleTrips	PB_TP	10.00	45.10
tblVehicleTrips	PR_TP	29.00	54.90
tblVehicleTrips	PR_TP	14.00	54.90
tblVehicleTrips	PR_TP	60.00	54.90
tblVehicleTrips	ST_TR	1,084.17	0.00
tblVehicleTrips	ST_TR	616.12	619.27
tblVehicleTrips	ST_TR	182.17	574.35
tblVehicleTrips	ST_TR	8.57	10.49
tblVehicleTrips	SU_TR	901.17	0.00
tblVehicleTrips	SU_TR	472.58	471.91
tblVehicleTrips	SU_TR	166.88	230.56
tblVehicleTrips	SU_TR	1.42	0.85
tblVehicleTrips	WD_TR	762.28	0.00
tblVehicleTrips	WD_TR	470.95	499.19
tblVehicleTrips	WD_TR	172.01	505.72
tblVehicleTrips	WD_TR	34.80	27.41

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.5040	1.4953	1.5449	3.3400e-003	0.0858	0.0630	0.1488	0.0301	0.0602	0.0903	0.0000	288.3564	288.3564	0.0420	9.1000e-003	292.1183
2024	0.1208	0.6877	0.7785	1.5600e-003	0.0197	0.0277	0.0474	5.3600e-003	0.0265	0.0319	0.0000	132.3309	132.3309	0.0199	2.4500e-003	133.5574
Maximum	**0.5040**	**1.4953**	**1.5449**	**3.3400e-003**	**0.0858**	**0.0630**	**0.1488**	**0.0301**	**0.0602**	**0.0903**	**0.0000**	**288.3564**	**288.3564**	**0.0420**	**9.1000e-003**	**292.1183**

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					
2023	0.5040	1.4953	1.5449	3.3400e-003	0.0858	0.0630	0.1488	0.0301	0.0602	0.0903	0.0000	288.3562	288.3562	0.0420	9.1000e-003	292.1181
2024	0.1208	0.6877	0.7785	1.5600e-003	0.0197	0.0277	0.0474	5.3600e-003	0.0265	0.0319	0.0000	132.3307	132.3307	0.0199	2.4500e-003	133.5573
Maximum	**0.5040**	**1.4953**	**1.5449**	**3.3400e-003**	**0.0858**	**0.0630**	**0.1488**	**0.0301**	**0.0602**	**0.0903**	**0.0000**	**288.3562**	**288.3562**	**0.0420**	**9.1000e-003**	**292.1181**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**4-17-2023**	**7-16-2023**	0.5514	0.5514
2	**7-17-2023**	**10-16-2023**	0.8037	0.8037
3	**10-17-2023**	**1-16-2024**	0.7129	0.7129
4	**1-17-2024**	**4-16-2024**	0.5093	0.5093
5	**4-17-2024**	**7-16-2024**	0.1691	0.1691
		Highest	0.8037	0.8037

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	0.1131	2.0000e-005	1.7800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4700e-003	3.4700e-003	1.0000e-005	0.0000	3.7000e-003
Energy	3.9600e-003	0.0360	0.0303	2.2000e-004		2.7400e-003	2.7400e-003		2.7400e-003	2.7400e-003	0.0000	64.0475	64.0475	4.7700e-003	1.2100e-003	64.5260
Mobile	1.9494	2.7078	14.1996	0.0273	2.4237	0.0284	2.4522	0.6494	0.0267	0.6761	0.0000	2,528.2626	2,528.2626	0.1869	0.1656	2,582.2869
Waste						0.0000	0.0000		0.0000	0.0000	43.7303	0.0000	43.7303	2.5844	0.0000	108.3401
Water						0.0000	0.0000		0.0000	0.0000	0.9774	1.7573	2.7347	0.1007	2.4000e-003	5.9680
Total	**2.0664**	**2.7438**	**14.2316**	**0.0276**	**2.4237**	**0.0312**	**2.4549**	**0.6494**	**0.0295**	**0.6789**	**44.7077**	**2,594.0708**	**2,638.7785**	**2.8767**	**0.1692**	**2,761.1247**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1131	2.0000e-005	1.7800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4700e-003	3.4700e-003	1.0000e-005	0.0000	3.7000e-003
Energy	3.9600e-003	0.0360	0.0303	2.2000e-004		2.7400e-003	2.7400e-003		2.7400e-003	2.7400e-003	0.0000	64.0475	64.0475	4.7700e-003	1.2100e-003	64.5260
Mobile	1.9494	2.7078	14.1996	0.0273	2.4237	0.0284	2.4522	0.6494	0.0267	0.6761	0.0000	2,528.2626	2,528.2626	0.1869	0.1656	2,582.2869
Waste						0.0000	0.0000		0.0000	0.0000	43.7303	0.0000	43.7303	2.5844	0.0000	108.3401
Water						0.0000	0.0000		0.0000	0.0000	0.9774	1.7573	2.7347	0.1007	2.4000e-003	5.9680
Total	**2.0664**	**2.7438**	**14.2316**	**0.0276**	**2.4237**	**0.0312**	**2.4549**	**0.6494**	**0.0295**	**0.6789**	**44.7077**	**2,594.0708**	**2,638.7785**	**2.8767**	**0.1692**	**2,761.1247**

	ROG	NOx	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	4/17/2023	4/21/2023	5	5	
2	Grading	Grading	4/24/2023	5/5/2023	5	10	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3	Building Construction - Coffee Shop/Market/FuelStation/Medical Office	Building Construction	5/9/2023	5/17/2024	5	269	
4	Architectural Coating - Coffee Shop	Architectural Coating	7/31/2023	9/1/2023	5	25	
5	Paving	Paving	8/21/2023	9/1/2023	5	10	
6	Architectural Coating - Medical Office/Market/FuelStation	Architectural Coating	9/25/2023	1/22/2024	5	86	

Acres of Grading (Site Preparation Phase): 7.5

Acres of Grading (Grading Phase): 10

Acres of Paving: 1.49

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 34,962; Non-Residential Outdoor: 11,654; Striped Parking Area: 3,984 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice	Cranes	1	8.00	231	0.29
Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice	Forklifts	2	7.00	89	0.20
Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice	Generator Sets	1	8.00	84	0.74
Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice	Welders	3	8.00	46	0.45
Architectural Coating - Coffee Shop	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating - Medical Office/Market/FuelStation	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	1,090.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction - Coffee Shop/Market/F	8	36.00	15.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - Coffee Shop	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - Medical Office/Market/	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.9800e-003	0.0000	3.9800e-003	4.3000e-004	0.0000	4.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2600e-003	0.0357	0.0245	6.0000e-005		1.3500e-003	1.3500e-003		1.2500e-003	1.2500e-003	0.0000	5.3861	5.3861	1.7400e-003	0.0000	5.4297
Total	**3.2600e-003**	**0.0357**	**0.0245**	**6.0000e-005**	**3.9800e-003**	**1.3500e-003**	**5.3300e-003**	**4.3000e-004**	**1.2500e-003**	**1.6800e-003**	**0.0000**	**5.3861**	**5.3861**	**1.7400e-003**	**0.0000**	**5.4297**

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	7.0000e-005	4.0000e-005	5.6000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1324	0.1324	0.0000	0.0000	0.1337
Total	**7.0000e-005**	**4.0000e-005**	**5.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1324**	**0.1324**	**0.0000**	**0.0000**	**0.1337**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.9800e-003	0.0000	3.9800e-003	4.3000e-004	0.0000	4.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2600e-003	0.0357	0.0245	6.0000e-005		1.3500e-003	1.3500e-003		1.2500e-003	1.2500e-003	0.0000	5.3861	5.3861	1.7400e-003	0.0000	5.4296
Total	**3.2600e-003**	**0.0357**	**0.0245**	**6.0000e-005**	**3.9800e-003**	**1.3500e-003**	**5.3300e-003**	**4.3000e-004**	**1.2500e-003**	**1.6800e-003**	**0.0000**	**5.3861**	**5.3861**	**1.7400e-003**	**0.0000**	**5.4296**

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	7.0000e-005	4.0000e-005	5.6000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1324	0.1324	0.0000	0.0000	0.1337
Total	**7.0000e-005**	**4.0000e-005**	**5.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1324**	**0.1324**	**0.0000**	**0.0000**	**0.1337**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0361	0.0000	0.0361	0.0172	0.0000	0.0172	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6700e-003	0.0723	0.0435	1.0000e-004		3.0200e-003	3.0200e-003		2.7800e-003	2.7800e-003	0.0000	9.0520	9.0520	2.9300e-003	0.0000	9.1252
Total	**6.6700e-003**	**0.0723**	**0.0435**	**1.0000e-004**	**0.0361**	**3.0200e-003**	**0.0391**	**0.0172**	**2.7800e-003**	**0.0200**	**0.0000**	**9.0520**	**9.0520**	**2.9300e-003**	**0.0000**	**9.1252**

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	1.1600e-003	0.0672	0.0145	3.2000e-004	9.3100e-003	6.5000e-004	9.9600e-003	2.5600e-003	6.2000e-004	3.1900e-003	0.0000	30.4353	30.4353	6.0000e-005	4.7800e-003	31.8626
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.1000e-004	1.3900e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3310	0.3310	1.0000e-005	1.0000e-005	0.3342
Total	**1.3300e-003**	**0.0673**	**0.0159**	**3.2000e-004**	**9.7100e-003**	**6.5000e-004**	**0.0104**	**2.6700e-003**	**6.2000e-004**	**3.3000e-003**	**0.0000**	**30.7662**	**30.7662**	**7.0000e-005**	**4.7900e-003**	**32.1967**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0361	0.0000	0.0361	0.0172	0.0000	0.0172	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6700e-003	0.0723	0.0435	1.0000e-004		3.0200e-003	3.0200e-003		2.7800e-003	2.7800e-003	0.0000	9.0520	9.0520	2.9300e-003	0.0000	9.1251
Total	**6.6700e-003**	**0.0723**	**0.0435**	**1.0000e-004**	**0.0361**	**3.0200e-003**	**0.0391**	**0.0172**	**2.7800e-003**	**0.0200**	**0.0000**	**9.0520**	**9.0520**	**2.9300e-003**	**0.0000**	**9.1251**

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	1.1600e-003	0.0672	0.0145	3.2000e-004	9.3100e-003	6.5000e-004	9.9600e-003	2.5600e-003	6.2000e-004	3.1900e-003	0.0000	30.4353	30.4353	6.0000e-005	4.7800e-003	31.8626
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.1000e-004	1.3900e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3310	0.3310	1.0000e-005	1.0000e-005	0.3342
Total	**1.3300e-003**	**0.0673**	**0.0159**	**3.2000e-004**	**9.7100e-003**	**6.5000e-004**	**0.0104**	**2.6700e-003**	**6.2000e-004**	**3.3000e-003**	**0.0000**	**30.7662**	**30.7662**	**7.0000e-005**	**4.7900e-003**	**32.1967**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice - 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	0.1448	1.1512	1.2011	2.1100e-003		0.0519	0.0519		0.0497	0.0497	0.0000	175.5082	175.5082	0.0332	0.0000	176.3380
Total	**0.1448**	**1.1512**	**1.2011**	**2.1100e-003**		**0.0519**	**0.0519**		**0.0497**	**0.0497**	**0.0000**	**175.5082**	**175.5082**	**0.0332**	**0.0000**	**176.3380**

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	1.5200e-003	0.0560	0.0189	2.6000e-004	8.3800e-003	3.7000e-004	8.7500e-003	2.4200e-003	3.5000e-004	2.7700e-003	0.0000	24.7951	24.7951	9.0000e-005	3.6200e-003	25.8774
Worker	0.0104	6.8400e-003	0.0847	2.2000e-004	0.0242	1.5000e-004	0.0244	6.4400e-003	1.3000e-004	6.5800e-003	0.0000	20.1348	20.1348	6.7000e-004	6.0000e-004	20.3303
Total	**0.0119**	**0.0628**	**0.1036**	**4.8000e-004**	**0.0326**	**5.2000e-004**	**0.0331**	**8.8600e-003**	**4.8000e-004**	**9.3500e-003**	**0.0000**	**44.9300**	**44.9300**	**7.6000e-004**	**4.2200e-003**	**46.2077**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1448	1.1512	1.2011	2.1100e-003		0.0519	0.0519		0.0497	0.0497	0.0000	175.5080	175.5080	0.0332	0.0000	176.3378
Total	**0.1448**	**1.1512**	**1.2011**	**2.1100e-003**		**0.0519**	**0.0519**		**0.0497**	**0.0497**	**0.0000**	**175.5080**	**175.5080**	**0.0332**	**0.0000**	**176.3378**

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	1.5200e-003	0.0560	0.0189	2.6000e-004	8.3800e-003	3.7000e-004	8.7500e-003	2.4200e-003	3.5000e-004	2.7700e-003	0.0000	24.7951	24.7951	9.0000e-005	3.6200e-003	25.8774
Worker	0.0104	6.8400e-003	0.0847	2.2000e-004	0.0242	1.5000e-004	0.0244	6.4400e-003	1.3000e-004	6.5800e-003	0.0000	20.1348	20.1348	6.7000e-004	6.0000e-004	20.3303
Total	**0.0119**	**0.0628**	**0.1036**	**4.8000e-004**	**0.0326**	**5.2000e-004**	**0.0331**	**8.8600e-003**	**4.8000e-004**	**9.3500e-003**	**0.0000**	**44.9300**	**44.9300**	**7.6000e-004**	**4.2200e-003**	**46.2077**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0799	0.6412	0.7050	1.2500e-003		0.0269	0.0269		0.0258	0.0258	0.0000	103.8570	103.8570	0.0193	0.0000	104.3406
Total	**0.0799**	**0.6412**	**0.7050**	**1.2500e-003**		**0.0269**	**0.0269**		**0.0258**	**0.0258**	**0.0000**	**103.8570**	**103.8570**	**0.0193**	**0.0000**	**104.3406**

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	8.6000e-004	0.0331	0.0107	1.5000e-004	4.9600e-003	2.2000e-004	5.1800e-003	1.4300e-003	2.1000e-004	1.6400e-003	0.0000	14.4472	14.4472	5.0000e-005	2.1100e-003	15.0769
Worker	5.6900e-003	3.5800e-003	0.0469	1.3000e-004	0.0143	8.0000e-005	0.0144	3.8100e-003	8.0000e-005	3.8900e-003	0.0000	11.6225	11.6225	3.6000e-004	3.3000e-004	11.7296
Total	**6.5500e-003**	**0.0367**	**0.0576**	**2.8000e-004**	**0.0193**	**3.0000e-004**	**0.0196**	**5.2400e-003**	**2.9000e-004**	**5.5300e-003**	**0.0000**	**26.0697**	**26.0697**	**4.1000e-004**	**2.4400e-003**	**26.8065**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0799	0.6412	0.7050	1.2500e-003		0.0269	0.0269		0.0258	0.0258	0.0000	103.8568	103.8568	0.0193	0.0000	104.3404
Total	**0.0799**	**0.6412**	**0.7050**	**1.2500e-003**		**0.0269**	**0.0269**		**0.0258**	**0.0258**	**0.0000**	**103.8568**	**103.8568**	**0.0193**	**0.0000**	**104.3404**

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	8.6000e-004	0.0331	0.0107	1.5000e-004	4.9600e-003	2.2000e-004	5.1800e-003	1.4300e-003	2.1000e-004	1.6400e-003	0.0000	14.4472	14.4472	5.0000e-005	2.1100e-003	15.0769
Worker	5.6900e-003	3.5800e-003	0.0469	1.3000e-004	0.0143	8.0000e-005	0.0144	3.8100e-003	8.0000e-005	3.8900e-003	0.0000	11.6225	11.6225	3.6000e-004	3.3000e-004	11.7296
Total	**6.5500e-003**	**0.0367**	**0.0576**	**2.8000e-004**	**0.0193**	**3.0000e-004**	**0.0196**	**5.2400e-003**	**2.9000e-004**	**5.5300e-003**	**0.0000**	**26.0697**	**26.0697**	**4.1000e-004**	**2.4400e-003**	**26.8065**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Architectural Coating - Coffee Shop - 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	0.1759					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4000e-003	0.0163	0.0226	4.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	3.1916	3.1916	1.9000e-004	0.0000	3.1963
Total	**0.1783**	**0.0163**	**0.0226**	**4.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.9000e-004**	**8.9000e-004**	**0.0000**	**3.1916**	**3.1916**	**1.9000e-004**	**0.0000**	**3.1963**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.0000e-004	2.4400e-003	1.0000e-005	7.0000e-004	0.0000	7.0000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5792	0.5792	2.0000e-005	2.0000e-005	0.5848
Total	**3.0000e-004**	**2.0000e-004**	**2.4400e-003**	**1.0000e-005**	**7.0000e-004**	**0.0000**	**7.0000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5792**	**0.5792**	**2.0000e-005**	**2.0000e-005**	**0.5848**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Architectural Coating - Coffee Shop - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1759					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4000e-003	0.0163	0.0226	4.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	3.1916	3.1916	1.9000e-004	0.0000	3.1963
Total	**0.1783**	**0.0163**	**0.0226**	**4.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.9000e-004**	**8.9000e-004**	**0.0000**	**3.1916**	**3.1916**	**1.9000e-004**	**0.0000**	**3.1963**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.0000e-004	2.4400e-003	1.0000e-005	7.0000e-004	0.0000	7.0000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5792	0.5792	2.0000e-005	2.0000e-005	0.5848
Total	**3.0000e-004**	**2.0000e-004**	**2.4400e-003**	**1.0000e-005**	**7.0000e-004**	**0.0000**	**7.0000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5792**	**0.5792**	**2.0000e-005**	**2.0000e-005**	**0.5848**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 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	4.4000e-003	0.0431	0.0584	9.0000e-005		2.1700e-003	2.1700e-003		2.0000e-003	2.0000e-003	0.0000	7.7564	7.7564	2.4600e-003	0.0000	7.8179
Paving	1.9500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.3500e-003**	**0.0431**	**0.0584**	**9.0000e-005**		**2.1700e-003**	**2.1700e-003**		**2.0000e-003**	**2.0000e-003**	**0.0000**	**7.7564**	**7.7564**	**2.4600e-003**	**0.0000**	**7.8179**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	1.7000e-004	2.0900e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4964	0.4964	2.0000e-005	1.0000e-005	0.5012
Total	**2.6000e-004**	**1.7000e-004**	**2.0900e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4964**	**0.4964**	**2.0000e-005**	**1.0000e-005**	**0.5012**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.4000e-003	0.0431	0.0584	9.0000e-005		2.1700e-003	2.1700e-003		2.0000e-003	2.0000e-003	0.0000	7.7564	7.7564	2.4600e-003	0.0000	7.8178
Paving	1.9500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.3500e-003**	**0.0431**	**0.0584**	**9.0000e-005**		**2.1700e-003**	**2.1700e-003**		**2.0000e-003**	**2.0000e-003**	**0.0000**	**7.7564**	**7.7564**	**2.4600e-003**	**0.0000**	**7.8178**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	1.7000e-004	2.0900e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4964	0.4964	2.0000e-005	1.0000e-005	0.5012
Total	**2.6000e-004**	**1.7000e-004**	**2.0900e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4964**	**0.4964**	**2.0000e-005**	**1.0000e-005**	**0.5012**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - Medical Office/Market/FuelStation - 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	0.1432					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7100e-003	0.0456	0.0634	1.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003	0.0000	8.9364	8.9364	5.3000e-004	0.0000	8.9498
Total	**0.1499**	**0.0456**	**0.0634**	**1.0000e-004**		**2.4800e-003**	**2.4800e-003**		**2.4800e-003**	**2.4800e-003**	**0.0000**	**8.9364**	**8.9364**	**5.3000e-004**	**0.0000**	**8.9498**

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	8.4000e-004	5.5000e-004	6.8200e-003	2.0000e-005	1.9500e-003	1.0000e-005	1.9600e-003	5.2000e-004	1.0000e-005	5.3000e-004	0.0000	1.6216	1.6216	5.0000e-005	5.0000e-005	1.6374
Total	**8.4000e-004**	**5.5000e-004**	**6.8200e-003**	**2.0000e-005**	**1.9500e-003**	**1.0000e-005**	**1.9600e-003**	**5.2000e-004**	**1.0000e-005**	**5.3000e-004**	**0.0000**	**1.6216**	**1.6216**	**5.0000e-005**	**5.0000e-005**	**1.6374**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - Medical Office/Market/FuelStation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1432					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7100e-003	0.0456	0.0634	1.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003	0.0000	8.9364	8.9364	5.3000e-004	0.0000	8.9497
Total	**0.1499**	**0.0456**	**0.0634**	**1.0000e-004**		**2.4800e-003**	**2.4800e-003**		**2.4800e-003**	**2.4800e-003**	**0.0000**	**8.9364**	**8.9364**	**5.3000e-004**	**0.0000**	**8.9497**

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	8.4000e-004	5.5000e-004	6.8200e-003	2.0000e-005	1.9500e-003	1.0000e-005	1.9600e-003	5.2000e-004	1.0000e-005	5.3000e-004	0.0000	1.6216	1.6216	5.0000e-005	5.0000e-005	1.6374
Total	**8.4000e-004**	**5.5000e-004**	**6.8200e-003**	**2.0000e-005**	**1.9500e-003**	**1.0000e-005**	**1.9600e-003**	**5.2000e-004**	**1.0000e-005**	**5.3000e-004**	**0.0000**	**1.6216**	**1.6216**	**5.0000e-005**	**5.0000e-005**	**1.6374**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - Medical Office/Market/FuelStation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0327					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4500e-003	9.7500e-003	0.0145	2.0000e-005		4.9000e-004	4.9000e-004		4.9000e-004	4.9000e-004	0.0000	2.0426	2.0426	1.2000e-004	0.0000	2.0455
Total	**0.0342**	**9.7500e-003**	**0.0145**	**2.0000e-005**		**4.9000e-004**	**4.9000e-004**		**4.9000e-004**	**4.9000e-004**	**0.0000**	**2.0426**	**2.0426**	**1.2000e-004**	**0.0000**	**2.0455**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.1000e-004	1.4600e-003	0.0000	4.5000e-004	0.0000	4.5000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3616	0.3616	1.0000e-005	1.0000e-005	0.3649
Total	**1.8000e-004**	**1.1000e-004**	**1.4600e-003**	**0.0000**	**4.5000e-004**	**0.0000**	**4.5000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3616**	**0.3616**	**1.0000e-005**	**1.0000e-005**	**0.3649**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - Medical Office/Market/FuelStation - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0327					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4500e-003	9.7500e-003	0.0145	2.0000e-005		4.9000e-004	4.9000e-004		4.9000e-004	4.9000e-004	0.0000	2.0426	2.0426	1.2000e-004	0.0000	2.0455
Total	**0.0342**	**9.7500e-003**	**0.0145**	**2.0000e-005**		**4.9000e-004**	**4.9000e-004**		**4.9000e-004**	**4.9000e-004**	**0.0000**	**2.0426**	**2.0426**	**1.2000e-004**	**0.0000**	**2.0455**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.1000e-004	1.4600e-003	0.0000	4.5000e-004	0.0000	4.5000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3616	0.3616	1.0000e-005	1.0000e-005	0.3649
Total	**1.8000e-004**	**1.1000e-004**	**1.4600e-003**	**0.0000**	**4.5000e-004**	**0.0000**	**4.5000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3616**	**0.3616**	**1.0000e-005**	**1.0000e-005**	**0.3649**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.9494	2.7078	14.1996	0.0273	2.4237	0.0284	2.4522	0.6494	0.0267	0.6761	0.0000	2,528.2626	2,528.2626	0.1869	0.1656	2,582.2869
Unmitigated	1.9494	2.7078	14.1996	0.0273	2.4237	0.0284	2.4522	0.6494	0.0267	0.6761	0.0000	2,528.2626	2,528.2626	0.1869	0.1656	2,582.2869

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market (24 hour)	0.00	0.00	0.00		
Fast Food Restaurant with Drive Thru	1,103.21	1,368.59	1042.92	1,681,652	1,681,652
Gasoline/Service Station	3,034.32	3,446.10	1383.36	4,240,259	4,240,259
Medical Office Building	442.67	169.41	13.73	549,604	549,604
Parking Lot	0.00	0.00	0.00		
Total	4,580.20	4,984.10	2,440.01	6,471,514	6,471,514

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
Convenience Market (24 hour)	9.50	7.30	7.30	0.90	80.10	19.00	24	15	61
Fast Food Restaurant with Drive	9.50	7.30	7.30	2.20	78.80	19.00	54.9	0	45.1

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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
Gasoline/Service Station	9.50	7.30	7.30	2.00	79.00	19.00	54.9	0	45.1
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	54.9	0	45.1
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market (24 hour)	0.500104	0.052860	0.172660	0.158983	0.033384	0.008488	0.010945	0.028437	0.000810	0.000210	0.026444	0.001975	0.004700
Fast Food Restaurant with Drive Thru	0.500104	0.052860	0.172660	0.158983	0.033384	0.008488	0.010945	0.028437	0.000810	0.000210	0.026444	0.001975	0.004700
Gasoline/Service Station	0.500104	0.052860	0.172660	0.158983	0.033384	0.008488	0.010945	0.028437	0.000810	0.000210	0.026444	0.001975	0.004700
Medical Office Building	0.500104	0.052860	0.172660	0.158983	0.033384	0.008488	0.010945	0.028437	0.000810	0.000210	0.026444	0.001975	0.004700
Parking Lot	0.500104	0.052860	0.172660	0.158983	0.033384	0.008488	0.010945	0.028437	0.000810	0.000210	0.026444	0.001975	0.004700

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Madera Ranchos - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	24.8291	24.8291	4.0200e-003	4.9000e-004	25.0746
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	24.8291	24.8291	4.0200e-003	4.9000e-004	25.0746
NaturalGas Mitigated	3.9600e-003	0.0360	0.0303	2.2000e-004		2.7400e-003	2.7400e-003		2.7400e-003	2.7400e-003	0.0000	39.2184	39.2184	7.5000e-004	7.2000e-004	39.4514
NaturalGas Unmitigated	3.9600e-003	0.0360	0.0303	2.2000e-004		2.7400e-003	2.7400e-003		2.7400e-003	2.7400e-003	0.0000	39.2184	39.2184	7.5000e-004	7.2000e-004	39.4514

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Convenience Market (24 hour)	43501	2.3000e-004	2.1300e-003	1.7900e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	2.3214	2.3214	4.0000e-005	4.0000e-005	2.3352
Fast Food Restaurant with Drive Thru	465283	2.5100e-003	0.0228	0.0192	1.4000e-004		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	24.8293	24.8293	4.8000e-004	4.6000e-004	24.9768
Gasoline/Service Station	17533.9	9.0000e-005	8.6000e-004	7.2000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9357	0.9357	2.0000e-005	2.0000e-005	0.9412
Medical Office Building	208606	1.1200e-003	0.0102	8.5900e-003	6.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	11.1320	11.1320	2.1000e-004	2.0000e-004	11.1982
Parking Lot	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
Total		**3.9500e-003**	**0.0360**	**0.0303**	**2.2000e-004**		**2.7400e-003**	**2.7400e-003**		**2.7400e-003**	**2.7400e-003**	**0.0000**	**39.2184**	**39.2184**	**7.5000e-004**	**7.2000e-004**	**39.4514**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Convenience Market (24 hour)	43501	2.3000e-004	2.1300e-003	1.7900e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	2.3214	2.3214	4.0000e-005	4.0000e-005	2.3352
Fast Food Restaurant with Drive Thru	465283	2.5100e-003	0.0228	0.0192	1.4000e-004		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	24.8293	24.8293	4.8000e-004	4.6000e-004	24.9768
Gasoline/Service Station	17533.9	9.0000e-005	8.6000e-004	7.2000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9357	0.9357	2.0000e-005	2.0000e-005	0.9412
Medical Office Building	208606	1.1200e-003	0.0102	8.5900e-003	6.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	11.1320	11.1320	2.1000e-004	2.0000e-004	11.1982
Parking Lot	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
Total		**3.9500e-003**	**0.0360**	**0.0303**	**2.2000e-004**		**2.7400e-003**	**2.7400e-003**		**2.7400e-003**	**2.7400e-003**	**0.0000**	**39.2184**	**39.2184**	**7.5000e-004**	**7.2000e-004**	**39.4514**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market (24 hour)	32472	3.0044	4.9000e-004	6.0000e-005	3.0341
Fast Food Restaurant with Drive Thru	62618.1	5.7937	9.4000e-004	1.1000e-004	5.8510
Gasoline/Service Station	7293.1	0.6748	1.1000e-004	1.0000e-005	0.6815
Medical Office Building	142731	13.2060	2.1400e-003	2.6000e-004	13.3366
Parking Lot	23240	2.1503	3.5000e-004	4.0000e-005	2.1715
Total		**24.8291**	**4.0300e-003**	**4.8000e-004**	**25.0746**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market (24 hour)	32472	3.0044	4.9000e-004	6.0000e-005	3.0341
Fast Food Restaurant with Drive Thru	62618.1	5.7937	9.4000e-004	1.1000e-004	5.8510
Gasoline/Service Station	7293.1	0.6748	1.1000e-004	1.0000e-005	0.6815
Medical Office Building	142731	13.2060	2.1400e-003	2.6000e-004	13.3366
Parking Lot	23240	2.1503	3.5000e-004	4.0000e-005	2.1715
Total		**24.8291**	**4.0300e-003**	**4.8000e-004**	**25.0746**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1131	2.0000e-005	1.7800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4700e-003	3.4700e-003	1.0000e-005	0.0000	3.7000e-003
Unmitigated	0.1131	2.0000e-005	1.7800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4700e-003	3.4700e-003	1.0000e-005	0.0000	3.7000e-003

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	0.0176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0953					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4700e-003	3.4700e-003	1.0000e-005	0.0000	3.7000e-003
Total	**0.1131**	**2.0000e-005**	**1.7800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.4700e-003**	**3.4700e-003**	**1.0000e-005**	**0.0000**	**3.7000e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0953					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4700e-003	3.4700e-003	1.0000e-005	0.0000	3.7000e-003
Total	**0.1131**	**2.0000e-005**	**1.7800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.4700e-003**	**3.4700e-003**	**1.0000e-005**	**0.0000**	**3.7000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.7347	0.1007	2.4000e-003	5.9680
Unmitigated	2.7347	0.1007	2.4000e-003	5.9680

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market (24 hour)	0.303697 / 0.186137	0.3087	9.9300e-003	2.4000e-004	0.6278
Fast Food Restaurant with Drive Thru	0.670809 / 0.0428176	0.5625	0.0219	5.2000e-004	1.2662
Gasoline/Service Station	0.0796913 / 0.0488431	0.0810	2.6100e-003	6.0000e-005	0.1647
Medical Office Building	2.02651 / 0.386002	1.7825	0.0662	1.5800e-003	3.9092
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.7347**	**0.1007**	**2.4000e-003**	**5.9680**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market (24 hour)	0.303697 / 0.186137	0.3087	9.9300e-003	2.4000e-004	0.6278
Fast Food Restaurant with Drive Thru	0.670809 / 0.0428176	0.5625	0.0219	5.2000e-004	1.2662
Gasoline/Service Station	0.0796913 / 0.0488431	0.0810	2.6100e-003	6.0000e-005	0.1647
Medical Office Building	2.02651 / 0.386002	1.7825	0.0662	1.5800e-003	3.9092
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.7347**	**0.1007**	**2.4000e-003**	**5.9680**

8.0 Waste Detail

8.1 Mitigation Measures Waste

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	43.7303	2.5844	0.0000	108.3401
Unmitigated	43.7303	2.5844	0.0000	108.3401

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Convenience Market (24 hour)	12.32	2.5009	0.1478	0.0000	6.1958
Fast Food Restaurant with Drive Thru	25.46	5.1682	0.3054	0.0000	12.8039
Gasoline/Service Station	3.23	0.6557	0.0388	0.0000	1.6244
Medical Office Building	174.42	35.4057	2.0924	0.0000	87.7161
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**43.7303**	**2.5844**	**0.0000**	**108.3401**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Convenience Market (24 hour)	12.32	2.5009	0.1478	0.0000	6.1958
Fast Food Restaurant with Drive Thru	25.46	5.1682	0.3054	0.0000	12.8039
Gasoline/Service Station	3.23	0.6557	0.0388	0.0000	1.6244
Medical Office Building	174.42	35.4057	2.0924	0.0000	87.7161
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**43.7303**	**2.5844**	**0.0000**	**108.3401**

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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Madera Ranchos - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Madera Ranchos

Madera County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	16.15	1000sqft	0.37	16,146.00	0
Parking Lot	166.00	Space	1.49	66,400.00	0
Fast Food Restaurant with Drive Thru	2.21	1000sqft	0.05	2,215.00	0
Convenience Market (24 hour)	4.10	1000sqft	0.09	4,100.00	0
Gasoline/Service Station	6.00	Pump	0.02	847.05	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.9	**Precipitation Freq (Days)**	51
Climate Zone	3			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Square footage updated to match project description

Construction Phase - Construction schedule provided

Trips and VMT -

Grading -

Vehicle Trips - Convenience store trips accounted for in gasoline/service station land use. Trip rates adjusted to account for internal capture.

Area Coating -

Fleet Mix -

Madera Ranchos - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	PhaseName	Architectural Coating - Medical Office	Architectural Coating - Medical Office/Market/FuelStation
tblConstructionPhase	NumDays	10.00	25.00
tblConstructionPhase	NumDays	10.00	86.00
tblConstructionPhase	NumDays	220.00	269.00
tblConstructionPhase	NumDays	6.00	10.00
tblConstructionPhase	NumDays	3.00	5.00
tblGrading	MaterialExported	0.00	8,723.00
tblLandUse	LandUseSquareFeet	16,150.00	16,146.00
tblLandUse	LandUseSquareFeet	2,210.00	2,215.00
tblOffRoadEquipment	PhaseName	Architectural Coating - Medical Office	Architectural Coating - Medical Office/Market/FuelStation
tblOffRoadEquipment	PhaseName	Building Construction - Coffee Shop	Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice
tblOffRoadEquipment	PhaseName	Building Construction - Coffee Shop	Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice
tblOffRoadEquipment	PhaseName	Building Construction - Coffee Shop	Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice
tblOffRoadEquipment	PhaseName	Building Construction - Coffee Shop	Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice
tblOffRoadEquipment	PhaseName	Building Construction - Coffee Shop	Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice
tblOnRoadDust	PhaseName	Building Construction - Coffee Shop	Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice
tblOnRoadDust	PhaseName	Architectural Coating - Medical Office	Architectural Coating - Medical Office/Market/FuelStation
tblTripsAndVMT	PhaseName	Building Construction - Coffee Shop	Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice
tblTripsAndVMT	PhaseName	Architectural Coating - Medical Office	Architectural Coating - Medical Office/Market/FuelStation
tblVehicleTrips	DV_TP	21.00	0.00
tblVehicleTrips	DV_TP	27.00	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	DV_TP	30.00	0.00
tblVehicleTrips	PB_TP	50.00	45.10
tblVehicleTrips	PB_TP	59.00	45.10
tblVehicleTrips	PB_TP	10.00	45.10
tblVehicleTrips	PR_TP	29.00	54.90
tblVehicleTrips	PR_TP	14.00	54.90
tblVehicleTrips	PR_TP	60.00	54.90
tblVehicleTrips	ST_TR	1,084.17	0.00
tblVehicleTrips	ST_TR	616.12	619.27
tblVehicleTrips	ST_TR	182.17	574.35
tblVehicleTrips	ST_TR	8.57	10.49
tblVehicleTrips	SU_TR	901.17	0.00
tblVehicleTrips	SU_TR	472.58	471.91
tblVehicleTrips	SU_TR	166.88	230.56
tblVehicleTrips	SU_TR	1.42	0.85
tblVehicleTrips	WD_TR	762.28	0.00
tblVehicleTrips	WD_TR	470.95	499.19
tblVehicleTrips	WD_TR	172.01	505.72
tblVehicleTrips	WD_TR	34.80	27.41

2.0 Emissions Summary

Madera Ranchos - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	17.4960	27.3466	29.7934	0.0847	9.2175	1.1254	9.9529	3.9923	1.0658	4.6737	0.0000	8,780.7060	8,780.7060	1.0066	1.0562	9,111.9999
2024	6.0434	14.7560	17.4115	0.0343	0.4550	0.6053	1.0603	0.1230	0.5822	0.7052	0.0000	3,221.1270	3,221.1270	0.4526	0.0547	3,248.7285
Maximum	**17.4960**	**27.3466**	**29.7934**	**0.0847**	**9.2175**	**1.1254**	**9.9529**	**3.9923**	**1.0658**	**4.6737**	**0.0000**	**8,780.7060**	**8,780.7060**	**1.0066**	**1.0562**	**9,111.9999**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	17.4960	27.3466	29.7934	0.0847	9.2175	1.1254	9.9529	3.9923	1.0658	4.6737	0.0000	8,780.7060	8,780.7060	1.0066	1.0562	9,111.9999
2024	6.0434	14.7560	17.4115	0.0343	0.4550	0.6053	1.0603	0.1230	0.5822	0.7052	0.0000	3,221.1270	3,221.1270	0.4526	0.0547	3,248.7285
Maximum	**17.4960**	**27.3466**	**29.7934**	**0.0847**	**9.2175**	**1.1254**	**9.9529**	**3.9923**	**1.0658**	**4.6737**	**0.0000**	**8,780.7060**	**8,780.7060**	**1.0066**	**1.0562**	**9,111.9999**

Madera Ranchos - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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

Madera Ranchos - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.6205	1.8000e-004	0.0198	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0426	0.0426	1.1000e-004		0.0453
Energy	0.0217	0.1974	0.1658	1.1800e-003		0.0150	0.0150		0.0150	0.0150		236.8813	236.8813	4.5400e-003	4.3400e-003	238.2889
Mobile	16.1565	17.0169	98.2717	0.1928	16.6665	0.1898	16.8563	4.4546	0.1782	4.6328		19,655.3215	19,655.3215	1.2747	1.1817	20,039.3405
Total	**16.7988**	**17.2145**	**98.4573**	**0.1940**	**16.6665**	**0.2049**	**16.8714**	**4.4546**	**0.1933**	**4.6478**		**19,892.2453**	**19,892.2453**	**1.2793**	**1.1861**	**20,277.6748**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.6205	1.8000e-004	0.0198	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0426	0.0426	1.1000e-004		0.0453
Energy	0.0217	0.1974	0.1658	1.1800e-003		0.0150	0.0150		0.0150	0.0150		236.8813	236.8813	4.5400e-003	4.3400e-003	238.2889
Mobile	16.1565	17.0169	98.2717	0.1928	16.6665	0.1898	16.8563	4.4546	0.1782	4.6328		19,655.3215	19,655.3215	1.2747	1.1817	20,039.3405
Total	**16.7988**	**17.2145**	**98.4573**	**0.1940**	**16.6665**	**0.2049**	**16.8714**	**4.4546**	**0.1933**	**4.6478**		**19,892.2453**	**19,892.2453**	**1.2793**	**1.1861**	**20,277.6748**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/17/2023	4/21/2023	5	5	
2	Grading	Grading	4/24/2023	5/5/2023	5	10	
3	Building Construction - Coffee Shop/Market/FuelStation/Medical Office	Building Construction	5/9/2023	5/17/2024	5	269	
4	Architectural Coating - Coffee Shop	Architectural Coating	7/31/2023	9/1/2023	5	25	
5	Paving	Paving	8/21/2023	9/1/2023	5	10	
6	Architectural Coating - Medical Office/Market/FuelStation	Architectural Coating	9/25/2023	1/22/2024	5	86	

Acres of Grading (Site Preparation Phase): 7.5

Acres of Grading (Grading Phase): 10

Acres of Paving: 1.49

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 34,962; Non-Residential Outdoor: 11,654; Striped Parking Area: 3,984 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice	Cranes	1	8.00	231	0.29
Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice	Forklifts	2	7.00	89	0.20
Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice	Generator Sets	1	8.00	84	0.74
Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice	Welders	3	8.00	46	0.45
Architectural Coating - Coffee Shop	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating - Medical Office/Market/FuelStation	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	1,090.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction - Coffee Shop/Market/F	8	36.00	15.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - Coffee Shop	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - Medical Office/Market/	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.3027	14.2802	9.7820	0.0245		0.5419	0.5419		0.4985	0.4985		2,374.8634	2,374.8634	0.7681		2,394.0654
Total	**1.3027**	**14.2802**	**9.7820**	**0.0245**	**1.5908**	**0.5419**	**2.1326**	**0.1718**	**0.4985**	**0.6703**		**2,374.8634**	**2,374.8634**	**0.7681**		**2,394.0654**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0317	0.0166	0.2571	6.3000e-004	0.0657	3.8000e-004	0.0661	0.0174	3.5000e-004	0.0178		63.2897	63.2897	1.8800e-003	1.6500e-003	63.8291
Total	**0.0317**	**0.0166**	**0.2571**	**6.3000e-004**	**0.0657**	**3.8000e-004**	**0.0661**	**0.0174**	**3.5000e-004**	**0.0178**		**63.2897**	**63.2897**	**1.8800e-003**	**1.6500e-003**	**63.8291**

Madera Ranchos - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.3027	14.2802	9.7820	0.0245		0.5419	0.5419		0.4985	0.4985	0.0000	2,374.8634	2,374.8634	0.7681		2,394.0654
Total	**1.3027**	**14.2802**	**9.7820**	**0.0245**	**1.5908**	**0.5419**	**2.1326**	**0.1718**	**0.4985**	**0.6703**	**0.0000**	**2,374.8634**	**2,374.8634**	**0.7681**		**2,394.0654**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0317	0.0166	0.2571	6.3000e-004	0.0657	3.8000e-004	0.0661	0.0174	3.5000e-004	0.0178		63.2897	63.2897	1.8800e-003	1.6500e-003	63.8291
Total	**0.0317**	**0.0166**	**0.2571**	**6.3000e-004**	**0.0657**	**3.8000e-004**	**0.0661**	**0.0174**	**3.5000e-004**	**0.0178**		**63.2897**	**63.2897**	**1.8800e-003**	**1.6500e-003**	**63.8291**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.2239	0.0000	7.2239	3.4461	0.0000	3.4461			0.0000			0.0000
Off-Road	1.3330	14.4676	8.7038	0.0206		0.6044	0.6044		0.5560	0.5560		1,995.6147	1,995.6147	0.6454		2,011.7503
Total	**1.3330**	**14.4676**	**8.7038**	**0.0206**	**7.2239**	**0.6044**	**7.8282**	**3.4461**	**0.5560**	**4.0021**		**1,995.6147**	**1,995.6147**	**0.6454**		**2,011.7503**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2389	12.8581	2.8786	0.0633	1.9115	0.1306	2.0420	0.5244	0.1249	0.6493		6,705.9792	6,705.9792	0.0143	1.0541	7,020.4632
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0396	0.0208	0.3213	7.8000e-004	0.0822	4.8000e-004	0.0826	0.0218	4.4000e-004	0.0222		79.1121	79.1121	2.3500e-003	2.0700e-003	79.7864
Total	**0.2785**	**12.8789**	**3.1999**	**0.0641**	**1.9936**	**0.1311**	**2.1247**	**0.5462**	**0.1254**	**0.6715**		**6,785.0913**	**6,785.0913**	**0.0166**	**1.0562**	**7,100.2496**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.2239	0.0000	7.2239	3.4461	0.0000	3.4461			0.0000			0.0000
Off-Road	1.3330	14.4676	8.7038	0.0206		0.6044	0.6044		0.5560	0.5560	0.0000	1,995.6147	1,995.6147	0.6454		2,011.7503
Total	**1.3330**	**14.4676**	**8.7038**	**0.0206**	**7.2239**	**0.6044**	**7.8282**	**3.4461**	**0.5560**	**4.0021**	**0.0000**	**1,995.6147**	**1,995.6147**	**0.6454**		**2,011.7503**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2389	12.8581	2.8786	0.0633	1.9115	0.1306	2.0420	0.5244	0.1249	0.6493		6,705.9792	6,705.9792	0.0143	1.0541	7,020.4632
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0396	0.0208	0.3213	7.8000e-004	0.0822	4.8000e-004	0.0826	0.0218	4.4000e-004	0.0222		79.1121	79.1121	2.3500e-003	2.0700e-003	79.7864
Total	**0.2785**	**12.8789**	**3.1999**	**0.0641**	**1.9936**	**0.1311**	**2.1247**	**0.5462**	**0.1254**	**0.6715**		**6,785.0913**	**6,785.0913**	**0.0166**	**1.0562**	**7,100.2496**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7136	13.6239	14.2145	0.0250		0.6136	0.6136		0.5880	0.5880		2,289.5233	2,289.5233	0.4330		2,300.3479
Total	**1.7136**	**13.6239**	**14.2145**	**0.0250**		**0.6136**	**0.6136**		**0.5880**	**0.5880**		**2,289.5233**	**2,289.5233**	**0.4330**		**2,300.3479**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0185	0.6341	0.2202	3.0600e-003	0.1017	4.3200e-003	0.1060	0.0293	4.1300e-003	0.0334		323.1884	323.1884	1.1700e-003	0.0472	337.2828
Worker	0.1426	0.0749	1.1568	2.8200e-003	0.2957	1.7200e-003	0.2975	0.0784	1.5800e-003	0.0800		284.8035	284.8035	8.4700e-003	7.4400e-003	287.2310
Total	**0.1611**	**0.7090**	**1.3769**	**5.8800e-003**	**0.3975**	**6.0400e-003**	**0.4035**	**0.1077**	**5.7100e-003**	**0.1134**		**607.9919**	**607.9919**	**9.6400e-003**	**0.0546**	**624.5138**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7136	13.6239	14.2145	0.0250		0.6136	0.6136		0.5880	0.5880	0.0000	2,289.5233	2,289.5233	0.4330		2,300.3479
Total	**1.7136**	**13.6239**	**14.2145**	**0.0250**		**0.6136**	**0.6136**		**0.5880**	**0.5880**	**0.0000**	**2,289.5233**	**2,289.5233**	**0.4330**		**2,300.3479**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0185	0.6341	0.2202	3.0600e-003	0.1017	4.3200e-003	0.1060	0.0293	4.1300e-003	0.0334		323.1884	323.1884	1.1700e-003	0.0472	337.2828
Worker	0.1426	0.0749	1.1568	2.8200e-003	0.2957	1.7200e-003	0.2975	0.0784	1.5800e-003	0.0800		284.8035	284.8035	8.4700e-003	7.4400e-003	287.2310
Total	**0.1611**	**0.7090**	**1.3769**	**5.8800e-003**	**0.3975**	**6.0400e-003**	**0.4035**	**0.1077**	**5.7100e-003**	**0.1134**		**607.9919**	**607.9919**	**9.6400e-003**	**0.0546**	**624.5138**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153		2,289.6541	2,289.6541	0.4265		2,300.3154
Total	**1.5971**	**12.8235**	**14.1002**	**0.0250**		**0.5381**	**0.5381**		**0.5153**	**0.5153**		**2,289.6541**	**2,289.6541**	**0.4265**		**2,300.3154**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0178	0.6346	0.2111	3.0200e-003	0.1017	4.3500e-003	0.1061	0.0293	4.1600e-003	0.0335		318.2425	318.2425	1.1100e-003	0.0464	332.1021
Worker	0.1315	0.0663	1.0801	2.7500e-003	0.2957	1.6800e-003	0.2974	0.0784	1.5500e-003	0.0800		277.7713	277.7713	7.7000e-003	6.9000e-003	280.0187
Total	**0.1493**	**0.7009**	**1.2912**	**5.7700e-003**	**0.3975**	**6.0300e-003**	**0.4035**	**0.1077**	**5.7100e-003**	**0.1135**		**596.0138**	**596.0138**	**8.8100e-003**	**0.0533**	**612.1208**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153	0.0000	2,289.6541	2,289.6541	0.4265		2,300.3154
Total	**1.5971**	**12.8235**	**14.1002**	**0.0250**		**0.5381**	**0.5381**		**0.5153**	**0.5153**	**0.0000**	**2,289.6541**	**2,289.6541**	**0.4265**		**2,300.3154**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0178	0.6346	0.2111	3.0200e-003	0.1017	4.3500e-003	0.1061	0.0293	4.1600e-003	0.0335		318.2425	318.2425	1.1100e-003	0.0464	332.1021
Worker	0.1315	0.0663	1.0801	2.7500e-003	0.2957	1.6800e-003	0.2974	0.0784	1.5500e-003	0.0800		277.7713	277.7713	7.7000e-003	6.9000e-003	280.0187
Total	**0.1493**	**0.7009**	**1.2912**	**5.7700e-003**	**0.3975**	**6.0300e-003**	**0.4035**	**0.1077**	**5.7100e-003**	**0.1135**		**596.0138**	**596.0138**	**8.8100e-003**	**0.0533**	**612.1208**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Architectural Coating - Coffee Shop - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.0719					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**14.2635**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0277	0.0146	0.2249	5.5000e-004	0.0575	3.3000e-004	0.0578	0.0153	3.1000e-004	0.0156		55.3785	55.3785	1.6500e-003	1.4500e-003	55.8505
Total	**0.0277**	**0.0146**	**0.2249**	**5.5000e-004**	**0.0575**	**3.3000e-004**	**0.0578**	**0.0153**	**3.1000e-004**	**0.0156**		**55.3785**	**55.3785**	**1.6500e-003**	**1.4500e-003**	**55.8505**

Madera Ranchos - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Architectural Coating - Coffee Shop - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.0719					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**14.2635**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0277	0.0146	0.2249	5.5000e-004	0.0575	3.3000e-004	0.0578	0.0153	3.1000e-004	0.0156		55.3785	55.3785	1.6500e-003	1.4500e-003	55.8505
Total	**0.0277**	**0.0146**	**0.2249**	**5.5000e-004**	**0.0575**	**3.3000e-004**	**0.0578**	**0.0153**	**3.1000e-004**	**0.0156**		**55.3785**	**55.3785**	**1.6500e-003**	**1.4500e-003**	**55.8505**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 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	lb/day										lb/day					
Off-Road	0.8802	8.6098	11.6840	0.0179		0.4338	0.4338		0.4003	0.4003		1,709.9926	1,709.9926	0.5420		1,723.5414
Paving	0.3904					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2706**	**8.6098**	**11.6840**	**0.0179**		**0.4338**	**0.4338**		**0.4003**	**0.4003**		**1,709.9926**	**1,709.9926**	**0.5420**		**1,723.5414**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0594	0.0312	0.4820	1.1700e-003	0.1232	7.2000e-004	0.1239	0.0327	6.6000e-004	0.0333		118.6681	118.6681	3.5300e-003	3.1000e-003	119.6796
Total	**0.0594**	**0.0312**	**0.4820**	**1.1700e-003**	**0.1232**	**7.2000e-004**	**0.1239**	**0.0327**	**6.6000e-004**	**0.0333**		**118.6681**	**118.6681**	**3.5300e-003**	**3.1000e-003**	**119.6796**

Madera Ranchos - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8802	8.6098	11.6840	0.0179		0.4338	0.4338		0.4003	0.4003	0.0000	1,709.9926	1,709.9926	0.5420		1,723.5414
Paving	0.3904					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2706**	**8.6098**	**11.6840**	**0.0179**		**0.4338**	**0.4338**		**0.4003**	**0.4003**	**0.0000**	**1,709.9926**	**1,709.9926**	**0.5420**		**1,723.5414**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0594	0.0312	0.4820	1.1700e-003	0.1232	7.2000e-004	0.1239	0.0327	6.6000e-004	0.0333		118.6681	118.6681	3.5300e-003	3.1000e-003	119.6796
Total	**0.0594**	**0.0312**	**0.4820**	**1.1700e-003**	**0.1232**	**7.2000e-004**	**0.1239**	**0.0327**	**6.6000e-004**	**0.0333**		**118.6681**	**118.6681**	**3.5300e-003**	**3.1000e-003**	**119.6796**

Madera Ranchos - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - Medical Office/Market/FuelStation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.0907					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**4.2823**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0277	0.0146	0.2249	5.5000e-004	0.0575	3.3000e-004	0.0578	0.0153	3.1000e-004	0.0156		55.3785	55.3785	1.6500e-003	1.4500e-003	55.8505
Total	**0.0277**	**0.0146**	**0.2249**	**5.5000e-004**	**0.0575**	**3.3000e-004**	**0.0578**	**0.0153**	**3.1000e-004**	**0.0156**		**55.3785**	**55.3785**	**1.6500e-003**	**1.4500e-003**	**55.8505**

Madera Ranchos - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - Medical Office/Market/FuelStation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.0907					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**4.2823**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0277	0.0146	0.2249	5.5000e-004	0.0575	3.3000e-004	0.0578	0.0153	3.1000e-004	0.0156		55.3785	55.3785	1.6500e-003	1.4500e-003	55.8505
Total	**0.0277**	**0.0146**	**0.2249**	**5.5000e-004**	**0.0575**	**3.3000e-004**	**0.0578**	**0.0153**	**3.1000e-004**	**0.0156**		**55.3785**	**55.3785**	**1.6500e-003**	**1.4500e-003**	**55.8505**

Madera Ranchos - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - Medical Office/Market/FuelStation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.0907					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**4.2714**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0256	0.0129	0.2100	5.3000e-004	0.0575	3.3000e-004	0.0578	0.0153	3.0000e-004	0.0156		54.0111	54.0111	1.5000e-003	1.3400e-003	54.4481
Total	**0.0256**	**0.0129**	**0.2100**	**5.3000e-004**	**0.0575**	**3.3000e-004**	**0.0578**	**0.0153**	**3.0000e-004**	**0.0156**		**54.0111**	**54.0111**	**1.5000e-003**	**1.3400e-003**	**54.4481**

Madera Ranchos - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - Medical Office/Market/FuelStation - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.0907					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**4.2714**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0256	0.0129	0.2100	5.3000e-004	0.0575	3.3000e-004	0.0578	0.0153	3.0000e-004	0.0156		54.0111	54.0111	1.5000e-003	1.3400e-003	54.4481
Total	**0.0256**	**0.0129**	**0.2100**	**5.3000e-004**	**0.0575**	**3.3000e-004**	**0.0578**	**0.0153**	**3.0000e-004**	**0.0156**		**54.0111**	**54.0111**	**1.5000e-003**	**1.3400e-003**	**54.4481**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	16.1565	17.0169	98.2717	0.1928	16.6665	0.1898	16.8563	4.4546	0.1782	4.6328		19,655.3215	19,655.3215	1.2747	1.1817	20,039.3405
Unmitigated	16.1565	17.0169	98.2717	0.1928	16.6665	0.1898	16.8563	4.4546	0.1782	4.6328		19,655.3215	19,655.3215	1.2747	1.1817	20,039.3405

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market (24 hour)	0.00	0.00	0.00		
Fast Food Restaurant with Drive Thru	1,103.21	1,368.59	1042.92	1,681,652	1,681,652
Gasoline/Service Station	3,034.32	3,446.10	1383.36	4,240,259	4,240,259
Medical Office Building	442.67	169.41	13.73	549,604	549,604
Parking Lot	0.00	0.00	0.00		
Total	4,580.20	4,984.10	2,440.01	6,471,514	6,471,514

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
Convenience Market (24 hour)	9.50	7.30	7.30	0.90	80.10	19.00	24	15	61
Fast Food Restaurant with Drive	9.50	7.30	7.30	2.20	78.80	19.00	54.9	0	45.1

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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
Gasoline/Service Station	9.50	7.30	7.30	2.00	79.00	19.00	54.9	0	45.1
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	54.9	0	45.1
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market (24 hour)	0.500104	0.052860	0.172660	0.158983	0.033384	0.008488	0.010945	0.028437	0.000810	0.000210	0.026444	0.001975	0.004700
Fast Food Restaurant with Drive Thru	0.500104	0.052860	0.172660	0.158983	0.033384	0.008488	0.010945	0.028437	0.000810	0.000210	0.026444	0.001975	0.004700
Gasoline/Service Station	0.500104	0.052860	0.172660	0.158983	0.033384	0.008488	0.010945	0.028437	0.000810	0.000210	0.026444	0.001975	0.004700
Medical Office Building	0.500104	0.052860	0.172660	0.158983	0.033384	0.008488	0.010945	0.028437	0.000810	0.000210	0.026444	0.001975	0.004700
Parking Lot	0.500104	0.052860	0.172660	0.158983	0.033384	0.008488	0.010945	0.028437	0.000810	0.000210	0.026444	0.001975	0.004700

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0217	0.1974	0.1658	1.1800e-003		0.0150	0.0150		0.0150	0.0150		236.8813	236.8813	4.5400e-003	4.3400e-003	238.2889
NaturalGas Unmitigated	0.0217	0.1974	0.1658	1.1800e-003		0.0150	0.0150		0.0150	0.0150		236.8813	236.8813	4.5400e-003	4.3400e-003	238.2889

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market (24 hour)	119.181	1.2900e-003	0.0117	9.8100e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004		14.0213	14.0213	2.7000e-004	2.6000e-004	14.1046
Fast Food Restaurant with Drive Thru	1274.75	0.0138	0.1250	0.1050	7.5000e-004		9.5000e-003	9.5000e-003		9.5000e-003	9.5000e-003		149.9703	149.9703	2.8700e-003	2.7500e-003	150.8615
Gasoline/Service Station	48.0382	5.2000e-004	4.7100e-003	3.9600e-003	3.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		5.6516	5.6516	1.1000e-004	1.0000e-004	5.6851
Medical Office Building	571.524	6.1600e-003	0.0560	0.0471	3.4000e-004		4.2600e-003	4.2600e-003		4.2600e-003	4.2600e-003		67.2381	67.2381	1.2900e-003	1.2300e-003	67.6377
Parking Lot	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
Total		**0.0217**	**0.1974**	**0.1658**	**1.1900e-003**		**0.0150**	**0.0150**		**0.0150**	**0.0150**		**236.8813**	**236.8813**	**4.5400e-003**	**4.3400e-003**	**238.2889**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market (24 hour)	0.119181	1.2900e-003	0.0117	9.8100e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004		14.0213	14.0213	2.7000e-004	2.6000e-004	14.1046
Fast Food Restaurant with Drive Thru	1.27475	0.0138	0.1250	0.1050	7.5000e-004		9.5000e-003	9.5000e-003		9.5000e-003	9.5000e-003		149.9703	149.9703	2.8700e-003	2.7500e-003	150.8615
Gasoline/Service Station	0.0480382	5.2000e-004	4.7100e-003	3.9600e-003	3.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		5.6516	5.6516	1.1000e-004	1.0000e-004	5.6851
Medical Office Building	0.571524	6.1600e-003	0.0560	0.0471	3.4000e-004		4.2600e-003	4.2600e-003		4.2600e-003	4.2600e-003		67.2381	67.2381	1.2900e-003	1.2300e-003	67.6377
Parking Lot	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
Total		**0.0217**	**0.1974**	**0.1658**	**1.1900e-003**		**0.0150**	**0.0150**		**0.0150**	**0.0150**		**236.8813**	**236.8813**	**4.5400e-003**	**4.3400e-003**	**238.2889**

6.0 Area Detail

6.1 Mitigation Measures Area

Madera Ranchos - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.6205	1.8000e-004	0.0198	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0426	0.0426	1.1000e-004		0.0453
Unmitigated	0.6205	1.8000e-004	0.0198	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0426	0.0426	1.1000e-004		0.0453

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0964					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5223					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.8300e-003	1.8000e-004	0.0198	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0426	0.0426	1.1000e-004		0.0453
Total	**0.6205**	**1.8000e-004**	**0.0198**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0426**	**0.0426**	**1.1000e-004**		**0.0453**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0964					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5223					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.8300e-003	1.8000e-004	0.0198	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0426	0.0426	1.1000e-004		0.0453
Total	**0.6205**	**1.8000e-004**	**0.0198**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0426**	**0.0426**	**1.1000e-004**		**0.0453**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Madera Ranchos - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Madera Ranchos

Madera County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	16.15	1000sqft	0.37	16,146.00	0
Parking Lot	166.00	Space	1.49	66,400.00	0
Fast Food Restaurant with Drive Thru	2.21	1000sqft	0.05	2,215.00	0
Convenience Market (24 hour)	4.10	1000sqft	0.09	4,100.00	0
Gasoline/Service Station	6.00	Pump	0.02	847.05	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.9	**Precipitation Freq (Days)**	51
Climate Zone	3			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Square footage updated to match project description

Construction Phase - Construction schedule provided

Trips and VMT -

Grading -

Vehicle Trips - Convenience store trips accounted for in gasoline/service station land use. Trip rates adjusted to account for internal capture.

Area Coating -

Fleet Mix -

Madera Ranchos - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	PhaseName	Architectural Coating - Medical Office	Architectural Coating - Medical Office/Market/FuelStation
tblConstructionPhase	NumDays	10.00	25.00
tblConstructionPhase	NumDays	10.00	86.00
tblConstructionPhase	NumDays	220.00	269.00
tblConstructionPhase	NumDays	6.00	10.00
tblConstructionPhase	NumDays	3.00	5.00
tblGrading	MaterialExported	0.00	8,723.00
tblLandUse	LandUseSquareFeet	16,150.00	16,146.00
tblLandUse	LandUseSquareFeet	2,210.00	2,215.00
tblOffRoadEquipment	PhaseName	Architectural Coating - Medical Office	Architectural Coating - Medical Office/Market/FuelStation
tblOffRoadEquipment	PhaseName	Building Construction - Coffee Shop	Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice
tblOffRoadEquipment	PhaseName	Building Construction - Coffee Shop	Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice
tblOffRoadEquipment	PhaseName	Building Construction - Coffee Shop	Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice
tblOffRoadEquipment	PhaseName	Building Construction - Coffee Shop	Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice
tblOffRoadEquipment	PhaseName	Building Construction - Coffee Shop	Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice
tblOnRoadDust	PhaseName	Building Construction - Coffee Shop	Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice
tblOnRoadDust	PhaseName	Architectural Coating - Medical Office	Architectural Coating - Medical Office/Market/FuelStation
tblTripsAndVMT	PhaseName	Building Construction - Coffee Shop	Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice
tblTripsAndVMT	PhaseName	Architectural Coating - Medical Office	Architectural Coating - Medical Office/Market/FuelStation
tblVehicleTrips	DV_TP	21.00	0.00
tblVehicleTrips	DV_TP	27.00	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	DV_TP	30.00	0.00
tblVehicleTrips	PB_TP	50.00	45.10
tblVehicleTrips	PB_TP	59.00	45.10
tblVehicleTrips	PB_TP	10.00	45.10
tblVehicleTrips	PR_TP	29.00	54.90
tblVehicleTrips	PR_TP	14.00	54.90
tblVehicleTrips	PR_TP	60.00	54.90
tblVehicleTrips	ST_TR	1,084.17	0.00
tblVehicleTrips	ST_TR	616.12	619.27
tblVehicleTrips	ST_TR	182.17	574.35
tblVehicleTrips	ST_TR	8.57	10.49
tblVehicleTrips	SU_TR	901.17	0.00
tblVehicleTrips	SU_TR	472.58	471.91
tblVehicleTrips	SU_TR	166.88	230.56
tblVehicleTrips	SU_TR	1.42	0.85
tblVehicleTrips	WD_TR	762.28	0.00
tblVehicleTrips	WD_TR	470.95	499.19
tblVehicleTrips	WD_TR	172.01	505.72
tblVehicleTrips	WD_TR	34.80	27.41

2.0 Emissions Summary

Madera Ranchos - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	17.4695	28.2468	29.5315	0.0847	9.2175	1.1254	9.9530	3.9923	1.0658	4.6738	0.0000	8,781.4110	8,781.4110	1.0080	1.0579	9,113.2013
2024	6.0253	14.8153	17.2349	0.0340	0.4550	0.6054	1.0603	0.1230	0.5822	0.7052	0.0000	3,186.3168	3,186.3168	0.4536	0.0558	3,214.2926
Maximum	**17.4695**	**28.2468**	**29.5315**	**0.0847**	**9.2175**	**1.1254**	**9.9530**	**3.9923**	**1.0658**	**4.6738**	**0.0000**	**8,781.4110**	**8,781.4110**	**1.0080**	**1.0579**	**9,113.2013**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	17.4695	28.2468	29.5315	0.0847	9.2175	1.1254	9.9530	3.9923	1.0658	4.6738	0.0000	8,781.4110	8,781.4110	1.0080	1.0579	9,113.2013
2024	6.0253	14.8153	17.2349	0.0340	0.4550	0.6054	1.0603	0.1230	0.5822	0.7052	0.0000	3,186.3168	3,186.3168	0.4536	0.0558	3,214.2926
Maximum	**17.4695**	**28.2468**	**29.5315**	**0.0847**	**9.2175**	**1.1254**	**9.9530**	**3.9923**	**1.0658**	**4.6738**	**0.0000**	**8,781.4110**	**8,781.4110**	**1.0080**	**1.0579**	**9,113.2013**

Madera Ranchos - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.6205	1.8000e-004	0.0198	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0426	0.0426	1.1000e-004		0.0453
Energy	0.0217	0.1974	0.1658	1.1800e-003		0.0150	0.0150		0.0150	0.0150		236.8813	236.8813	4.5400e-003	4.3400e-003	238.2889
Mobile	12.1428	19.0577	100.7539	0.1788	16.6665	0.1901	16.8566	4.4546	0.1784	4.6330		18,233.5713	18,233.5713	1.5015	1.2653	18,648.1791
Total	**12.7850**	**19.2553**	**100.9396**	**0.1800**	**16.6665**	**0.2051**	**16.8716**	**4.4546**	**0.1935**	**4.6481**		**18,470.4952**	**18,470.4952**	**1.5061**	**1.2697**	**18,886.5134**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.6205	1.8000e-004	0.0198	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0426	0.0426	1.1000e-004		0.0453
Energy	0.0217	0.1974	0.1658	1.1800e-003		0.0150	0.0150		0.0150	0.0150		236.8813	236.8813	4.5400e-003	4.3400e-003	238.2889
Mobile	12.1428	19.0577	100.7539	0.1788	16.6665	0.1901	16.8566	4.4546	0.1784	4.6330		18,233.5713	18,233.5713	1.5015	1.2653	18,648.1791
Total	**12.7850**	**19.2553**	**100.9396**	**0.1800**	**16.6665**	**0.2051**	**16.8716**	**4.4546**	**0.1935**	**4.6481**		**18,470.4952**	**18,470.4952**	**1.5061**	**1.2697**	**18,886.5134**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/17/2023	4/21/2023	5	5	
2	Grading	Grading	4/24/2023	5/5/2023	5	10	
3	Building Construction - Coffee Shop/Market/FuelStation/Medical Office	Building Construction	5/9/2023	5/17/2024	5	269	
4	Architectural Coating - Coffee Shop	Architectural Coating	7/31/2023	9/1/2023	5	25	
5	Paving	Paving	8/21/2023	9/1/2023	5	10	
6	Architectural Coating - Medical Office/Market/FuelStation	Architectural Coating	9/25/2023	1/22/2024	5	86	

Acres of Grading (Site Preparation Phase): 7.5

Acres of Grading (Grading Phase): 10

Acres of Paving: 1.49

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 34,962; Non-Residential Outdoor: 11,654; Striped Parking Area: 3,984 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice	Cranes	1	8.00	231	0.29
Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice	Forklifts	2	7.00	89	0.20
Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice	Generator Sets	1	8.00	84	0.74
Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice	Welders	3	8.00	46	0.45
Architectural Coating - Coffee Shop	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating - Medical Office/Market/FuelStation	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	1,090.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction - Coffee Shop/Market/F	8	36.00	15.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - Coffee Shop	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - Medical Office/Market/	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.3027	14.2802	9.7820	0.0245		0.5419	0.5419		0.4985	0.4985		2,374.8634	2,374.8634	0.7681		2,394.0654
Total	**1.3027**	**14.2802**	**9.7820**	**0.0245**	**1.5908**	**0.5419**	**2.1326**	**0.1718**	**0.4985**	**0.6703**		**2,374.8634**	**2,374.8634**	**0.7681**		**2,394.0654**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0282	0.0198	0.2200	5.6000e-004	0.0657	3.8000e-004	0.0661	0.0174	3.5000e-004	0.0178		56.5119	56.5119	2.0900e-003	1.8600e-003	57.1175
Total	**0.0282**	**0.0198**	**0.2200**	**5.6000e-004**	**0.0657**	**3.8000e-004**	**0.0661**	**0.0174**	**3.5000e-004**	**0.0178**		**56.5119**	**56.5119**	**2.0900e-003**	**1.8600e-003**	**57.1175**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.3027	14.2802	9.7820	0.0245		0.5419	0.5419		0.4985	0.4985	0.0000	2,374.8634	2,374.8634	0.7681		2,394.0654
Total	**1.3027**	**14.2802**	**9.7820**	**0.0245**	**1.5908**	**0.5419**	**2.1326**	**0.1718**	**0.4985**	**0.6703**	**0.0000**	**2,374.8634**	**2,374.8634**	**0.7681**		**2,394.0654**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0282	0.0198	0.2200	5.6000e-004	0.0657	3.8000e-004	0.0661	0.0174	3.5000e-004	0.0178		56.5119	56.5119	2.0900e-003	1.8600e-003	57.1175
Total	**0.0282**	**0.0198**	**0.2200**	**5.6000e-004**	**0.0657**	**3.8000e-004**	**0.0661**	**0.0174**	**3.5000e-004**	**0.0178**		**56.5119**	**56.5119**	**2.0900e-003**	**1.8600e-003**	**57.1175**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.2239	0.0000	7.2239	3.4461	0.0000	3.4461			0.0000			0.0000
Off-Road	1.3330	14.4676	8.7038	0.0206		0.6044	0.6044		0.5560	0.5560		1,995.6147	1,995.6147	0.6454		2,011.7503
Total	**1.3330**	**14.4676**	**8.7038**	**0.0206**	**7.2239**	**0.6044**	**7.8282**	**3.4461**	**0.5560**	**4.0021**		**1,995.6147**	**1,995.6147**	**0.6454**		**2,011.7503**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2211	13.7544	2.9317	0.0634	1.9115	0.1307	2.0422	0.5244	0.1251	0.6495		6,715.1564	6,715.1564	0.0135	1.0556	7,030.0541
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0352	0.0248	0.2750	7.0000e-004	0.0822	4.8000e-004	0.0826	0.0218	4.4000e-004	0.0222		70.6399	70.6399	2.6100e-003	2.3200e-003	71.3969
Total	**0.2563**	**13.7792**	**3.2067**	**0.0641**	**1.9936**	**0.1312**	**2.1248**	**0.5462**	**0.1255**	**0.6717**		**6,785.7963**	**6,785.7963**	**0.0161**	**1.0579**	**7,101.4510**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.2239	0.0000	7.2239	3.4461	0.0000	3.4461			0.0000			0.0000
Off-Road	1.3330	14.4676	8.7038	0.0206		0.6044	0.6044		0.5560	0.5560	0.0000	1,995.6147	1,995.6147	0.6454		2,011.7503
Total	**1.3330**	**14.4676**	**8.7038**	**0.0206**	**7.2239**	**0.6044**	**7.8282**	**3.4461**	**0.5560**	**4.0021**	**0.0000**	**1,995.6147**	**1,995.6147**	**0.6454**		**2,011.7503**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2211	13.7544	2.9317	0.0634	1.9115	0.1307	2.0422	0.5244	0.1251	0.6495		6,715.1564	6,715.1564	0.0135	1.0556	7,030.0541
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0352	0.0248	0.2750	7.0000e-004	0.0822	4.8000e-004	0.0826	0.0218	4.4000e-004	0.0222		70.6399	70.6399	2.6100e-003	2.3200e-003	71.3969
Total	**0.2563**	**13.7792**	**3.2067**	**0.0641**	**1.9936**	**0.1312**	**2.1248**	**0.5462**	**0.1255**	**0.6717**		**6,785.7963**	**6,785.7963**	**0.0161**	**1.0579**	**7,101.4510**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7136	13.6239	14.2145	0.0250		0.6136	0.6136		0.5880	0.5880		2,289.5233	2,289.5233	0.4330		2,300.3479
Total	**1.7136**	**13.6239**	**14.2145**	**0.0250**		**0.6136**	**0.6136**		**0.5880**	**0.5880**		**2,289.5233**	**2,289.5233**	**0.4330**		**2,300.3479**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0175	0.6786	0.2270	3.0700e-003	0.1017	4.3300e-003	0.1061	0.0293	4.1400e-003	0.0334		323.8258	323.8258	1.1200e-003	0.0474	337.9693
Worker	0.1268	0.0892	0.9900	2.5200e-003	0.2957	1.7200e-003	0.2975	0.0784	1.5800e-003	0.0800		254.3037	254.3037	9.3900e-003	8.3600e-003	257.0288
Total	**0.1442**	**0.7677**	**1.2169**	**5.5900e-003**	**0.3975**	**6.0500e-003**	**0.4035**	**0.1077**	**5.7200e-003**	**0.1135**		**578.1295**	**578.1295**	**0.0105**	**0.0557**	**594.9981**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7136	13.6239	14.2145	0.0250		0.6136	0.6136		0.5880	0.5880	0.0000	2,289.5233	2,289.5233	0.4330		2,300.3479
Total	**1.7136**	**13.6239**	**14.2145**	**0.0250**		**0.6136**	**0.6136**		**0.5880**	**0.5880**	**0.0000**	**2,289.5233**	**2,289.5233**	**0.4330**		**2,300.3479**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0175	0.6786	0.2270	3.0700e-003	0.1017	4.3300e-003	0.1061	0.0293	4.1400e-003	0.0334		323.8258	323.8258	1.1200e-003	0.0474	337.9693
Worker	0.1268	0.0892	0.9900	2.5200e-003	0.2957	1.7200e-003	0.2975	0.0784	1.5800e-003	0.0800		254.3037	254.3037	9.3900e-003	8.3600e-003	257.0288
Total	**0.1442**	**0.7677**	**1.2169**	**5.5900e-003**	**0.3975**	**6.0500e-003**	**0.4035**	**0.1077**	**5.7200e-003**	**0.1135**		**578.1295**	**578.1295**	**0.0105**	**0.0557**	**594.9981**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153		2,289.6541	2,289.6541	0.4265		2,300.3154
Total	**1.5971**	**12.8235**	**14.1002**	**0.0250**		**0.5381**	**0.5381**		**0.5153**	**0.5153**		**2,289.6541**	**2,289.6541**	**0.4265**		**2,300.3154**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0168	0.6788	0.2181	3.0200e-003	0.1017	4.3700e-003	0.1061	0.0293	4.1800e-003	0.0335		318.8720	318.8720	1.0700e-003	0.0466	332.7780
Worker	0.1172	0.0789	0.9264	2.4500e-003	0.2957	1.6800e-003	0.2974	0.0784	1.5500e-003	0.0800		248.1009	248.1009	8.5500e-003	7.7500e-003	250.6228
Total	**0.1339**	**0.7577**	**1.1445**	**5.4700e-003**	**0.3975**	**6.0500e-003**	**0.4035**	**0.1077**	**5.7300e-003**	**0.1135**		**566.9729**	**566.9729**	**9.6200e-003**	**0.0543**	**583.4008**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153	0.0000	2,289.6541	2,289.6541	0.4265		2,300.3154
Total	**1.5971**	**12.8235**	**14.1002**	**0.0250**		**0.5381**	**0.5381**		**0.5153**	**0.5153**	**0.0000**	**2,289.6541**	**2,289.6541**	**0.4265**		**2,300.3154**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0168	0.6788	0.2181	3.0200e-003	0.1017	4.3700e-003	0.1061	0.0293	4.1800e-003	0.0335		318.8720	318.8720	1.0700e-003	0.0466	332.7780
Worker	0.1172	0.0789	0.9264	2.4500e-003	0.2957	1.6800e-003	0.2974	0.0784	1.5500e-003	0.0800		248.1009	248.1009	8.5500e-003	7.7500e-003	250.6228
Total	**0.1339**	**0.7577**	**1.1445**	**5.4700e-003**	**0.3975**	**6.0500e-003**	**0.4035**	**0.1077**	**5.7300e-003**	**0.1135**		**566.9729**	**566.9729**	**9.6200e-003**	**0.0543**	**583.4008**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Architectural Coating - Coffee Shop - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.0719					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**14.2635**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0247	0.0173	0.1925	4.9000e-004	0.0575	3.3000e-004	0.0578	0.0153	3.1000e-004	0.0156		49.4479	49.4479	1.8300e-003	1.6200e-003	49.9778
Total	**0.0247**	**0.0173**	**0.1925**	**4.9000e-004**	**0.0575**	**3.3000e-004**	**0.0578**	**0.0153**	**3.1000e-004**	**0.0156**		**49.4479**	**49.4479**	**1.8300e-003**	**1.6200e-003**	**49.9778**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Architectural Coating - Coffee Shop - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.0719					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**14.2635**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0247	0.0173	0.1925	4.9000e-004	0.0575	3.3000e-004	0.0578	0.0153	3.1000e-004	0.0156		49.4479	49.4479	1.8300e-003	1.6200e-003	49.9778
Total	**0.0247**	**0.0173**	**0.1925**	**4.9000e-004**	**0.0575**	**3.3000e-004**	**0.0578**	**0.0153**	**3.1000e-004**	**0.0156**		**49.4479**	**49.4479**	**1.8300e-003**	**1.6200e-003**	**49.9778**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 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	lb/day										lb/day					
Off-Road	0.8802	8.6098	11.6840	0.0179		0.4338	0.4338		0.4003	0.4003		1,709.9926	1,709.9926	0.5420		1,723.5414
Paving	0.3904					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2706**	**8.6098**	**11.6840**	**0.0179**		**0.4338**	**0.4338**		**0.4003**	**0.4003**		**1,709.9926**	**1,709.9926**	**0.5420**		**1,723.5414**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0528	0.0372	0.4125	1.0500e-003	0.1232	7.2000e-004	0.1239	0.0327	6.6000e-004	0.0333		105.9599	105.9599	3.9100e-003	3.4800e-003	107.0953
Total	**0.0528**	**0.0372**	**0.4125**	**1.0500e-003**	**0.1232**	**7.2000e-004**	**0.1239**	**0.0327**	**6.6000e-004**	**0.0333**		**105.9599**	**105.9599**	**3.9100e-003**	**3.4800e-003**	**107.0953**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8802	8.6098	11.6840	0.0179		0.4338	0.4338		0.4003	0.4003	0.0000	1,709.9926	1,709.9926	0.5420		1,723.5414
Paving	0.3904					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2706**	**8.6098**	**11.6840**	**0.0179**		**0.4338**	**0.4338**		**0.4003**	**0.4003**	**0.0000**	**1,709.9926**	**1,709.9926**	**0.5420**		**1,723.5414**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0528	0.0372	0.4125	1.0500e-003	0.1232	7.2000e-004	0.1239	0.0327	6.6000e-004	0.0333		105.9599	105.9599	3.9100e-003	3.4800e-003	107.0953
Total	**0.0528**	**0.0372**	**0.4125**	**1.0500e-003**	**0.1232**	**7.2000e-004**	**0.1239**	**0.0327**	**6.6000e-004**	**0.0333**		**105.9599**	**105.9599**	**3.9100e-003**	**3.4800e-003**	**107.0953**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - Medical Office/Market/FuelStation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.0907					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**4.2823**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0247	0.0173	0.1925	4.9000e-004	0.0575	3.3000e-004	0.0578	0.0153	3.1000e-004	0.0156		49.4479	49.4479	1.8300e-003	1.6200e-003	49.9778
Total	**0.0247**	**0.0173**	**0.1925**	**4.9000e-004**	**0.0575**	**3.3000e-004**	**0.0578**	**0.0153**	**3.1000e-004**	**0.0156**		**49.4479**	**49.4479**	**1.8300e-003**	**1.6200e-003**	**49.9778**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - Medical Office/Market/FuelStation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.0907					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**4.2823**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0247	0.0173	0.1925	4.9000e-004	0.0575	3.3000e-004	0.0578	0.0153	3.1000e-004	0.0156		49.4479	49.4479	1.8300e-003	1.6200e-003	49.9778
Total	**0.0247**	**0.0173**	**0.1925**	**4.9000e-004**	**0.0575**	**3.3000e-004**	**0.0578**	**0.0153**	**3.1000e-004**	**0.0156**		**49.4479**	**49.4479**	**1.8300e-003**	**1.6200e-003**	**49.9778**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - Medical Office/Market/FuelStation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.0907					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**4.2714**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0228	0.0154	0.1801	4.8000e-004	0.0575	3.3000e-004	0.0578	0.0153	3.0000e-004	0.0156		48.2418	48.2418	1.6600e-003	1.5100e-003	48.7322
Total	**0.0228**	**0.0154**	**0.1801**	**4.8000e-004**	**0.0575**	**3.3000e-004**	**0.0578**	**0.0153**	**3.0000e-004**	**0.0156**		**48.2418**	**48.2418**	**1.6600e-003**	**1.5100e-003**	**48.7322**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - Medical Office/Market/FuelStation - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.0907					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**4.2714**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0228	0.0154	0.1801	4.8000e-004	0.0575	3.3000e-004	0.0578	0.0153	3.0000e-004	0.0156		48.2418	48.2418	1.6600e-003	1.5100e-003	48.7322
Total	**0.0228**	**0.0154**	**0.1801**	**4.8000e-004**	**0.0575**	**3.3000e-004**	**0.0578**	**0.0153**	**3.0000e-004**	**0.0156**		**48.2418**	**48.2418**	**1.6600e-003**	**1.5100e-003**	**48.7322**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	12.1428	19.0577	100.7539	0.1788	16.6665	0.1901	16.8566	4.4546	0.1784	4.6330		18,233.5713	18,233.5713	1.5015	1.2653	18,648.1791
Unmitigated	12.1428	19.0577	100.7539	0.1788	16.6665	0.1901	16.8566	4.4546	0.1784	4.6330		18,233.5713	18,233.5713	1.5015	1.2653	18,648.1791

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market (24 hour)	0.00	0.00	0.00		
Fast Food Restaurant with Drive Thru	1,103.21	1,368.59	1042.92	1,681,652	1,681,652
Gasoline/Service Station	3,034.32	3,446.10	1383.36	4,240,259	4,240,259
Medical Office Building	442.67	169.41	13.73	549,604	549,604
Parking Lot	0.00	0.00	0.00		
Total	4,580.20	4,984.10	2,440.01	6,471,514	6,471,514

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
Convenience Market (24 hour)	9.50	7.30	7.30	0.90	80.10	19.00	24	15	61
Fast Food Restaurant with Drive	9.50	7.30	7.30	2.20	78.80	19.00	54.9	0	45.1

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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
Gasoline/Service Station	9.50	7.30	7.30	2.00	79.00	19.00	54.9	0	45.1
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	54.9	0	45.1
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market (24 hour)	0.500104	0.052860	0.172660	0.158983	0.033384	0.008488	0.010945	0.028437	0.000810	0.000210	0.026444	0.001975	0.004700
Fast Food Restaurant with Drive Thru	0.500104	0.052860	0.172660	0.158983	0.033384	0.008488	0.010945	0.028437	0.000810	0.000210	0.026444	0.001975	0.004700
Gasoline/Service Station	0.500104	0.052860	0.172660	0.158983	0.033384	0.008488	0.010945	0.028437	0.000810	0.000210	0.026444	0.001975	0.004700
Medical Office Building	0.500104	0.052860	0.172660	0.158983	0.033384	0.008488	0.010945	0.028437	0.000810	0.000210	0.026444	0.001975	0.004700
Parking Lot	0.500104	0.052860	0.172660	0.158983	0.033384	0.008488	0.010945	0.028437	0.000810	0.000210	0.026444	0.001975	0.004700

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0217	0.1974	0.1658	1.1800e-003		0.0150	0.0150		0.0150	0.0150		236.8813	236.8813	4.5400e-003	4.3400e-003	238.2889
NaturalGas Unmitigated	0.0217	0.1974	0.1658	1.1800e-003		0.0150	0.0150		0.0150	0.0150		236.8813	236.8813	4.5400e-003	4.3400e-003	238.2889

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market (24 hour)	119.181	1.2900e-003	0.0117	9.8100e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004		14.0213	14.0213	2.7000e-004	2.6000e-004	14.1046
Fast Food Restaurant with Drive Thru	1274.75	0.0138	0.1250	0.1050	7.5000e-004		9.5000e-003	9.5000e-003		9.5000e-003	9.5000e-003		149.9703	149.9703	2.8700e-003	2.7500e-003	150.8615
Gasoline/Service Station	48.0382	5.2000e-004	4.7100e-003	3.9600e-003	3.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		5.6516	5.6516	1.1000e-004	1.0000e-004	5.6851
Medical Office Building	571.524	6.1600e-003	0.0560	0.0471	3.4000e-004		4.2600e-003	4.2600e-003		4.2600e-003	4.2600e-003		67.2381	67.2381	1.2900e-003	1.2300e-003	67.6377
Parking Lot	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
Total		**0.0217**	**0.1974**	**0.1658**	**1.1900e-003**		**0.0150**	**0.0150**		**0.0150**	**0.0150**		**236.8813**	**236.8813**	**4.5400e-003**	**4.3400e-003**	**238.2889**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market (24 hour)	0.119181	1.2900e-003	0.0117	9.8100e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004		14.0213	14.0213	2.7000e-004	2.6000e-004	14.1046
Fast Food Restaurant with Drive Thru	1.27475	0.0138	0.1250	0.1050	7.5000e-004		9.5000e-003	9.5000e-003		9.5000e-003	9.5000e-003		149.9703	149.9703	2.8700e-003	2.7500e-003	150.8615
Gasoline/Service Station	0.0480382	5.2000e-004	4.7100e-003	3.9600e-003	3.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		5.6516	5.6516	1.1000e-004	1.0000e-004	5.6851
Medical Office Building	0.571524	6.1600e-003	0.0560	0.0471	3.4000e-004		4.2600e-003	4.2600e-003		4.2600e-003	4.2600e-003		67.2381	67.2381	1.2900e-003	1.2300e-003	67.6377
Parking Lot	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
Total		**0.0217**	**0.1974**	**0.1658**	**1.1900e-003**		**0.0150**	**0.0150**		**0.0150**	**0.0150**		**236.8813**	**236.8813**	**4.5400e-003**	**4.3400e-003**	**238.2889**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.6205	1.8000e-004	0.0198	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0426	0.0426	1.1000e-004		0.0453
Unmitigated	0.6205	1.8000e-004	0.0198	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0426	0.0426	1.1000e-004		0.0453

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0964					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5223					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.8300e-003	1.8000e-004	0.0198	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0426	0.0426	1.1000e-004		0.0453
Total	**0.6205**	**1.8000e-004**	**0.0198**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0426**	**0.0426**	**1.1000e-004**		**0.0453**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0964					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5223					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.8300e-003	1.8000e-004	0.0198	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0426	0.0426	1.1000e-004		0.0453
Total	**0.6205**	**1.8000e-004**	**0.0198**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0426**	**0.0426**	**1.1000e-004**		**0.0453**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Madera Ranchos_Mitigated - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Madera Ranchos_Mitigated

Madera County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	16.15	1000sqft	0.37	16,146.00	0
Parking Lot	166.00	Space	1.49	66,400.00	0
Fast Food Restaurant with Drive Thru	2.21	1000sqft	0.05	2,215.00	0
Convenience Market (24 hour)	4.10	1000sqft	0.09	4,100.00	0
Gasoline/Service Station	6.00	Pump	0.02	847.05	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.9	**Precipitation Freq (Days)**	51
Climate Zone	3			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Square footage updated to match project description

Construction Phase - Construction schedule provided

Trips and VMT -

Grading -

Vehicle Trips - Convenience store trips accounted for in gasoline/service station land use. Trip rates adjusted to account for internal capture.

Area Coating -

Construction Off-road Equipment Mitigation - MM AQ-1

Madera Ranchos_Mitigated - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Fleet Mix -

Table Name	Column Name	Default Value	New Value
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	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	10.00	25.00
tblConstructionPhase	NumDays	10.00	86.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstructionPhase	NumDays	220.00	269.00
tblConstructionPhase	NumDays	6.00	10.00
tblConstructionPhase	NumDays	3.00	5.00
tblGrading	MaterialExported	0.00	8,723.00
tblLandUse	LandUseSquareFeet	16,150.00	16,146.00
tblLandUse	LandUseSquareFeet	2,210.00	2,215.00
tblVehicleTrips	DV_TP	21.00	0.00
tblVehicleTrips	DV_TP	27.00	0.00
tblVehicleTrips	DV_TP	30.00	0.00
tblVehicleTrips	PB_TP	50.00	45.10
tblVehicleTrips	PB_TP	59.00	45.10
tblVehicleTrips	PB_TP	10.00	45.10
tblVehicleTrips	PR_TP	29.00	54.90
tblVehicleTrips	PR_TP	14.00	54.90
tblVehicleTrips	PR_TP	60.00	54.90
tblVehicleTrips	ST_TR	1,084.17	0.00
tblVehicleTrips	ST_TR	616.12	619.27
tblVehicleTrips	ST_TR	182.17	574.35
tblVehicleTrips	ST_TR	8.57	10.49
tblVehicleTrips	SU_TR	901.17	0.00
tblVehicleTrips	SU_TR	472.58	471.91
tblVehicleTrips	SU_TR	166.88	230.56
tblVehicleTrips	SU_TR	1.42	0.85
tblVehicleTrips	WD_TR	762.28	0.00
tblVehicleTrips	WD_TR	470.95	499.19
tblVehicleTrips	WD_TR	172.01	505.72
tblVehicleTrips	WD_TR	34.80	27.41

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.5040	1.4953	1.5449	3.3400e-003	0.0858	0.0630	0.1488	0.0301	0.0602	0.0903	0.0000	288.3564	288.3564	0.0420	9.1000e-003	292.1183
2024	0.1208	0.6877	0.7785	1.5600e-003	0.0197	0.0277	0.0474	5.3600e-003	0.0265	0.0319	0.0000	132.3309	132.3309	0.0199	2.4500e-003	133.5574
Maximum	**0.5040**	**1.4953**	**1.5449**	**3.3400e-003**	**0.0858**	**0.0630**	**0.1488**	**0.0301**	**0.0602**	**0.0903**	**0.0000**	**288.3564**	**288.3564**	**0.0420**	**9.1000e-003**	**292.1183**

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					
2023	0.3684	0.4794	1.6311	3.3400e-003	0.0858	4.8300e-003	0.0906	0.0301	4.7700e-003	0.0349	0.0000	288.3562	288.3562	0.0420	9.1000e-003	292.1181
2024	0.0562	0.2314	0.8205	1.5600e-003	0.0197	2.1000e-003	0.0218	5.3600e-003	2.0800e-003	7.4400e-003	0.0000	132.3307	132.3307	0.0199	2.4500e-003	133.5573
Maximum	**0.3684**	**0.4794**	**1.6311**	**3.3400e-003**	**0.0858**	**4.8300e-003**	**0.0906**	**0.0301**	**4.7700e-003**	**0.0349**	**0.0000**	**288.3562**	**288.3562**	**0.0420**	**9.1000e-003**	**292.1181**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**32.05**	**67.44**	**-5.51**	**0.00**	**0.00**	**92.35**	**42.67**	**0.00**	**92.10**	**65.38**	**0.00**	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**4-17-2023**	**7-16-2023**	0.5514	0.1900
2	**7-17-2023**	**10-16-2023**	0.8037	0.3775
3	**10-17-2023**	**1-16-2024**	0.7129	0.3088
4	**1-17-2024**	**4-16-2024**	0.5093	0.1744
5	**4-17-2024**	**7-16-2024**	0.1691	0.0559
		Highest	0.8037	0.3775

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	0.1131	2.0000e-005	1.7800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4700e-003	3.4700e-003	1.0000e-005	0.0000	3.7000e-003
Energy	3.9600e-003	0.0360	0.0303	2.2000e-004		2.7400e-003	2.7400e-003		2.7400e-003	2.7400e-003	0.0000	64.0475	64.0475	4.7700e-003	1.2100e-003	64.5260
Mobile	1.9494	2.7078	14.1996	0.0273	2.4237	0.0284	2.4522	0.6494	0.0267	0.6761	0.0000	2,528.2626	2,528.2626	0.1869	0.1656	2,582.2869
Waste						0.0000	0.0000		0.0000	0.0000	43.7303	0.0000	43.7303	2.5844	0.0000	108.3401
Water						0.0000	0.0000		0.0000	0.0000	0.9774	1.7573	2.7347	0.1007	2.4000e-003	5.9680
Total	**2.0664**	**2.7438**	**14.2316**	**0.0276**	**2.4237**	**0.0312**	**2.4549**	**0.6494**	**0.0295**	**0.6789**	**44.7077**	**2,594.0708**	**2,638.7785**	**2.8767**	**0.1692**	**2,761.1247**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1131	2.0000e-005	1.7800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4700e-003	3.4700e-003	1.0000e-005	0.0000	3.7000e-003
Energy	3.9600e-003	0.0360	0.0303	2.2000e-004		2.7400e-003	2.7400e-003		2.7400e-003	2.7400e-003	0.0000	64.0475	64.0475	4.7700e-003	1.2100e-003	64.5260
Mobile	1.9494	2.7078	14.1996	0.0273	2.4237	0.0284	2.4522	0.6494	0.0267	0.6761	0.0000	2,528.2626	2,528.2626	0.1869	0.1656	2,582.2869
Waste						0.0000	0.0000		0.0000	0.0000	43.7303	0.0000	43.7303	2.5844	0.0000	108.3401
Water						0.0000	0.0000		0.0000	0.0000	0.9774	1.7573	2.7347	0.1007	2.4000e-003	5.9680
Total	**2.0664**	**2.7438**	**14.2316**	**0.0276**	**2.4237**	**0.0312**	**2.4549**	**0.6494**	**0.0295**	**0.6789**	**44.7077**	**2,594.0708**	**2,638.7785**	**2.8767**	**0.1692**	**2,761.1247**

	ROG	NOx	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	4/17/2023	4/21/2023	5	5	
2	Grading	Grading	4/24/2023	5/5/2023	5	10	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3	Building Construction - Coffee Shop/Market/FuelStation/Medical Office	Building Construction	5/9/2023	5/17/2024	5	269	
4	Architectural Coating - Coffee Shop	Architectural Coating	7/31/2023	9/1/2023	5	25	
5	Paving	Paving	8/21/2023	9/1/2023	5	10	
6	Architectural Coating - Medical Office/Market/FuelStation	Architectural Coating	9/25/2023	1/22/2024	5	86	

Acres of Grading (Site Preparation Phase): 7.5

Acres of Grading (Grading Phase): 10

Acres of Paving: 1.49

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 34,962; Non-Residential Outdoor: 11,654; Striped Parking Area: 3,984 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice	Cranes	1	8.00	231	0.29
Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice	Forklifts	2	7.00	89	0.20
Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice	Generator Sets	1	8.00	84	0.74
Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice	Welders	3	8.00	46	0.45
Architectural Coating - Coffee Shop	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating - Medical Office/Market/FuelStation	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	1,090.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction - Coffee Shop/Market/F	8	36.00	15.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - Coffee Shop	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating - Medical Office/Market/	1	7.00	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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.9800e-003	0.0000	3.9800e-003	4.3000e-004	0.0000	4.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2600e-003	0.0357	0.0245	6.0000e-005		1.3500e-003	1.3500e-003		1.2500e-003	1.2500e-003	0.0000	5.3861	5.3861	1.7400e-003	0.0000	5.4297
Total	**3.2600e-003**	**0.0357**	**0.0245**	**6.0000e-005**	**3.9800e-003**	**1.3500e-003**	**5.3300e-003**	**4.3000e-004**	**1.2500e-003**	**1.6800e-003**	**0.0000**	**5.3861**	**5.3861**	**1.7400e-003**	**0.0000**	**5.4297**

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	7.0000e-005	4.0000e-005	5.6000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1324	0.1324	0.0000	0.0000	0.1337
Total	**7.0000e-005**	**4.0000e-005**	**5.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1324**	**0.1324**	**0.0000**	**0.0000**	**0.1337**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.9800e-003	0.0000	3.9800e-003	4.3000e-004	0.0000	4.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-004	3.2600e-003	0.0297	6.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	5.3861	5.3861	1.7400e-003	0.0000	5.4296
Total	**7.5000e-004**	**3.2600e-003**	**0.0297**	**6.0000e-005**	**3.9800e-003**	**1.0000e-004**	**4.0800e-003**	**4.3000e-004**	**1.0000e-004**	**5.3000e-004**	**0.0000**	**5.3861**	**5.3861**	**1.7400e-003**	**0.0000**	**5.4296**

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	7.0000e-005	4.0000e-005	5.6000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1324	0.1324	0.0000	0.0000	0.1337
Total	**7.0000e-005**	**4.0000e-005**	**5.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1324**	**0.1324**	**0.0000**	**0.0000**	**0.1337**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0361	0.0000	0.0361	0.0172	0.0000	0.0172	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6700e-003	0.0723	0.0435	1.0000e-004		3.0200e-003	3.0200e-003		2.7800e-003	2.7800e-003	0.0000	9.0520	9.0520	2.9300e-003	0.0000	9.1252
Total	**6.6700e-003**	**0.0723**	**0.0435**	**1.0000e-004**	**0.0361**	**3.0200e-003**	**0.0391**	**0.0172**	**2.7800e-003**	**0.0200**	**0.0000**	**9.0520**	**9.0520**	**2.9300e-003**	**0.0000**	**9.1252**

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	1.1600e-003	0.0672	0.0145	3.2000e-004	9.3100e-003	6.5000e-004	9.9600e-003	2.5600e-003	6.2000e-004	3.1900e-003	0.0000	30.4353	30.4353	6.0000e-005	4.7800e-003	31.8626
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.1000e-004	1.3900e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3310	0.3310	1.0000e-005	1.0000e-005	0.3342
Total	**1.3300e-003**	**0.0673**	**0.0159**	**3.2000e-004**	**9.7100e-003**	**6.5000e-004**	**0.0104**	**2.6700e-003**	**6.2000e-004**	**3.3000e-003**	**0.0000**	**30.7662**	**30.7662**	**7.0000e-005**	**4.7900e-003**	**32.1967**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0361	0.0000	0.0361	0.0172	0.0000	0.0172	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2600e-003	5.4600e-003	0.0545	1.0000e-004		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	9.0520	9.0520	2.9300e-003	0.0000	9.1251
Total	**1.2600e-003**	**5.4600e-003**	**0.0545**	**1.0000e-004**	**0.0361**	**1.7000e-004**	**0.0363**	**0.0172**	**1.7000e-004**	**0.0174**	**0.0000**	**9.0520**	**9.0520**	**2.9300e-003**	**0.0000**	**9.1251**

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	1.1600e-003	0.0672	0.0145	3.2000e-004	9.3100e-003	6.5000e-004	9.9600e-003	2.5600e-003	6.2000e-004	3.1900e-003	0.0000	30.4353	30.4353	6.0000e-005	4.7800e-003	31.8626
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.1000e-004	1.3900e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3310	0.3310	1.0000e-005	1.0000e-005	0.3342
Total	**1.3300e-003**	**0.0673**	**0.0159**	**3.2000e-004**	**9.7100e-003**	**6.5000e-004**	**0.0104**	**2.6700e-003**	**6.2000e-004**	**3.3000e-003**	**0.0000**	**30.7662**	**30.7662**	**7.0000e-005**	**4.7900e-003**	**32.1967**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice - 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	0.1448	1.1512	1.2011	2.1100e-003		0.0519	0.0519		0.0497	0.0497	0.0000	175.5082	175.5082	0.0332	0.0000	176.3380
Total	**0.1448**	**1.1512**	**1.2011**	**2.1100e-003**		**0.0519**	**0.0519**		**0.0497**	**0.0497**	**0.0000**	**175.5082**	**175.5082**	**0.0332**	**0.0000**	**176.3380**

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	1.5200e-003	0.0560	0.0189	2.6000e-004	8.3800e-003	3.7000e-004	8.7500e-003	2.4200e-003	3.5000e-004	2.7700e-003	0.0000	24.7951	24.7951	9.0000e-005	3.6200e-003	25.8774
Worker	0.0104	6.8400e-003	0.0847	2.2000e-004	0.0242	1.5000e-004	0.0244	6.4400e-003	1.3000e-004	6.5800e-003	0.0000	20.1348	20.1348	6.7000e-004	6.0000e-004	20.3303
Total	**0.0119**	**0.0628**	**0.1036**	**4.8000e-004**	**0.0326**	**5.2000e-004**	**0.0331**	**8.8600e-003**	**4.8000e-004**	**9.3500e-003**	**0.0000**	**44.9300**	**44.9300**	**7.6000e-004**	**4.2200e-003**	**46.2077**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0279	0.3271	1.2621	2.1100e-003		2.9700e-003	2.9700e-003		2.9700e-003	2.9700e-003	0.0000	175.5080	175.5080	0.0332	0.0000	176.3378
Total	**0.0279**	**0.3271**	**1.2621**	**2.1100e-003**		**2.9700e-003**	**2.9700e-003**		**2.9700e-003**	**2.9700e-003**	**0.0000**	**175.5080**	**175.5080**	**0.0332**	**0.0000**	**176.3378**

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	1.5200e-003	0.0560	0.0189	2.6000e-004	8.3800e-003	3.7000e-004	8.7500e-003	2.4200e-003	3.5000e-004	2.7700e-003	0.0000	24.7951	24.7951	9.0000e-005	3.6200e-003	25.8774
Worker	0.0104	6.8400e-003	0.0847	2.2000e-004	0.0242	1.5000e-004	0.0244	6.4400e-003	1.3000e-004	6.5800e-003	0.0000	20.1348	20.1348	6.7000e-004	6.0000e-004	20.3303
Total	**0.0119**	**0.0628**	**0.1036**	**4.8000e-004**	**0.0326**	**5.2000e-004**	**0.0331**	**8.8600e-003**	**4.8000e-004**	**9.3500e-003**	**0.0000**	**44.9300**	**44.9300**	**7.6000e-004**	**4.2200e-003**	**46.2077**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0799	0.6412	0.7050	1.2500e-003		0.0269	0.0269		0.0258	0.0258	0.0000	103.8570	103.8570	0.0193	0.0000	104.3406
Total	**0.0799**	**0.6412**	**0.7050**	**1.2500e-003**		**0.0269**	**0.0269**		**0.0258**	**0.0258**	**0.0000**	**103.8570**	**103.8570**	**0.0193**	**0.0000**	**104.3406**

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	8.6000e-004	0.0331	0.0107	1.5000e-004	4.9600e-003	2.2000e-004	5.1800e-003	1.4300e-003	2.1000e-004	1.6400e-003	0.0000	14.4472	14.4472	5.0000e-005	2.1100e-003	15.0769
Worker	5.6900e-003	3.5800e-003	0.0469	1.3000e-004	0.0143	8.0000e-005	0.0144	3.8100e-003	8.0000e-005	3.8900e-003	0.0000	11.6225	11.6225	3.6000e-004	3.3000e-004	11.7296
Total	**6.5500e-003**	**0.0367**	**0.0576**	**2.8000e-004**	**0.0193**	**3.0000e-004**	**0.0196**	**5.2400e-003**	**2.9000e-004**	**5.5300e-003**	**0.0000**	**26.0697**	**26.0697**	**4.1000e-004**	**2.4400e-003**	**26.8065**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - Coffee Shop/Market/FuelStation/MedicalOffice - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0165	0.1935	0.7468	1.2500e-003		1.7600e-003	1.7600e-003		1.7600e-003	1.7600e-003	0.0000	103.8568	103.8568	0.0193	0.0000	104.3404
Total	**0.0165**	**0.1935**	**0.7468**	**1.2500e-003**		**1.7600e-003**	**1.7600e-003**		**1.7600e-003**	**1.7600e-003**	**0.0000**	**103.8568**	**103.8568**	**0.0193**	**0.0000**	**104.3404**

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	8.6000e-004	0.0331	0.0107	1.5000e-004	4.9600e-003	2.2000e-004	5.1800e-003	1.4300e-003	2.1000e-004	1.6400e-003	0.0000	14.4472	14.4472	5.0000e-005	2.1100e-003	15.0769
Worker	5.6900e-003	3.5800e-003	0.0469	1.3000e-004	0.0143	8.0000e-005	0.0144	3.8100e-003	8.0000e-005	3.8900e-003	0.0000	11.6225	11.6225	3.6000e-004	3.3000e-004	11.7296
Total	**6.5500e-003**	**0.0367**	**0.0576**	**2.8000e-004**	**0.0193**	**3.0000e-004**	**0.0196**	**5.2400e-003**	**2.9000e-004**	**5.5300e-003**	**0.0000**	**26.0697**	**26.0697**	**4.1000e-004**	**2.4400e-003**	**26.8065**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Architectural Coating - Coffee Shop - 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	0.1759					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4000e-003	0.0163	0.0226	4.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	3.1916	3.1916	1.9000e-004	0.0000	3.1963
Total	**0.1783**	**0.0163**	**0.0226**	**4.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.9000e-004**	**8.9000e-004**	**0.0000**	**3.1916**	**3.1916**	**1.9000e-004**	**0.0000**	**3.1963**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.0000e-004	2.4400e-003	1.0000e-005	7.0000e-004	0.0000	7.0000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5792	0.5792	2.0000e-005	2.0000e-005	0.5848
Total	**3.0000e-004**	**2.0000e-004**	**2.4400e-003**	**1.0000e-005**	**7.0000e-004**	**0.0000**	**7.0000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5792**	**0.5792**	**2.0000e-005**	**2.0000e-005**	**0.5848**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Architectural Coating - Coffee Shop - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1759					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7000e-004	1.6100e-003	0.0229	4.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	3.1916	3.1916	1.9000e-004	0.0000	3.1963
Total	**0.1763**	**1.6100e-003**	**0.0229**	**4.0000e-005**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**3.1916**	**3.1916**	**1.9000e-004**	**0.0000**	**3.1963**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.0000e-004	2.4400e-003	1.0000e-005	7.0000e-004	0.0000	7.0000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5792	0.5792	2.0000e-005	2.0000e-005	0.5848
Total	**3.0000e-004**	**2.0000e-004**	**2.4400e-003**	**1.0000e-005**	**7.0000e-004**	**0.0000**	**7.0000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5792**	**0.5792**	**2.0000e-005**	**2.0000e-005**	**0.5848**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 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	4.4000e-003	0.0431	0.0584	9.0000e-005		2.1700e-003	2.1700e-003		2.0000e-003	2.0000e-003	0.0000	7.7564	7.7564	2.4600e-003	0.0000	7.8179
Paving	1.9500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.3500e-003**	**0.0431**	**0.0584**	**9.0000e-005**		**2.1700e-003**	**2.1700e-003**		**2.0000e-003**	**2.0000e-003**	**0.0000**	**7.7564**	**7.7564**	**2.4600e-003**	**0.0000**	**7.8179**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	1.7000e-004	2.0900e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4964	0.4964	2.0000e-005	1.0000e-005	0.5012
Total	**2.6000e-004**	**1.7000e-004**	**2.0900e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4964**	**0.4964**	**2.0000e-005**	**1.0000e-005**	**0.5012**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.3500e-003	6.4000e-003	0.0664	9.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	7.7564	7.7564	2.4600e-003	0.0000	7.8178
Paving	1.9500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.3000e-003**	**6.4000e-003**	**0.0664**	**9.0000e-005**		**2.1000e-004**	**2.1000e-004**		**2.1000e-004**	**2.1000e-004**	**0.0000**	**7.7564**	**7.7564**	**2.4600e-003**	**0.0000**	**7.8178**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	1.7000e-004	2.0900e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4964	0.4964	2.0000e-005	1.0000e-005	0.5012
Total	**2.6000e-004**	**1.7000e-004**	**2.0900e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4964**	**0.4964**	**2.0000e-005**	**1.0000e-005**	**0.5012**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - Medical Office/Market/FuelStation - 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	0.1432					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7100e-003	0.0456	0.0634	1.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003	0.0000	8.9364	8.9364	5.3000e-004	0.0000	8.9498
Total	**0.1499**	**0.0456**	**0.0634**	**1.0000e-004**		**2.4800e-003**	**2.4800e-003**		**2.4800e-003**	**2.4800e-003**	**0.0000**	**8.9364**	**8.9364**	**5.3000e-004**	**0.0000**	**8.9498**

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	8.4000e-004	5.5000e-004	6.8200e-003	2.0000e-005	1.9500e-003	1.0000e-005	1.9600e-003	5.2000e-004	1.0000e-005	5.3000e-004	0.0000	1.6216	1.6216	5.0000e-005	5.0000e-005	1.6374
Total	**8.4000e-004**	**5.5000e-004**	**6.8200e-003**	**2.0000e-005**	**1.9500e-003**	**1.0000e-005**	**1.9600e-003**	**5.2000e-004**	**1.0000e-005**	**5.3000e-004**	**0.0000**	**1.6216**	**1.6216**	**5.0000e-005**	**5.0000e-005**	**1.6374**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - Medical Office/Market/FuelStation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1432					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0400e-003	4.5100e-003	0.0641	1.0000e-004		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	8.9364	8.9364	5.3000e-004	0.0000	8.9497
Total	**0.1442**	**4.5100e-003**	**0.0641**	**1.0000e-004**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**	**0.0000**	**8.9364**	**8.9364**	**5.3000e-004**	**0.0000**	**8.9497**

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	8.4000e-004	5.5000e-004	6.8200e-003	2.0000e-005	1.9500e-003	1.0000e-005	1.9600e-003	5.2000e-004	1.0000e-005	5.3000e-004	0.0000	1.6216	1.6216	5.0000e-005	5.0000e-005	1.6374
Total	**8.4000e-004**	**5.5000e-004**	**6.8200e-003**	**2.0000e-005**	**1.9500e-003**	**1.0000e-005**	**1.9600e-003**	**5.2000e-004**	**1.0000e-005**	**5.3000e-004**	**0.0000**	**1.6216**	**1.6216**	**5.0000e-005**	**5.0000e-005**	**1.6374**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - Medical Office/Market/FuelStation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0327					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4500e-003	9.7500e-003	0.0145	2.0000e-005		4.9000e-004	4.9000e-004		4.9000e-004	4.9000e-004	0.0000	2.0426	2.0426	1.2000e-004	0.0000	2.0455
Total	**0.0342**	**9.7500e-003**	**0.0145**	**2.0000e-005**		**4.9000e-004**	**4.9000e-004**		**4.9000e-004**	**4.9000e-004**	**0.0000**	**2.0426**	**2.0426**	**1.2000e-004**	**0.0000**	**2.0455**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.1000e-004	1.4600e-003	0.0000	4.5000e-004	0.0000	4.5000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3616	0.3616	1.0000e-005	1.0000e-005	0.3649
Total	**1.8000e-004**	**1.1000e-004**	**1.4600e-003**	**0.0000**	**4.5000e-004**	**0.0000**	**4.5000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3616**	**0.3616**	**1.0000e-005**	**1.0000e-005**	**0.3649**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - Medical Office/Market/FuelStation - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0327					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4000e-004	1.0300e-003	0.0147	2.0000e-005		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	2.0426	2.0426	1.2000e-004	0.0000	2.0455
Total	**0.0330**	**1.0300e-003**	**0.0147**	**2.0000e-005**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**2.0426**	**2.0426**	**1.2000e-004**	**0.0000**	**2.0455**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.1000e-004	1.4600e-003	0.0000	4.5000e-004	0.0000	4.5000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3616	0.3616	1.0000e-005	1.0000e-005	0.3649
Total	**1.8000e-004**	**1.1000e-004**	**1.4600e-003**	**0.0000**	**4.5000e-004**	**0.0000**	**4.5000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3616**	**0.3616**	**1.0000e-005**	**1.0000e-005**	**0.3649**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.9494	2.7078	14.1996	0.0273	2.4237	0.0284	2.4522	0.6494	0.0267	0.6761	0.0000	2,528.2626	2,528.2626	0.1869	0.1656	2,582.2869
Unmitigated	1.9494	2.7078	14.1996	0.0273	2.4237	0.0284	2.4522	0.6494	0.0267	0.6761	0.0000	2,528.2626	2,528.2626	0.1869	0.1656	2,582.2869

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market (24 hour)	0.00	0.00	0.00		
Fast Food Restaurant with Drive Thru	1,103.21	1,368.59	1042.92	1,681,652	1,681,652
Gasoline/Service Station	3,034.32	3,446.10	1383.36	4,240,259	4,240,259
Medical Office Building	442.67	169.41	13.73	549,604	549,604
Parking Lot	0.00	0.00	0.00		
Total	4,580.20	4,984.10	2,440.01	6,471,514	6,471,514

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
Convenience Market (24 hour)	9.50	7.30	7.30	0.90	80.10	19.00	24	15	61
Fast Food Restaurant with Drive	9.50	7.30	7.30	2.20	78.80	19.00	54.9	0	45.1

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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
Gasoline/Service Station	9.50	7.30	7.30	2.00	79.00	19.00	54.9	0	45.1
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	54.9	0	45.1
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market (24 hour)	0.500104	0.052860	0.172660	0.158983	0.033384	0.008488	0.010945	0.028437	0.000810	0.000210	0.026444	0.001975	0.004700
Fast Food Restaurant with Drive Thru	0.500104	0.052860	0.172660	0.158983	0.033384	0.008488	0.010945	0.028437	0.000810	0.000210	0.026444	0.001975	0.004700
Gasoline/Service Station	0.500104	0.052860	0.172660	0.158983	0.033384	0.008488	0.010945	0.028437	0.000810	0.000210	0.026444	0.001975	0.004700
Medical Office Building	0.500104	0.052860	0.172660	0.158983	0.033384	0.008488	0.010945	0.028437	0.000810	0.000210	0.026444	0.001975	0.004700
Parking Lot	0.500104	0.052860	0.172660	0.158983	0.033384	0.008488	0.010945	0.028437	0.000810	0.000210	0.026444	0.001975	0.004700

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Madera Ranchos_Mitigated - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	24.8291	24.8291	4.0200e-003	4.9000e-004	25.0746
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	24.8291	24.8291	4.0200e-003	4.9000e-004	25.0746
NaturalGas Mitigated	3.9600e-003	0.0360	0.0303	2.2000e-004		2.7400e-003	2.7400e-003		2.7400e-003	2.7400e-003	0.0000	39.2184	39.2184	7.5000e-004	7.2000e-004	39.4514
NaturalGas Unmitigated	3.9600e-003	0.0360	0.0303	2.2000e-004		2.7400e-003	2.7400e-003		2.7400e-003	2.7400e-003	0.0000	39.2184	39.2184	7.5000e-004	7.2000e-004	39.4514

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Convenience Market (24 hour)	43501	2.3000e-004	2.1300e-003	1.7900e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	2.3214	2.3214	4.0000e-005	4.0000e-005	2.3352
Fast Food Restaurant with Drive Thru	465283	2.5100e-003	0.0228	0.0192	1.4000e-004		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	24.8293	24.8293	4.8000e-004	4.6000e-004	24.9768
Gasoline/Service Station	17533.9	9.0000e-005	8.6000e-004	7.2000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9357	0.9357	2.0000e-005	2.0000e-005	0.9412
Medical Office Building	208606	1.1200e-003	0.0102	8.5900e-003	6.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	11.1320	11.1320	2.1000e-004	2.0000e-004	11.1982
Parking Lot	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
Total		**3.9500e-003**	**0.0360**	**0.0303**	**2.2000e-004**		**2.7400e-003**	**2.7400e-003**		**2.7400e-003**	**2.7400e-003**	**0.0000**	**39.2184**	**39.2184**	**7.5000e-004**	**7.2000e-004**	**39.4514**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Convenience Market (24 hour)	43501	2.3000e-004	2.1300e-003	1.7900e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	2.3214	2.3214	4.0000e-005	4.0000e-005	2.3352
Fast Food Restaurant with Drive Thru	465283	2.5100e-003	0.0228	0.0192	1.4000e-004		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	24.8293	24.8293	4.8000e-004	4.6000e-004	24.9768
Gasoline/Service Station	17533.9	9.0000e-005	8.6000e-004	7.2000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9357	0.9357	2.0000e-005	2.0000e-005	0.9412
Medical Office Building	208606	1.1200e-003	0.0102	8.5900e-003	6.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	11.1320	11.1320	2.1000e-004	2.0000e-004	11.1982
Parking Lot	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
Total		**3.9500e-003**	**0.0360**	**0.0303**	**2.2000e-004**		**2.7400e-003**	**2.7400e-003**		**2.7400e-003**	**2.7400e-003**	**0.0000**	**39.2184**	**39.2184**	**7.5000e-004**	**7.2000e-004**	**39.4514**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market (24 hour)	32472	3.0044	4.9000e-004	6.0000e-005	3.0341
Fast Food Restaurant with Drive Thru	62618.1	5.7937	9.4000e-004	1.1000e-004	5.8510
Gasoline/Service Station	7293.1	0.6748	1.1000e-004	1.0000e-005	0.6815
Medical Office Building	142731	13.2060	2.1400e-003	2.6000e-004	13.3366
Parking Lot	23240	2.1503	3.5000e-004	4.0000e-005	2.1715
Total		**24.8291**	**4.0300e-003**	**4.8000e-004**	**25.0746**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market (24 hour)	32472	3.0044	4.9000e-004	6.0000e-005	3.0341
Fast Food Restaurant with Drive Thru	62618.1	5.7937	9.4000e-004	1.1000e-004	5.8510
Gasoline/Service Station	7293.1	0.6748	1.1000e-004	1.0000e-005	0.6815
Medical Office Building	142731	13.2060	2.1400e-003	2.6000e-004	13.3366
Parking Lot	23240	2.1503	3.5000e-004	4.0000e-005	2.1715
Total		**24.8291**	**4.0300e-003**	**4.8000e-004**	**25.0746**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1131	2.0000e-005	1.7800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4700e-003	3.4700e-003	1.0000e-005	0.0000	3.7000e-003
Unmitigated	0.1131	2.0000e-005	1.7800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4700e-003	3.4700e-003	1.0000e-005	0.0000	3.7000e-003

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	0.0176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0953					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4700e-003	3.4700e-003	1.0000e-005	0.0000	3.7000e-003
Total	**0.1131**	**2.0000e-005**	**1.7800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.4700e-003**	**3.4700e-003**	**1.0000e-005**	**0.0000**	**3.7000e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0953					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4700e-003	3.4700e-003	1.0000e-005	0.0000	3.7000e-003
Total	**0.1131**	**2.0000e-005**	**1.7800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.4700e-003**	**3.4700e-003**	**1.0000e-005**	**0.0000**	**3.7000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.7347	0.1007	2.4000e-003	5.9680
Unmitigated	2.7347	0.1007	2.4000e-003	5.9680

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market (24 hour)	0.303697 / 0.186137	0.3087	9.9300e-003	2.4000e-004	0.6278
Fast Food Restaurant with Drive Thru	0.670809 / 0.0428176	0.5625	0.0219	5.2000e-004	1.2662
Gasoline/Service Station	0.0796913 / 0.0488431	0.0810	2.6100e-003	6.0000e-005	0.1647
Medical Office Building	2.02651 / 0.386002	1.7825	0.0662	1.5800e-003	3.9092
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.7347**	**0.1007**	**2.4000e-003**	**5.9680**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market (24 hour)	0.303697 / 0.186137	0.3087	9.9300e-003	2.4000e-004	0.6278
Fast Food Restaurant with Drive Thru	0.670809 / 0.0428176	0.5625	0.0219	5.2000e-004	1.2662
Gasoline/Service Station	0.0796913 / 0.0488431	0.0810	2.6100e-003	6.0000e-005	0.1647
Medical Office Building	2.02651 / 0.386002	1.7825	0.0662	1.5800e-003	3.9092
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.7347**	**0.1007**	**2.4000e-003**	**5.9680**

8.0 Waste Detail

8.1 Mitigation Measures Waste

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	43.7303	2.5844	0.0000	108.3401
Unmitigated	43.7303	2.5844	0.0000	108.3401

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Convenience Market (24 hour)	12.32	2.5009	0.1478	0.0000	6.1958
Fast Food Restaurant with Drive Thru	25.46	5.1682	0.3054	0.0000	12.8039
Gasoline/Service Station	3.23	0.6557	0.0388	0.0000	1.6244
Medical Office Building	174.42	35.4057	2.0924	0.0000	87.7161
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**43.7303**	**2.5844**	**0.0000**	**108.3401**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Convenience Market (24 hour)	12.32	2.5009	0.1478	0.0000	6.1958
Fast Food Restaurant with Drive Thru	25.46	5.1682	0.3054	0.0000	12.8039
Gasoline/Service Station	3.23	0.6557	0.0388	0.0000	1.6244
Medical Office Building	174.42	35.4057	2.0924	0.0000	87.7161
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**43.7303**	**2.5844**	**0.0000**	**108.3401**

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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B

HEALTH RISK CALCULATIONS AND AERMOD OUTPUT FILES

AERMOD OUTPUT FILES – CONSTRUCTION (UNMITIGATED)

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.0.0
** Lakes Environmental Software Inc.
** Date: 2/7/2023
** File: C:\Lakes\AERMOD View\MaderaRanchosLegacy\MaderaRanchosLegacy.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\MaderaRanchosLegacy\MaderaRanchosLegacy.isc
   MODELOPT DFAULT CONC
   AVERTIME 1 ANNUAL
   POLLUTID PM_10
   RUNORNOT RUN
   ERRORFIL MaderaRanchosLegacy.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION PAREA1       AREAPOLY   244405.580  4090173.140      103.880
** DESCRSRC Project Site
** Source Parameters **
   SRCPARAM PAREA1       1.2259E-07     3.000         4
   AREAVERT PAREA1       244405.580 4090173.140 244545.220 4090169.250
   AREAVERT PAREA1       244539.470 4090025.830 244401.690 4090034.120
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
   INCLUDED MaderaRanchosLegacy.rou
```

```
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE "C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.SFC"
   PROFFILE "C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.PFL"
   SURFDATA 93242 2015
   UAIRDATA 23230 2015 OAKLAND/WSO_AP
   PROFBASE 889.11 FEET
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST MaderaRanchosLegacy.AD\01H1GALL.PLT 31
   PLOTFILE ANNUAL ALL MaderaRanchosLegacy.AD\AN00GALL.PLT 32
   SUMMFILE MaderaRanchosLegacy.sum
OU FINISHED
**
**************************************
** Project Parameters
**************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
```

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**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.0.0
** Lakes Environmental Software Inc.
** Date: 2/7/2023
** File: C:\Lakes\AERMOD View\MaderaRanchosLegacy\MaderaRanchosLegacy.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\MaderaRanchosLegacy\MaderaRanchosLegacy.isc
   MODELOPT DFAULT CONC
   AVERTIME 1 ANNUAL
   POLLUTID PM_10
   RUNORNOT RUN
   ERRORFIL MaderaRanchosLegacy.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION PAREA1       AREAPOLY   244405.580  4090173.140      103.880
** DESCRSRC Project Site
** Source Parameters **
   SRCPARAM PAREA1       1.2259E-07     3.000         4
   AREAVERT PAREA1       244405.580 4090173.140 244545.220 4090169.250
   AREAVERT PAREA1       244539.470 4090025.830 244401.690 4090034.120
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
   INCLUDED MaderaRanchosLegacy.rou
```

```
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE "C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.SFC"
   PROFFILE "C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.PFL"
   SURFDATA 93242 2015
   UAIRDATA 23230 2015 OAKLAND/WSO_AP
   PROFBASE 889.11 FEET
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST MaderaRanchosLegacy.AD\01H1GALL.PLT 31
   PLOTFILE ANNUAL ALL MaderaRanchosLegacy.AD\AN00GALL.PLT 32
   SUMMFILE MaderaRanchosLegacy.sum
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

 ---------  Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186      64       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187      64       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


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```
 *** SETUP Finishes Successfully ***
 ***********************************

  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchosLegacy\MaderaRanchosLegacy.isc     ***        02/07/23
 *** AERMET - VERSION  18081 ***   ***
                        ***        06:41:28

                                   PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                          ***     MODEL SETUP OPTIONS SUMMARY
  ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

  --   DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.

 **Other Options Specified:
        ADJ_U*  -  Use ADJ_U* option for SBL in AERMET
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_10

 **Model Calculates  1 Short Term Average(s) of:   1-HR
     and Calculates ANNUAL Averages

 **This Run Includes:      1 Source(s);       1 Source Group(s); and      19
Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
```

```
                and:      0 VOLUME source(s)
                and:      1 AREA type source(s)
                and:      0 LINE source(s)
                and:      0 RLINE/RLINEXT source(s)
                and:      0 OPENPIT source(s)
                and:      0 BUOYANT LINE source(s) with a total of     0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  18081

 **Output Options Selected:
         Model Outputs Tables of ANNUAL Averages by Receptor
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE
Keyword)
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing
Hours
                                                                 b for Both Calm
and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   271.00 ;  Decay
Coef. =    0.000     ;  Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                                 ;
Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.

 **Input Runstream File:          aermod.inp

 **Output Print File:             aermod.out


 **Detailed Error/Message File:   MaderaRanchosLegacy.err

 **File for Summary of Results:   MaderaRanchosLegacy.sum

  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchosLegacy\MaderaRanchosLegacy.isc     ***        02/07/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        06:41:28

                                  PAGE   2
```

*** AREAPOLY SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	LOCATION OF AREA X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	NUMBER OF VERTS.	INIT. SZ SOURCE SCALAR	URBAN SOURCE VARY BY
PAREA1	0	0.12259E-06	244405.6	4090173.1	103.9	3.00	4	0.00	NO

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	PAREA1 ,

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(244145.9, 4090086.1, 103.6, 103.6, 0.0); (244128.1, 4090026.6, 103.6, 103.6, 0.0);
(244139.2, 4090005.2, 103.6, 103.6, 0.0); (244141.9, 4089962.7, 103.6, 103.6, 0.0);
(244202.0, 4089862.6, 103.6, 103.6, 0.0); (244208.8,

4089912.2,   103.6,   103.6,   0.0);
     (244205.5, 4089961.2,   103.6,   103.6,   0.0);   (244199.0,
4090007.3,   103.6,   103.6,   0.0);
     (244212.3, 4090073.3,   103.6,   103.6,   0.0);   (244369.7,
4090147.9,   103.9,   103.9,   0.0);
     (244372.4, 4090113.4,   103.8,   103.8,   0.0);   (244369.3,
4090069.9,   103.6,   103.6,   0.0);
     (244369.7, 4090029.4,   103.6,   103.6,   0.0);   (244357.3,
4089985.2,   103.9,   103.9,   0.0);
     (244359.9, 4089947.5,   104.0,   104.0,   0.0);   (244368.3,
4089907.8,   104.5,   104.5,   0.0);
     (244431.9, 4090008.4,   103.6,   103.6,   0.0);   (244432.0,
4089966.8,   103.7,   103.7,   0.0);
     (244432.4, 4089909.6,   104.7,   104.7,   0.0);

  *** AERMOD - VERSION 21112 ***   *** C:\Lakes\AERMOD
View\MaderaRanchosLegacy\MaderaRanchosLegacy.isc   ***   02/07/23
 *** AERMET - VERSION 18081 ***   ***
                       ***   06:41:28

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 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                                          *** METEOROLOGICAL DAYS SELECTED FOR
PROCESSING ***
                                                                (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

                NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON
WHAT IS INCLUDED IN THE DATA FILE.

                                       *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED
CATEGORIES ***

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                                   *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL
DATA ***

   Surface file: C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.SFC
                 Met Version: 18081
   Profile file: C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.PFL

   Surface format: FREE

   Profile format: FREE

   Surface station no.:   93242   Upper air station no.:   23230
                 Name: UNKNOWN   Name:
OAKLAND/WSO_AP
                 Year: 2015   Year: 2015

 First 24 hours of scalar data
 YR MO DY JDY HR   H0   U*   W* DT/DZ ZICNV ZIMCH M-O LEN   Z0 BOWEN
ALBEDO REF WS   WD   HT REF TA   HT
- -
- - - - - - - - - - - - - - - - - - -
 15 01 01   1 01 - 13.2 0.151 -9.000 -9.000 -999. 141.   25.1 0.04   0.81
1.00   2.28   83.   10.0 273.8   2.0
 15 01 01   1 02 - 19.2 0.186 -9.000 -9.000 -999. 192.   37.9 0.04   0.81
1.00   2.76   83.   10.0 273.1   2.0
 15 01 01   1 03 - 19.8 0.191 -9.000 -9.000 -999. 200.   40.0 0.04   0.81
1.00   2.83   83.   10.0 272.5   2.0
 15 01 01   1 04 - 20.9 0.201 -9.000 -9.000 -999. 217.   44.6 0.04   0.81
1.00   3.01   90.   10.0 272.0   2.0
 15 01 01   1 05 - 9.9 0.130 -9.000 -9.000 -999. 114.   20.1 0.04   0.81
1.00   1.99   66.   10.0 272.5   2.0
 15 01 01   1 06 - 4.1 0.085 -9.000 -9.000 -999.   60.   13.5 0.06   0.81
1.00   1.21   27.   10.0 270.4   2.0
 15 01 01   1 07 - 3.5 0.076 -9.000 -9.000 -999.   50.   11.4 0.02   0.81
1.00   1.26 272.   10.0 270.9   2.0
 15 01 01   1 08 - 3.8 0.082 -9.000 -9.000 -999.   57.   13.1 0.05   0.81
0.67   1.21 141.   10.0 271.4   2.0
 15 01 01   1 09   4.0 0.117 0.159 0.010   36.   96.   - 36.6 0.04   0.81

```
0.37    1.48  102.   10.0  275.4    2.0
 15 01 01   1 10   46.6  0.198  0.780  0.010  368.  212.   - 15.1  0.04   0.81
0.26    2.30   80.   10.0  278.8    2.0
 15 01 01   1 11   77.9  0.206  0.951  0.009  399.  225.   - 10.2  0.04   0.81
0.23    2.30   89.   10.0  280.9    2.0
 15 01 01   1 12   94.6  0.164  1.043  0.007  433.  159.   -  4.2  0.04   0.81
0.21    1.65  111.   10.0  282.0    2.0
 15 01 01   1 13   95.8  0.180  1.109  0.006  514.  183.   -  5.5  0.04   0.81
0.21    1.88  118.   10.0  283.1    2.0
 15 01 01   1 14   81.5  0.168  1.070  0.005  541.  165.   -  5.2  0.05   0.81
0.22    1.65  142.   10.0  283.8    2.0
 15 01 01   1 15   52.4  0.141  0.933  0.005  559.  127.   -  4.8  0.04   0.81
0.26    1.45   95.   10.0  284.2    2.0
 15 01 01   1 16   11.1  0.178  0.558  0.005  562.  180.   - 45.5  0.04   0.81
0.35    2.20  153.   10.0  283.8    2.0
 15 01 01   1 17  - 10.7  0.144 -9.000 -9.000 -999.  131.     25.0  0.07   0.81
0.61    1.94  181.   10.0  282.5    2.0
 15 01 01   1 18  - 15.7  0.169 -9.000 -9.000 -999.  167.     31.4  0.06   0.81
1.00    2.36   17.   10.0  279.2    2.0
 15 01 01   1 19  - 15.8  0.169 -9.000 -9.000 -999.  167.     31.4  0.06   0.81
1.00    2.36   24.   10.0  278.8    2.0
 15 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.05   0.81
1.00    0.00    0.   10.0  275.4    2.0
 15 01 01   1 21 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.05   0.81
1.00    0.00    0.   10.0  274.9    2.0
 15 01 01   1 22  - 14.2  0.157 -9.000 -9.000 -999.  149.     27.1  0.04   0.81
1.00    2.36   62.   10.0  275.4    2.0
 15 01 01   1 23  - 20.0  0.193 -9.000 -9.000 -999.  203.     40.9  0.04   0.81
1.00    2.86   80.   10.0  273.8    2.0
 15 01 01   1 24  - 20.0  0.193 -9.000 -9.000 -999.  203.     40.9  0.04   0.81
1.00    2.86   80.   10.0  273.1    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 15 01 01 01   10.0 1   83.    2.28   273.8   99.0  - 99.00  - 99.00

 F indicates top of profile (=1) or below (=0)
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchosLegacy\MaderaRanchosLegacy.isc     ***        02/07/23
 *** AERMET - VERSION  18081 ***   ***
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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   3
YEARS FOR SOURCE GROUP: ALL      ***
                                    INCLUDING SOURCE(S):     PAREA1      ,
```

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
244145.94	4090086.13	0.04703	244128.11	4090026.63	0.04123
244139.18	4090005.24	0.04044	244141.90	4089962.66	0.03367
244202.02	4089862.57	0.02065	244208.76	4089912.18	0.02851
244205.47	4089961.18	0.04005	244198.99	4090007.34	0.05201
244212.30	4090073.29	0.06746	244369.73	4090147.94	0.22226
244372.41	4090113.39	0.27033	244369.26	4090069.88	0.25148
244369.71	4090029.43	0.18154	244357.33	4089985.24	0.08969
244359.92	4089947.53	0.06083	244368.33	4089907.82	0.04584
244431.92	4090008.37	0.23840	244432.01	4089966.78	0.11203
244432.38	4089909.62	0.06053			

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): PAREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)

```
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -
        244145.94   4090086.13        1.89837  (16021104)                244128.11
 4090026.63        2.01265  (15021608)
        244139.18   4090005.24        2.06517  (15021608)                244141.90
 4089962.66        2.04726  (15021108)
        244202.02   4089862.57        1.87935  (16020608)                244208.76
 4089912.18        1.86268  (17122402)
        244205.47   4089961.18        2.38432  (15021108)                244198.99
 4090007.34        2.33498  (15021608)
        244212.30   4090073.29        2.41939  (16020420)                244369.73
 4090147.94        4.73858  (16031705)
        244372.41   4090113.39        4.91086  (17042122)                244369.26
 4090069.88        5.17947  (17042122)
        244369.71   4090029.43        5.06028  (15120902)                244357.33
 4089985.24        4.27588  (16020608)
        244359.92   4089947.53        3.33828  (15121208)                244368.33
 4089907.82        2.77339  (15022522)
        244431.92   4090008.37        5.13409  (17010204)                244432.01
 4089966.78        4.02085  (16012721)
        244432.38   4089909.62        3.02342  (16020308)

  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
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 *** AERMET - VERSION  18081 ***   ***
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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                   *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS
AVERAGED OVER   3 YEARS ***


                                    ** CONC OF PM_10    IN MICROGRAMS/M**3
                **



                         NETWORK
GROUP ID                       AVERAGE CONC                RECEPTOR  (XR, YR,
ZELEV, ZHILL, ZFLAG)  OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - -

ALL       1ST HIGHEST VALUE IS       0.27033 AT (  244372.41,  4090113.39,
103.77,   103.77,    0.00)  DC
          2ND HIGHEST VALUE IS       0.25148 AT (  244369.26,  4090069.88,
103.63,   103.63,    0.00)  DC
          3RD HIGHEST VALUE IS       0.23840 AT (  244431.92,  4090008.37,
103.63,   103.63,    0.00)  DC
```

```
          4TH HIGHEST VALUE IS       0.22226 AT (  244369.73,  4090147.94,
103.94,   103.94,    0.00)  DC
          5TH HIGHEST VALUE IS       0.18154 AT (  244369.71,  4090029.43,
103.63,   103.63,    0.00)  DC
          6TH HIGHEST VALUE IS       0.11203 AT (  244432.01,  4089966.78,
103.70,   103.70,    0.00)  DC
          7TH HIGHEST VALUE IS       0.08969 AT (  244357.33,  4089985.24,
103.88,   103.88,    0.00)  DC
          8TH HIGHEST VALUE IS       0.06746 AT (  244212.30,  4090073.29,
103.63,   103.63,    0.00)  DC
          9TH HIGHEST VALUE IS       0.06083 AT (  244359.92,  4089947.53,
103.96,   103.96,    0.00)  DC
         10TH HIGHEST VALUE IS       0.06053 AT (  244432.38,  4089909.62,
104.70,   104.70,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchosLegacy\MaderaRanchosLegacy.isc     ***        02/07/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        06:41:28

                                   PAGE  10
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                                *** THE SUMMARY OF HIGHEST  1-HR
RESULTS ***


                                    ** CONC OF PM_10    IN MICROGRAMS/M**3
              **

                                                      DATE
                                         NETWORK
GROUP ID                           AVERAGE CONC     (YYMMDDHH)             RECEPTOR
(XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS       5.17947  ON 17042122: AT (  244369.26,
4090069.88,   103.63,   103.63,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
```

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of   0 Fatal Error Message(s)
 A Total of   2 Warning Message(s)
 A Total of   702 Informational Message(s)

 A Total of   26304 Hours Were Processed

 A Total of   129 Calm Hours Identified

 A Total of   573 Missing Hours Identified (2.18 Percent)

    ******** FATAL ERROR MESSAGES ********
               *** NONE ***

    ********   WARNING MESSAGES   ********
 ME W186   64   MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187   64   MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

    ****
    *** AERMOD Finishes Successfully ***
    ****

AERMOD OUTPUT FILES – CONSTRUCTION (MITIGATED)

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.0.0
** Lakes Environmental Software Inc.
** Date: 2/8/2023
** File: C:\Lakes\AERMOD View\MaderaRanchosLegacyMit\MaderaRanchosLegacyMit.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\MaderaRanchosLegacyMit\MaderaRanchosLegacyMit.i
   MODELOPT DFAULT CONC
   AVERTIME 1 ANNUAL
   POLLUTID PM_10
   RUNORNOT RUN
   ERRORFIL MaderaRanchosLegacyMit.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION PAREA1       AREAPOLY   244405.580  4090173.140      103.880
** DESCRSRC Project Site
** Source Parameters **
   SRCPARAM PAREA1       9.3792E-09     3.000         4
   AREAVERT PAREA1       244405.580 4090173.140 244545.220 4090169.250
   AREAVERT PAREA1       244539.470 4090025.830 244401.690 4090034.120
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
   INCLUDED MaderaRanchosLegacyMit.rou
```

```
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE "C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.SFC"
   PROFFILE "C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.PFL"
   SURFDATA 93242 2015
   UAIRDATA 23230 2015 OAKLAND/WSO_AP
   PROFBASE 889.11 FEET
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST MADERARANCHOSLEGACYMIT.AD\01H1GALL.PLT 31
   PLOTFILE ANNUAL ALL MADERARANCHOSLEGACYMIT.AD\AN00GALL.PLT 32
   SUMMFILE MaderaRanchosLegacyMit.sum
OU FINISHED
**
**************************************
** Project Parameters
**************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
```

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.0.0
** Lakes Environmental Software Inc.
** Date: 2/8/2023
** File: C:\Lakes\AERMOD View\MaderaRanchosLegacyMit\MaderaRanchosLegacyMit.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\MaderaRanchosLegacyMit\MaderaRanchosLegacyMit.i
   MODELOPT DFAULT CONC
   AVERTIME 1 ANNUAL
   POLLUTID PM_10
   RUNORNOT RUN
   ERRORFIL MaderaRanchosLegacyMit.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION PAREA1       AREAPOLY   244405.580  4090173.140      103.880
** DESCRSRC Project Site
** Source Parameters **
   SRCPARAM PAREA1       9.3792E-09     3.000         4
   AREAVERT PAREA1       244405.580 4090173.140 244545.220 4090169.250
   AREAVERT PAREA1       244539.470 4090025.830 244401.690 4090034.120
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
   INCLUDED MaderaRanchosLegacyMit.rou
```

```
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE "C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.SFC"
   PROFFILE "C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.PFL"
   SURFDATA 93242 2015
   UAIRDATA 23230 2015 OAKLAND/WSO_AP
   PROFBASE 889.11 FEET
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST MADERARANCHOSLEGACYMIT.AD\01H1GALL.PLT 31
   PLOTFILE ANNUAL ALL MADERARANCHOSLEGACYMIT.AD\AN00GALL.PLT 32
   SUMMFILE MaderaRanchosLegacyMit.sum
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

 ---------  Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186      64       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187      64       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


 *********************************
```

```
 *** SETUP Finishes Successfully ***
 ***********************************

  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchosLegacyMit\MaderaRanchosLegacyMit.i ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                        ***        19:54:45

                                   PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                          ***     MODEL SETUP OPTIONS SUMMARY
  ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

  --   DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.

 **Other Options Specified:
        ADJ_U*  -  Use ADJ_U* option for SBL in AERMET
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_10

 **Model Calculates  1 Short Term Average(s) of:   1-HR
     and Calculates ANNUAL Averages

 **This Run Includes:      1 Source(s);       1 Source Group(s); and      19
Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
```

```
                and:      0 VOLUME source(s)
                and:      1 AREA type source(s)
                and:      0 LINE source(s)
                and:      0 RLINE/RLINEXT source(s)
                and:      0 OPENPIT source(s)
                and:      0 BUOYANT LINE source(s) with a total of     0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  18081

 **Output Options Selected:
         Model Outputs Tables of ANNUAL Averages by Receptor
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE
Keyword)
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing
Hours
                                                                 b for Both Calm
and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   271.00 ;  Decay
Coef. =    0.000     ;  Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                                 ;
Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.

 **Input Runstream File:          aermod.inp

 **Output Print File:             aermod.out


 **Detailed Error/Message File:   MaderaRanchosLegacyMit.err

 **File for Summary of Results:   MaderaRanchosLegacyMit.sum

  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchosLegacyMit\MaderaRanchosLegacyMit.i ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        19:54:45

                                  PAGE   2
```

*** AREAPOLY SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	X (METERS)	Y (METERS)	ELEV. (METERS)	BASE HEIGHT (METERS)	RELEASE OF VERTS.	NUMBER INIT. SZ BY	URBAN SOURCE	EMISSION RATE SCALAR VARY
PAREA1	0	0.93792E-08	244405.6	4090173.1	103.9	3.00	4	0.00	NO	

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	PAREA1 ,

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(244145.9, 4090086.1, 103.6, 103.6, 0.0); (244128.1, 4090026.6, 103.6, 103.6, 0.0);
(244139.2, 4090005.2, 103.6, 103.6, 0.0); (244141.9, 4089962.7, 103.6, 103.6, 0.0);
(244202.0, 4089862.6, 103.6, 103.6, 0.0); (244208.8,

*** METEOROLOGICAL DAYS SELECTED FOR
PROCESSING ***

(1=YES; 0=NO)

```
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON
WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED
CATEGORIES ***

                                   *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL
DATA ***

   Surface file: C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.SFC
                 Met Version: 18081
   Profile file: C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.PFL

   Surface format: FREE

   Profile format: FREE

   Surface station no.:   93242   Upper air station no.:   23230
                 Name: UNKNOWN   Name:
OAKLAND/WSO_AP
                 Year: 2015   Year: 2015

 First 24 hours of scalar data
 YR MO DY JDY HR   H0   U*   W* DT/DZ ZICNV ZIMCH M-O LEN   Z0 BOWEN
ALBEDO REF WS   WD   HT REF TA   HT
- -
- - - - - - - - - - - - - - - - - - -
 15 01 01   1 01 - 13.2 0.151 -9.000 -9.000 -999. 141.   25.1 0.04   0.81
1.00   2.28   83.   10.0 273.8   2.0
 15 01 01   1 02 - 19.2 0.186 -9.000 -9.000 -999. 192.   37.9 0.04   0.81
1.00   2.76   83.   10.0 273.1   2.0
 15 01 01   1 03 - 19.8 0.191 -9.000 -9.000 -999. 200.   40.0 0.04   0.81
1.00   2.83   83.   10.0 272.5   2.0
 15 01 01   1 04 - 20.9 0.201 -9.000 -9.000 -999. 217.   44.6 0.04   0.81
1.00   3.01   90.   10.0 272.0   2.0
 15 01 01   1 05 - 9.9 0.130 -9.000 -9.000 -999. 114.   20.1 0.04   0.81
1.00   1.99   66.   10.0 272.5   2.0
 15 01 01   1 06 - 4.1 0.085 -9.000 -9.000 -999.   60.   13.5 0.06   0.81
1.00   1.21   27.   10.0 270.4   2.0
 15 01 01   1 07 - 3.5 0.076 -9.000 -9.000 -999.   50.   11.4 0.02   0.81
1.00   1.26 272.   10.0 270.9   2.0
 15 01 01   1 08 - 3.8 0.082 -9.000 -9.000 -999.   57.   13.1 0.05   0.81
0.67   1.21 141.   10.0 271.4   2.0
 15 01 01   1 09   4.0 0.117 0.159 0.010   36.   96.   - 36.6 0.04   0.81

```
0.37    1.48  102.   10.0  275.4    2.0
 15 01 01   1 10   46.6  0.198  0.780  0.010  368.  212.   - 15.1  0.04   0.81
0.26    2.30   80.   10.0  278.8    2.0
 15 01 01   1 11   77.9  0.206  0.951  0.009  399.  225.   - 10.2  0.04   0.81
0.23    2.30   89.   10.0  280.9    2.0
 15 01 01   1 12   94.6  0.164  1.043  0.007  433.  159.   -  4.2  0.04   0.81
0.21    1.65  111.   10.0  282.0    2.0
 15 01 01   1 13   95.8  0.180  1.109  0.006  514.  183.   -  5.5  0.04   0.81
0.21    1.88  118.   10.0  283.1    2.0
 15 01 01   1 14   81.5  0.168  1.070  0.005  541.  165.   -  5.2  0.05   0.81
0.22    1.65  142.   10.0  283.8    2.0
 15 01 01   1 15   52.4  0.141  0.933  0.005  559.  127.   -  4.8  0.04   0.81
0.26    1.45   95.   10.0  284.2    2.0
 15 01 01   1 16   11.1  0.178  0.558  0.005  562.  180.   - 45.5  0.04   0.81
0.35    2.20  153.   10.0  283.8    2.0
 15 01 01   1 17  - 10.7  0.144 -9.000 -9.000 -999.  131.     25.0  0.07   0.81
0.61    1.94  181.   10.0  282.5    2.0
 15 01 01   1 18  - 15.7  0.169 -9.000 -9.000 -999.  167.     31.4  0.06   0.81
1.00    2.36   17.   10.0  279.2    2.0
 15 01 01   1 19  - 15.8  0.169 -9.000 -9.000 -999.  167.     31.4  0.06   0.81
1.00    2.36   24.   10.0  278.8    2.0
 15 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.05   0.81
1.00    0.00    0.   10.0  275.4    2.0
 15 01 01   1 21 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.05   0.81
1.00    0.00    0.   10.0  274.9    2.0
 15 01 01   1 22  - 14.2  0.157 -9.000 -9.000 -999.  149.     27.1  0.04   0.81
1.00    2.36   62.   10.0  275.4    2.0
 15 01 01   1 23  - 20.0  0.193 -9.000 -9.000 -999.  203.     40.9  0.04   0.81
1.00    2.86   80.   10.0  273.8    2.0
 15 01 01   1 24  - 20.0  0.193 -9.000 -9.000 -999.  203.     40.9  0.04   0.81
1.00    2.86   80.   10.0  273.1    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 15 01 01 01   10.0 1   83.    2.28   273.8   99.0  - 99.00  - 99.00

 F indicates top of profile (=1) or below (=0)
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchosLegacyMit\MaderaRanchosLegacyMit.i ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        19:54:45

                                  PAGE   7
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   3
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     PAREA1      ,
```

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
244145.94	4090086.13	0.00360	244128.11	4090026.63	0.00315
244139.18	4090005.24	0.00309	244141.90	4089962.66	0.00258
244202.02	4089862.57	0.00158	244208.76	4089912.18	0.00218
244205.47	4089961.18	0.00306	244198.99	4090007.34	0.00398
244212.30	4090073.29	0.00516	244369.73	4090147.94	0.01700
244372.41	4090113.39	0.02068	244369.26	4090069.88	0.01924
244369.71	4090029.43	0.01389	244357.33	4089985.24	0.00686
244359.92	4089947.53	0.00465	244368.33	4089907.82	0.00351
244431.92	4090008.37	0.01824	244432.01	4089966.78	0.00857
244432.38	4089909.62	0.00463			

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): PAREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)

```
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -
       244145.94   4090086.13       0.14524  (16021104)               244128.11
 4090026.63       0.15399  (15021608)
       244139.18   4090005.24       0.15800  (15021608)               244141.90
 4089962.66       0.15663  (15021108)
       244202.02   4089862.57       0.14379  (16020608)               244208.76
 4089912.18       0.14251  (17122402)
       244205.47   4089961.18       0.18242  (15021108)               244198.99
 4090007.34       0.17865  (15021608)
       244212.30   4090073.29       0.18510  (16020420)               244369.73
 4090147.94       0.36254  (16031705)
       244372.41   4090113.39       0.37572  (17042122)               244369.26
 4090069.88       0.39627  (17042122)
       244369.71   4090029.43       0.38716  (15120902)               244357.33
 4089985.24       0.32714  (16020608)
       244359.92   4089947.53       0.25541  (15121208)               244368.33
 4089907.82       0.21219  (15022522)
       244431.92   4090008.37       0.39280  (17010204)               244432.01
 4089966.78       0.30763  (16012721)
       244432.38   4089909.62       0.23132  (16020308)

  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchosLegacyMit\MaderaRanchosLegacyMit.i ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                        ***        19:54:45

                                   PAGE   9
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                   *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS
AVERAGED OVER   3 YEARS ***


                                    ** CONC OF PM_10    IN MICROGRAMS/M**3
                **



                         NETWORK
GROUP ID                       AVERAGE CONC                RECEPTOR  (XR, YR,
ZELEV, ZHILL, ZFLAG)  OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - -

ALL       1ST HIGHEST VALUE IS       0.02068 AT (  244372.41,  4090113.39,
103.77,   103.77,    0.00)  DC
          2ND HIGHEST VALUE IS       0.01924 AT (  244369.26,  4090069.88,
103.63,   103.63,    0.00)  DC
          3RD HIGHEST VALUE IS       0.01824 AT (  244431.92,  4090008.37,
103.63,   103.63,    0.00)  DC
```

```
          4TH HIGHEST VALUE IS       0.01700 AT (  244369.73,  4090147.94,
103.94,   103.94,    0.00)  DC
          5TH HIGHEST VALUE IS       0.01389 AT (  244369.71,  4090029.43,
103.63,   103.63,    0.00)  DC
          6TH HIGHEST VALUE IS       0.00857 AT (  244432.01,  4089966.78,
103.70,   103.70,    0.00)  DC
          7TH HIGHEST VALUE IS       0.00686 AT (  244357.33,  4089985.24,
103.88,   103.88,    0.00)  DC
          8TH HIGHEST VALUE IS       0.00516 AT (  244212.30,  4090073.29,
103.63,   103.63,    0.00)  DC
          9TH HIGHEST VALUE IS       0.00465 AT (  244359.92,  4089947.53,
103.96,   103.96,    0.00)  DC
         10TH HIGHEST VALUE IS       0.00463 AT (  244432.38,  4089909.62,
104.70,   104.70,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchosLegacyMit\MaderaRanchosLegacyMit.i ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        19:54:45

                                  PAGE  10
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                                *** THE SUMMARY OF HIGHEST  1-HR
RESULTS ***


                                   ** CONC OF PM_10    IN MICROGRAMS/M**3
              **

                                                      DATE
                                        NETWORK
GROUP ID                           AVERAGE CONC     (YYMMDDHH)             RECEPTOR
(XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS       0.39627  ON 17042122: AT (  244369.26,
4090069.88,   103.63,   103.63,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
```

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

 --------- Summary of Total Messages --------

 A Total of   0 Fatal Error Message(s)
 A Total of   2 Warning Message(s)
 A Total of   702 Informational Message(s)

 A Total of   26304 Hours Were Processed

 A Total of   129 Calm Hours Identified

 A Total of   573 Missing Hours Identified (2.18 Percent)

    ******** FATAL ERROR MESSAGES ********
              *** NONE ***

    ********   WARNING MESSAGES   ********
 ME W186   64   MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187   64   MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

    ****
    *** AERMOD Finishes Successfully ***
    ****

AERMOD OUTPUT FILES – OPERATION (GAS STATION)

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.0.0
** Lakes Environmental Software Inc.
** Date: 2/8/2023
** File: C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operational.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\MaderaRanchos_Operational\MaderaRanchos_Operati
   MODELOPT DFAULT CONC
   AVERTIME 1 ANNUAL
   POLLUTID TOG
   RUNORNOT RUN
   ERRORFIL MaderaRanchos_Operational.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION PAREA1       AREAPOLY   244485.426  4090170.183      104.900
** DESCRSRC Project Site
** Source Parameters **
   SRCPARAM PAREA1       3.5611E-06     1.000         4
   AREAVERT PAREA1       244485.426 4090170.183 244544.197 4090168.564
   AREAVERT PAREA1       244541.777 4090108.860 244483.789 4090112.311
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
```

```
   INCLUDED MaderaRanchos_Operational.rou
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE "C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.SFC"
   PROFFILE "C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.PFL"
   SURFDATA 93242 2015
   UAIRDATA 23230 2015 OAKLAND/WSO_AP
   PROFBASE 889.11 FEET
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST MADERARANCHOS_OPERATIONAL.AD\01H1GALL.PLT 31
   PLOTFILE ANNUAL ALL MADERARANCHOS_OPERATIONAL.AD\AN00GALL.PLT 32
   SUMMFILE MaderaRanchos_Operational.sum
OU FINISHED
**
**************************************
** Project Parameters
**************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
```

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.0.0
** Lakes Environmental Software Inc.
** Date: 2/8/2023
** File: C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operational.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\MaderaRanchos_Operational\MaderaRanchos_Operati
   MODELOPT DFAULT CONC
   AVERTIME 1 ANNUAL
   POLLUTID TOG
   RUNORNOT RUN
   ERRORFIL MaderaRanchos_Operational.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION PAREA1       AREAPOLY   244485.426  4090170.183      104.900
** DESCRSRC Project Site
** Source Parameters **
   SRCPARAM PAREA1       3.5611E-06     1.000         4
   AREAVERT PAREA1       244485.426 4090170.183 244544.197 4090168.564
   AREAVERT PAREA1       244541.777 4090108.860 244483.789 4090112.311
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
```

```
   INCLUDED MaderaRanchos_Operational.rou
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE "C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.SFC"
   PROFFILE "C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.PFL"
   SURFDATA 93242 2015
   UAIRDATA 23230 2015 OAKLAND/WSO_AP
   PROFBASE 889.11 FEET
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST MADERARANCHOS_OPERATIONAL.AD\01H1GALL.PLT 31
   PLOTFILE ANNUAL ALL MADERARANCHOS_OPERATIONAL.AD\AN00GALL.PLT 32
   SUMMFILE MaderaRanchos_Operational.sum
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

 ---------  Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186      64       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187      64       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
```

```
 **********************************
 *** SETUP Finishes Successfully ***
 **********************************

  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        15:30:03

                                  PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                          ***     MODEL SETUP OPTIONS SUMMARY
  ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

  --   DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.

 **Other Options Specified:
        ADJ_U*  -  Use ADJ_U* option for SBL in AERMET
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  TOG

 **Model Calculates  1 Short Term Average(s) of:   1-HR
     and Calculates ANNUAL Averages

 **This Run Includes:      1 Source(s);       1 Source Group(s); and      19
Receptor(s)

                with:      0 POINT(s), including
```

```
                        0 POINTCAP(s) and      0 POINTHOR(s)
                and:    0 VOLUME source(s)
                and:    1 AREA type source(s)
                and:    0 LINE source(s)
                and:    0 RLINE/RLINEXT source(s)
                and:    0 OPENPIT source(s)
                and:    0 BUOYANT LINE source(s) with a total of     0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  18081

 **Output Options Selected:
         Model Outputs Tables of ANNUAL Averages by Receptor
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE
Keyword)
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing
Hours
                                                                 b for Both Calm
and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   271.00 ;  Decay
Coef. =    0.000     ;  Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                                ;
Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.

 **Input Runstream File:          aermod.inp

 **Output Print File:             aermod.out


 **Detailed Error/Message File:   MaderaRanchos_Operational.err

 **File for Summary of Results:   MaderaRanchos_Operational.sum

  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        15:30:03
```

*** AREAPOLY SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	LOCATION OF AREA X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	NUMBER OF VERTS.	INIT. SZ SOURCE SCALAR VARY BY	URBAN SOURCE
PAREA1	0	0.35611E-05	244485.4	4090170.2	104.9	1.00	4	0.00	NO

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	PAREA1 ,

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(244145.9, 4090086.1, 103.6, 103.6, 0.0); (244128.1, 4090026.6, 103.6, 103.6, 0.0);
(244139.2, 4090005.2, 103.6, 103.6, 0.0); (244141.9, 4089962.7, 103.6, 103.6, 0.0);

```
     ( 244202.0, 4089862.6,     103.6,     103.6,       0.0);         ( 244208.8,
4089912.2,     103.6,     103.6,       0.0);
     ( 244205.5, 4089961.2,     103.6,     103.6,       0.0);         ( 244199.0,
4090007.3,     103.6,     103.6,       0.0);
     ( 244212.3, 4090073.3,     103.6,     103.6,       0.0);         ( 244369.7,
4090147.9,     103.9,     103.9,       0.0);
     ( 244372.4, 4090113.4,     103.8,     103.8,       0.0);         ( 244369.3,
4090069.9,     103.6,     103.6,       0.0);
     ( 244369.7, 4090029.4,     103.6,     103.6,       0.0);         ( 244357.3,
4089985.2,     103.9,     103.9,       0.0);
     ( 244359.9, 4089947.5,     104.0,     104.0,       0.0);         ( 244368.3,
4089907.8,     104.5,     104.5,       0.0);
     ( 244431.9, 4090008.4,     103.6,     103.6,       0.0);         ( 244432.0,
4089966.8,     103.7,     103.7,       0.0);
     ( 244432.4, 4089909.6,     104.7,     104.7,       0.0);

  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                        ***        15:30:03

                                   PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                          *** METEOROLOGICAL DAYS SELECTED FOR
PROCESSING ***
                                                              (1=YES; 0=NO)

           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

               NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON
WHAT IS INCLUDED IN THE DATA FILE.


                                   *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED
```

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.SFC
Met Version: 18081
Profile file: C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 93242 Upper air station no.: 23230
Name: UNKNOWN Name:
OAKLAND/WSO_AP
Year: 2015 Year: 2015

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
15	01	01	1	01	-13.2	0.151	-9.000	-9.000	-999.	141.	25.1	0.04	0.81	1.00	2.28	83.	10.0	273.8	2.0
15	01	01	1	02	-19.2	0.186	-9.000	-9.000	-999.	192.	37.9	0.04	0.81	1.00	2.76	83.	10.0	273.1	2.0
15	01	01	1	03	-19.8	0.191	-9.000	-9.000	-999.	200.	40.0	0.04	0.81	1.00	2.83	83.	10.0	272.5	2.0
15	01	01	1	04	-20.9	0.201	-9.000	-9.000	-999.	217.	44.6	0.04	0.81	1.00	3.01	90.	10.0	272.0	2.0
15	01	01	1	05	-9.9	0.130	-9.000	-9.000	-999.	114.	20.1	0.04	0.81	1.00	1.99	66.	10.0	272.5	2.0
15	01	01	1	06	-4.1	0.085	-9.000	-9.000	-999.	60.	13.5	0.06	0.81	1.00	1.21	27.	10.0	270.4	2.0
15	01	01	1	07	-3.5	0.076	-9.000	-9.000	-999.	50.	11.4	0.02	0.81	1.00	1.26	272.	10.0	270.9	2.0
15	01	01	1	08	-3.8	0.082	-9.000	-9.000	-999.	57.	13.1	0.05	0.81	0.67	1.21	141.	10.0	271.4	2.0

```
 15 01 01   1 09    4.0  0.117  0.159  0.010   36.   96.   - 36.6  0.04   0.81
0.37    1.48  102.   10.0  275.4    2.0
 15 01 01   1 10   46.6  0.198  0.780  0.010  368.  212.   - 15.1  0.04   0.81
0.26    2.30   80.   10.0  278.8    2.0
 15 01 01   1 11   77.9  0.206  0.951  0.009  399.  225.   - 10.2  0.04   0.81
0.23    2.30   89.   10.0  280.9    2.0
 15 01 01   1 12   94.6  0.164  1.043  0.007  433.  159.   -  4.2  0.04   0.81
0.21    1.65  111.   10.0  282.0    2.0
 15 01 01   1 13   95.8  0.180  1.109  0.006  514.  183.   -  5.5  0.04   0.81
0.21    1.88  118.   10.0  283.1    2.0
 15 01 01   1 14   81.5  0.168  1.070  0.005  541.  165.   -  5.2  0.05   0.81
0.22    1.65  142.   10.0  283.8    2.0
 15 01 01   1 15   52.4  0.141  0.933  0.005  559.  127.   -  4.8  0.04   0.81
0.26    1.45   95.   10.0  284.2    2.0
 15 01 01   1 16   11.1  0.178  0.558  0.005  562.  180.   - 45.5  0.04   0.81
0.35    2.20  153.   10.0  283.8    2.0
 15 01 01   1 17  - 10.7  0.144 -9.000 -9.000 -999.  131.     25.0  0.07   0.81
0.61    1.94  181.   10.0  282.5    2.0
 15 01 01   1 18  - 15.7  0.169 -9.000 -9.000 -999.  167.     31.4  0.06   0.81
1.00    2.36   17.   10.0  279.2    2.0
 15 01 01   1 19  - 15.8  0.169 -9.000 -9.000 -999.  167.     31.4  0.06   0.81
1.00    2.36   24.   10.0  278.8    2.0
 15 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.05   0.81
1.00    0.00    0.   10.0  275.4    2.0
 15 01 01   1 21 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.05   0.81
1.00    0.00    0.   10.0  274.9    2.0
 15 01 01   1 22  - 14.2  0.157 -9.000 -9.000 -999.  149.     27.1  0.04   0.81
1.00    2.36   62.   10.0  275.4    2.0
 15 01 01   1 23  - 20.0  0.193 -9.000 -9.000 -999.  203.     40.9  0.04   0.81
1.00    2.86   80.   10.0  273.8    2.0
 15 01 01   1 24  - 20.0  0.193 -9.000 -9.000 -999.  203.     40.9  0.04   0.81
1.00    2.86   80.   10.0  273.1    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 15 01 01 01   10.0 1   83.    2.28   273.8   99.0  - 99.00  - 99.00

 F indicates top of profile (=1) or below (=0)
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                        ***        15:30:03

                                   PAGE   7
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   3
YEARS FOR SOURCE GROUP: ALL      ***
                                    INCLUDING SOURCE(S):     PAREA1      ,
```

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF TOG IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
244145.94	4090086.13	0.20802	244128.11	4090026.63	0.16237
244139.18	4090005.24	0.15231	244141.90	4089962.66	0.12489
244202.02	4089862.57	0.07555	244208.76	4089912.18	0.09732
244205.47	4089961.18	0.13717	244198.99	4090007.34	0.18340
244212.30	4090073.29	0.27160	244369.73	4090147.94	0.93438
244372.41	4090113.39	0.97973	244369.26	4090069.88	0.61169
244369.71	4090029.43	0.35321	244357.33	4089985.24	0.22009
244359.92	4089947.53	0.17424	244368.33	4089907.82	0.15034
244431.92	4090008.37	0.40161	244432.01	4089966.78	0.28878
244432.38	4089909.62	0.19490			

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): PAREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF TOG IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)

```
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -
        244145.94   4090086.13       14.45887  (17121918)                244128.11
 4090026.63       13.91460  (15021608)
        244139.18   4090005.24       13.21384  (16022501)                244141.90
 4089962.66       14.07653  (15021108)
        244202.02   4089862.57       12.27570  (16020608)                244208.76
 4089912.18       12.95893  (17120719)
        244205.47   4089961.18       15.22536  (15013001)                244198.99
 4090007.34       17.98985  (15021108)
        244212.30   4090073.29       20.25108  (15021608)                244369.73
 4090147.94       42.99002  (15013008)
        244372.41   4090113.39       43.86614  (15021608)                244369.26
 4090069.88       42.03797  (15021108)
        244369.71   4090029.43       30.80367  (16010807)                244357.33
 4089985.24       27.09804  (16020608)
        244359.92   4089947.53       23.12221  (15121208)                244368.33
 4089907.82       19.00954  (16122703)
        244431.92   4090008.37       36.42951  (17012821)                244432.01
 4089966.78       29.15582  (15121916)
        244432.38   4089909.62       22.03752  (16012024)

  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                        ***       15:30:03

                                   PAGE   9
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                   *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS
AVERAGED OVER   3 YEARS ***


                                    ** CONC OF TOG      IN MICROGRAMS/M**3
                **



                         NETWORK
GROUP ID                       AVERAGE CONC               RECEPTOR  (XR, YR,
ZELEV, ZHILL, ZFLAG)  OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - -

ALL       1ST HIGHEST VALUE IS       0.97973 AT (  244372.41,  4090113.39,
103.77,   103.77,    0.00)  DC
          2ND HIGHEST VALUE IS       0.93438 AT (  244369.73,  4090147.94,
103.94,   103.94,    0.00)  DC
          3RD HIGHEST VALUE IS       0.61169 AT (  244369.26,  4090069.88,
```

```
103.63,   103.63,    0.00)  DC
          4TH HIGHEST VALUE IS       0.40161 AT (  244431.92,  4090008.37,
103.63,   103.63,    0.00)  DC
          5TH HIGHEST VALUE IS       0.35321 AT (  244369.71,  4090029.43,
103.63,   103.63,    0.00)  DC
          6TH HIGHEST VALUE IS       0.28878 AT (  244432.01,  4089966.78,
103.70,   103.70,    0.00)  DC
          7TH HIGHEST VALUE IS       0.27160 AT (  244212.30,  4090073.29,
103.63,   103.63,    0.00)  DC
          8TH HIGHEST VALUE IS       0.22009 AT (  244357.33,  4089985.24,
103.88,   103.88,    0.00)  DC
          9TH HIGHEST VALUE IS       0.20802 AT (  244145.94,  4090086.13,
103.63,   103.63,    0.00)  DC
         10TH HIGHEST VALUE IS       0.19490 AT (  244432.38,  4089909.62,
104.70,   104.70,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        15:30:03

                                  PAGE  10
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                                *** THE SUMMARY OF HIGHEST  1-HR
RESULTS ***


                                   ** CONC OF TOG      IN MICROGRAMS/M**3
              **

                                                      DATE
                                         NETWORK
GROUP ID                           AVERAGE CONC     (YYMMDDHH)             RECEPTOR
(XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS      43.86614  ON 15021608: AT (  244372.41,
4090113.39,   103.77,   103.77,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
```

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of   0 Fatal Error Message(s)
 A Total of   2 Warning Message(s)
 A Total of   702 Informational Message(s)

 A Total of   26304 Hours Were Processed

 A Total of   129 Calm Hours Identified

 A Total of   573 Missing Hours Identified (2.18 Percent)

    ******** FATAL ERROR MESSAGES ********
               *** NONE ***

    ********   WARNING MESSAGES   ********
 ME W186   64   MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187   64   MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

    ****
    *** AERMOD Finishes Successfully ***
    ****

AERMOD OUTPUT FILES – OPERATIONAL (TRUCKING)

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**
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**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.0.0
** Lakes Environmental Software Inc.
** Date: 2/8/2023
** File: C:\Lakes\AERMOD View\MaderaRanchos_Op_Trucks\MaderaRanchos_Op_Trucks.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\MaderaRanchos_Operational\MaderaRanchos_Operati
   MODELOPT DFAULT CONC
   AVERTIME 1 ANNUAL
   POLLUTID PM_10
   RUNORNOT RUN
   ERRORFIL MaderaRanchos_Op_Trucks.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION STCK1        POINT      244564.164  4090148.110      105.440
   LOCATION STCK2        POINT      244536.535  4090147.987      105.270
   LOCATION STCK3        POINT      244564.322  4090127.656      105.460
   LOCATION STCK4        POINT      244537.921  4090127.813      105.440
** ------------------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC
** PREFIX
** Length of Side = 3.00
** Configuration = Adjacent
** Emission Rate = 0.000033
** Vertical Dimension = 3.00
** SZINIT = 1.40
** Nodes = 3
** 244515.258, 4090170.542, 105.06, 0.00, 1.40
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** 244513.323, 4090106.281, 105.12, 0.00, 1.40
** 244513.323, 4090105.435, 105.12, 0.00, 1.40
** ----------------------------------------------------------------
   LOCATION L0000628     VOLUME   244515.213 4090169.043 105.08
   LOCATION L0000629     VOLUME   244515.123 4090166.044 105.11
   LOCATION L0000630     VOLUME   244515.032 4090163.046 105.13
   LOCATION L0000631     VOLUME   244514.942 4090160.047 105.16
   LOCATION L0000632     VOLUME   244514.852 4090157.048 105.16
   LOCATION L0000633     VOLUME   244514.761 4090154.050 105.17
   LOCATION L0000634     VOLUME   244514.671 4090151.051 105.18
   LOCATION L0000635     VOLUME   244514.581 4090148.052 105.18
   LOCATION L0000636     VOLUME   244514.490 4090145.054 105.19
   LOCATION L0000637     VOLUME   244514.400 4090142.055 105.19
   LOCATION L0000638     VOLUME   244514.310 4090139.056 105.20
   LOCATION L0000639     VOLUME   244514.220 4090136.058 105.20
   LOCATION L0000640     VOLUME   244514.129 4090133.059 105.21
   LOCATION L0000641     VOLUME   244514.039 4090130.060 105.21
   LOCATION L0000642     VOLUME   244513.949 4090127.062 105.21
   LOCATION L0000643     VOLUME   244513.858 4090124.063 105.20
   LOCATION L0000644     VOLUME   244513.768 4090121.065 105.20
   LOCATION L0000645     VOLUME   244513.678 4090118.066 105.19
   LOCATION L0000646     VOLUME   244513.587 4090115.067 105.18
   LOCATION L0000647     VOLUME   244513.497 4090112.069 105.18
   LOCATION L0000648     VOLUME   244513.407 4090109.070 105.17
   LOCATION L0000649     VOLUME   244513.323 4090106.071 105.17
** End of LINE VOLUME Source ID = SLINE1
** ----------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE2
** DESCRSRC
** PREFIX
** Length of Side = 3.00
** Configuration = Adjacent
** Emission Rate = 0.000135
** Vertical Dimension = 3.00
** SZINIT = 1.40
** Nodes = 2
** 245414.346, 4090159.399, 107.91, 0.00, 1.40
** 243599.897, 4090209.874, 102.53, 0.00, 1.40
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   LOCATION L0000023     VOLUME   245412.847 4090159.441 107.94
   LOCATION L0000024     VOLUME   245409.848 4090159.524 107.91
   LOCATION L0000025     VOLUME   245406.849 4090159.608 107.90
   LOCATION L0000026     VOLUME   245403.850 4090159.691 107.90
   LOCATION L0000027     VOLUME   245400.851 4090159.775 107.90
   LOCATION L0000028     VOLUME   245397.853 4090159.858 107.90
   LOCATION L0000029     VOLUME   245394.854 4090159.942 107.90
   LOCATION L0000030     VOLUME   245391.855 4090160.025 107.90
   LOCATION L0000031     VOLUME   245388.856 4090160.108 107.91
   LOCATION L0000032     VOLUME   245385.857 4090160.192 107.91
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LOCATION L0000033 VOLUME 245382.858 4090160.275 107.92
LOCATION L0000034 VOLUME 245379.860 4090160.359 107.92
LOCATION L0000035 VOLUME 245376.861 4090160.442 107.93
LOCATION L0000036 VOLUME 245373.862 4090160.525 107.93
LOCATION L0000037 VOLUME 245370.863 4090160.609 107.94
LOCATION L0000038 VOLUME 245367.864 4090160.692 107.94
LOCATION L0000039 VOLUME 245364.865 4090160.776 107.94
LOCATION L0000040 VOLUME 245361.867 4090160.859 107.95
LOCATION L0000041 VOLUME 245358.868 4090160.943 107.95
LOCATION L0000042 VOLUME 245355.869 4090161.026 107.95
LOCATION L0000043 VOLUME 245352.870 4090161.109 107.95
LOCATION L0000044 VOLUME 245349.871 4090161.193 107.95
LOCATION L0000045 VOLUME 245346.872 4090161.276 107.97
LOCATION L0000046 VOLUME 245343.873 4090161.360 108.00
LOCATION L0000047 VOLUME 245340.875 4090161.443 108.02
LOCATION L0000048 VOLUME 245337.876 4090161.527 108.05
LOCATION L0000049 VOLUME 245334.877 4090161.610 108.08
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LOCATION L0000051 VOLUME 245328.879 4090161.777 108.13
LOCATION L0000052 VOLUME 245325.880 4090161.860 108.16
LOCATION L0000053 VOLUME 245322.882 4090161.944 108.19
LOCATION L0000054 VOLUME 245319.883 4090162.027 108.21
LOCATION L0000055 VOLUME 245316.884 4090162.111 108.23
LOCATION L0000056 VOLUME 245313.885 4090162.194 108.22
LOCATION L0000057 VOLUME 245310.886 4090162.277 108.22
LOCATION L0000058 VOLUME 245307.887 4090162.361 108.22
LOCATION L0000059 VOLUME 245304.889 4090162.444 108.22
LOCATION L0000060 VOLUME 245301.890 4090162.528 108.22
LOCATION L0000061 VOLUME 245298.891 4090162.611 108.21
LOCATION L0000062 VOLUME 245295.892 4090162.694 108.21
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LOCATION L0000064 VOLUME 245289.894 4090162.861 108.21
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LOCATION L0000077 VOLUME 245250.909 4090163.946 108.14
LOCATION L0000078 VOLUME 245247.911 4090164.029 108.11
LOCATION L0000079 VOLUME 245244.912 4090164.113 108.09
LOCATION L0000080 VOLUME 245241.913 4090164.196 108.06
LOCATION L0000081 VOLUME 245238.914 4090164.280 108.04
LOCATION L0000082 VOLUME 245235.915 4090164.363 108.01

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LOCATION L0000097 VOLUME 245190.933 4090165.614 107.96
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LOCATION L0000255 VOLUME 244717.116 4090178.795 106.36
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LOCATION L0000260 VOLUME 244702.122 4090179.212 106.21
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LOCATION L0000299 VOLUME 244585.167 4090182.466 105.63
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LOCATION L0000307 VOLUME 244561.176 4090183.133 105.39
LOCATION L0000308 VOLUME 244558.177 4090183.217 105.36
LOCATION L0000309 VOLUME 244555.179 4090183.300 105.33
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LOCATION L0000322 VOLUME 244516.194 4090184.384 104.97
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LOCATION L0000578 VOLUME 243748.491 4090205.741 102.52
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LOCATION L0000581 VOLUME 243739.494 4090205.991 102.34
LOCATION L0000582 VOLUME 243736.495 4090206.074 102.28

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   LOCATION L0000586     VOLUME   243724.500 4090206.408 102.11
   LOCATION L0000587     VOLUME   243721.501 4090206.492 102.11
   LOCATION L0000588     VOLUME   243718.502 4090206.575 102.11
   LOCATION L0000589     VOLUME   243715.503 4090206.658 102.11
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   LOCATION L0000591     VOLUME   243709.506 4090206.825 102.11
   LOCATION L0000592     VOLUME   243706.507 4090206.909 102.11
   LOCATION L0000593     VOLUME   243703.508 4090206.992 102.11
   LOCATION L0000594     VOLUME   243700.509 4090207.076 102.11
   LOCATION L0000595     VOLUME   243697.510 4090207.159 102.11
   LOCATION L0000596     VOLUME   243694.512 4090207.242 102.11
   LOCATION L0000597     VOLUME   243691.513 4090207.326 102.11
   LOCATION L0000598     VOLUME   243688.514 4090207.409 102.11
   LOCATION L0000599     VOLUME   243685.515 4090207.493 102.11
   LOCATION L0000600     VOLUME   243682.516 4090207.576 102.11
   LOCATION L0000601     VOLUME   243679.517 4090207.660 102.11
   LOCATION L0000602     VOLUME   243676.519 4090207.743 102.11
   LOCATION L0000603     VOLUME   243673.520 4090207.826 102.11
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   LOCATION L0000607     VOLUME   243661.524 4090208.160 102.18
   LOCATION L0000608     VOLUME   243658.525 4090208.243 102.21
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   LOCATION L0000613     VOLUME   243643.531 4090208.661 102.36
   LOCATION L0000614     VOLUME   243640.532 4090208.744 102.39
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   LOCATION L0000617     VOLUME   243631.536 4090208.994 102.41
   LOCATION L0000618     VOLUME   243628.537 4090209.078 102.41
   LOCATION L0000619     VOLUME   243625.538 4090209.161 102.41
   LOCATION L0000620     VOLUME   243622.539 4090209.245 102.41
   LOCATION L0000621     VOLUME   243619.541 4090209.328 102.41
   LOCATION L0000622     VOLUME   243616.542 4090209.411 102.41
   LOCATION L0000623     VOLUME   243613.543 4090209.495 102.41
   LOCATION L0000624     VOLUME   243610.544 4090209.578 102.41
   LOCATION L0000625     VOLUME   243607.545 4090209.662 102.42
   LOCATION L0000626     VOLUME   243604.546 4090209.745 102.45
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** End of LINE VOLUME Source ID = SLINE2
** Source Parameters **
   SRCPARAM STCK1        0.00004078     3.660   291.000   0.00100     0.051

   SRCPARAM STCK2        0.00004078     3.660   291.000   0.00100     0.051
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   SRCPARAM STCK3        0.00004078     3.660   291.000   0.00100     0.051

   SRCPARAM STCK4        0.00004078     3.660   291.000   0.00100     0.051

** LINE VOLUME Source ID = SLINE1
   SRCPARAM L0000628     0.0000015      0.00      1.40      1.40
   SRCPARAM L0000629     0.0000015      0.00      1.40      1.40
   SRCPARAM L0000630     0.0000015      0.00      1.40      1.40
   SRCPARAM L0000631     0.0000015      0.00      1.40      1.40
   SRCPARAM L0000632     0.0000015      0.00      1.40      1.40
   SRCPARAM L0000633     0.0000015      0.00      1.40      1.40
   SRCPARAM L0000634     0.0000015      0.00      1.40      1.40
   SRCPARAM L0000635     0.0000015      0.00      1.40      1.40
   SRCPARAM L0000636     0.0000015      0.00      1.40      1.40
   SRCPARAM L0000637     0.0000015      0.00      1.40      1.40
   SRCPARAM L0000638     0.0000015      0.00      1.40      1.40
   SRCPARAM L0000639     0.0000015      0.00      1.40      1.40
   SRCPARAM L0000640     0.0000015      0.00      1.40      1.40
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   SRCPARAM L0000647     0.0000015      0.00      1.40      1.40
   SRCPARAM L0000648     0.0000015      0.00      1.40      1.40
   SRCPARAM L0000649     0.0000015      0.00      1.40      1.40
** ----------------------------------------------------------------------
** LINE VOLUME Source ID = SLINE2
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   SRCPARAM L0000042     0.0000002231      0.00      1.40      1.40
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   SRCPARAM L0000611     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000612     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000613     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000614     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000615     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000616     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000617     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000618     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000619     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000620     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000621     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000622     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000623     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000624     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000625     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000626     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000627     0.0000002231      0.00      1.40      1.40
** ------------------------------------------------------------------
   SRCGROUP ALL
SO FINISHED
**
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** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
   INCLUDED MaderaRanchos_Op_Trucks.rou
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
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ME STARTING
   SURFFILE "C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.SFC"
   PROFFILE "C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.PFL"
   SURFDATA 93242 2015
   UAIRDATA 23230 2015 OAKLAND/WSO_AP
   PROFBASE 889.11 FEET
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST MADERARANCHOS_OP_TRUCKS.AD\01H1GALL.PLT 31
   PLOTFILE ANNUAL ALL MADERARANCHOS_OP_TRUCKS.AD\AN00GALL.PLT 32
   SUMMFILE MaderaRanchos_Op_Trucks.sum
OU FINISHED
**
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** Project Parameters
**************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
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** AERMOD Input Produced by:
** AERMOD View Ver. 10.0.0
** Lakes Environmental Software Inc.
** Date: 2/8/2023
** File: C:\Lakes\AERMOD View\MaderaRanchos_Op_Trucks\MaderaRanchos_Op_Trucks.ADI
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**************************************
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**
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** AERMOD Control Pathway
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**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\MaderaRanchos_Operational\MaderaRanchos_Operati
   MODELOPT DFAULT CONC
   AVERTIME 1 ANNUAL
   POLLUTID PM_10
   RUNORNOT RUN
   ERRORFIL MaderaRanchos_Op_Trucks.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
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**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION STCK1        POINT      244564.164  4090148.110      105.440
   LOCATION STCK2        POINT      244536.535  4090147.987      105.270
   LOCATION STCK3        POINT      244564.322  4090127.656      105.460
   LOCATION STCK4        POINT      244537.921  4090127.813      105.440
** ------------------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC
** PREFIX
** Length of Side = 3.00
** Configuration = Adjacent
** Emission Rate = 0.000033
** Vertical Dimension = 3.00
** SZINIT = 1.40
** Nodes = 3
** 244515.258, 4090170.542, 105.06, 0.00, 1.40
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** 244513.323, 4090106.281, 105.12, 0.00, 1.40
** 244513.323, 4090105.435, 105.12, 0.00, 1.40
** ----------------------------------------------------------------
   LOCATION L0000628     VOLUME   244515.213 4090169.043 105.08
   LOCATION L0000629     VOLUME   244515.123 4090166.044 105.11
   LOCATION L0000630     VOLUME   244515.032 4090163.046 105.13
   LOCATION L0000631     VOLUME   244514.942 4090160.047 105.16
   LOCATION L0000632     VOLUME   244514.852 4090157.048 105.16
   LOCATION L0000633     VOLUME   244514.761 4090154.050 105.17
   LOCATION L0000634     VOLUME   244514.671 4090151.051 105.18
   LOCATION L0000635     VOLUME   244514.581 4090148.052 105.18
   LOCATION L0000636     VOLUME   244514.490 4090145.054 105.19
   LOCATION L0000637     VOLUME   244514.400 4090142.055 105.19
   LOCATION L0000638     VOLUME   244514.310 4090139.056 105.20
   LOCATION L0000639     VOLUME   244514.220 4090136.058 105.20
   LOCATION L0000640     VOLUME   244514.129 4090133.059 105.21
   LOCATION L0000641     VOLUME   244514.039 4090130.060 105.21
   LOCATION L0000642     VOLUME   244513.949 4090127.062 105.21
   LOCATION L0000643     VOLUME   244513.858 4090124.063 105.20
   LOCATION L0000644     VOLUME   244513.768 4090121.065 105.20
   LOCATION L0000645     VOLUME   244513.678 4090118.066 105.19
   LOCATION L0000646     VOLUME   244513.587 4090115.067 105.18
   LOCATION L0000647     VOLUME   244513.497 4090112.069 105.18
   LOCATION L0000648     VOLUME   244513.407 4090109.070 105.17
   LOCATION L0000649     VOLUME   244513.323 4090106.071 105.17
** End of LINE VOLUME Source ID = SLINE1
** ----------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE2
** DESCRSRC
** PREFIX
** Length of Side = 3.00
** Configuration = Adjacent
** Emission Rate = 0.000135
** Vertical Dimension = 3.00
** SZINIT = 1.40
** Nodes = 2
** 245414.346, 4090159.399, 107.91, 0.00, 1.40
** 243599.897, 4090209.874, 102.53, 0.00, 1.40
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   LOCATION L0000023     VOLUME   245412.847 4090159.441 107.94
   LOCATION L0000024     VOLUME   245409.848 4090159.524 107.91
   LOCATION L0000025     VOLUME   245406.849 4090159.608 107.90
   LOCATION L0000026     VOLUME   245403.850 4090159.691 107.90
   LOCATION L0000027     VOLUME   245400.851 4090159.775 107.90
   LOCATION L0000028     VOLUME   245397.853 4090159.858 107.90
   LOCATION L0000029     VOLUME   245394.854 4090159.942 107.90
   LOCATION L0000030     VOLUME   245391.855 4090160.025 107.90
   LOCATION L0000031     VOLUME   245388.856 4090160.108 107.91
   LOCATION L0000032     VOLUME   245385.857 4090160.192 107.91
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LOCATION L0000033 VOLUME 245382.858 4090160.275 107.92
LOCATION L0000034 VOLUME 245379.860 4090160.359 107.92
LOCATION L0000035 VOLUME 245376.861 4090160.442 107.93
LOCATION L0000036 VOLUME 245373.862 4090160.525 107.93
LOCATION L0000037 VOLUME 245370.863 4090160.609 107.94
LOCATION L0000038 VOLUME 245367.864 4090160.692 107.94
LOCATION L0000039 VOLUME 245364.865 4090160.776 107.94
LOCATION L0000040 VOLUME 245361.867 4090160.859 107.95
LOCATION L0000041 VOLUME 245358.868 4090160.943 107.95
LOCATION L0000042 VOLUME 245355.869 4090161.026 107.95
LOCATION L0000043 VOLUME 245352.870 4090161.109 107.95
LOCATION L0000044 VOLUME 245349.871 4090161.193 107.95
LOCATION L0000045 VOLUME 245346.872 4090161.276 107.97
LOCATION L0000046 VOLUME 245343.873 4090161.360 108.00
LOCATION L0000047 VOLUME 245340.875 4090161.443 108.02
LOCATION L0000048 VOLUME 245337.876 4090161.527 108.05
LOCATION L0000049 VOLUME 245334.877 4090161.610 108.08
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LOCATION L0000051 VOLUME 245328.879 4090161.777 108.13
LOCATION L0000052 VOLUME 245325.880 4090161.860 108.16
LOCATION L0000053 VOLUME 245322.882 4090161.944 108.19
LOCATION L0000054 VOLUME 245319.883 4090162.027 108.21
LOCATION L0000055 VOLUME 245316.884 4090162.111 108.23
LOCATION L0000056 VOLUME 245313.885 4090162.194 108.22
LOCATION L0000057 VOLUME 245310.886 4090162.277 108.22
LOCATION L0000058 VOLUME 245307.887 4090162.361 108.22
LOCATION L0000059 VOLUME 245304.889 4090162.444 108.22
LOCATION L0000060 VOLUME 245301.890 4090162.528 108.22
LOCATION L0000061 VOLUME 245298.891 4090162.611 108.21
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LOCATION L0000064 VOLUME 245289.894 4090162.861 108.21
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LOCATION L0000082 VOLUME 245235.915 4090164.363 108.01

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LOCATION L0000229 VOLUME 244795.086 4090176.626 106.85
LOCATION L0000230 VOLUME 244792.087 4090176.710 106.82
LOCATION L0000231 VOLUME 244789.088 4090176.793 106.79
LOCATION L0000232 VOLUME 244786.089 4090176.876 106.76

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LOCATION L0000236 VOLUME 244774.094 4090177.210 106.68
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LOCATION L0000263 VOLUME 244693.125 4090179.463 106.12
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LOCATION L0000267 VOLUME 244681.130 4090179.796 106.07
LOCATION L0000268 VOLUME 244678.131 4090179.880 106.07
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   LOCATION L0000611     VOLUME   243649.529 4090208.494 102.30
   LOCATION L0000612     VOLUME   243646.530 4090208.577 102.33
   LOCATION L0000613     VOLUME   243643.531 4090208.661 102.36
   LOCATION L0000614     VOLUME   243640.532 4090208.744 102.39
   LOCATION L0000615     VOLUME   243637.534 4090208.827 102.41
   LOCATION L0000616     VOLUME   243634.535 4090208.911 102.41
   LOCATION L0000617     VOLUME   243631.536 4090208.994 102.41
   LOCATION L0000618     VOLUME   243628.537 4090209.078 102.41
   LOCATION L0000619     VOLUME   243625.538 4090209.161 102.41
   LOCATION L0000620     VOLUME   243622.539 4090209.245 102.41
   LOCATION L0000621     VOLUME   243619.541 4090209.328 102.41
   LOCATION L0000622     VOLUME   243616.542 4090209.411 102.41
   LOCATION L0000623     VOLUME   243613.543 4090209.495 102.41
   LOCATION L0000624     VOLUME   243610.544 4090209.578 102.41
   LOCATION L0000625     VOLUME   243607.545 4090209.662 102.42
   LOCATION L0000626     VOLUME   243604.546 4090209.745 102.45
   LOCATION L0000627     VOLUME   243601.548 4090209.829 102.48
** End of LINE VOLUME Source ID = SLINE2
** Source Parameters **
   SRCPARAM STCK1        0.00004078     3.660   291.000   0.00100     0.051
   SRCPARAM STCK2        0.00004078     3.660   291.000   0.00100     0.051
   SRCPARAM STCK3        0.00004078     3.660   291.000   0.00100     0.051
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   SRCPARAM STCK4        0.00004078     3.660   291.000   0.00100     0.051
** LINE VOLUME Source ID = SLINE1
   SRCPARAM L0000628     0.0000015      0.00      1.40      1.40
   SRCPARAM L0000629     0.0000015      0.00      1.40      1.40
   SRCPARAM L0000630     0.0000015      0.00      1.40      1.40
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   SRCPARAM L0000640     0.0000015      0.00      1.40      1.40
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   SRCPARAM L0000649     0.0000015      0.00      1.40      1.40
** ----------------------------------------------------------------------
** LINE VOLUME Source ID = SLINE2
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   SRCPARAM L0000046     0.0000002231      0.00      1.40      1.40
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SRCPARAM L0000575     0.0000002231      0.00      1.40      1.40
SRCPARAM L0000576     0.0000002231      0.00      1.40      1.40
SRCPARAM L0000577     0.0000002231      0.00      1.40      1.40
SRCPARAM L0000578     0.0000002231      0.00      1.40      1.40
SRCPARAM L0000579     0.0000002231      0.00      1.40      1.40
SRCPARAM L0000580     0.0000002231      0.00      1.40      1.40
SRCPARAM L0000581     0.0000002231      0.00      1.40      1.40
SRCPARAM L0000582     0.0000002231      0.00      1.40      1.40
SRCPARAM L0000583     0.0000002231      0.00      1.40      1.40
SRCPARAM L0000584     0.0000002231      0.00      1.40      1.40
SRCPARAM L0000585     0.0000002231      0.00      1.40      1.40
SRCPARAM L0000586     0.0000002231      0.00      1.40      1.40
SRCPARAM L0000587     0.0000002231      0.00      1.40      1.40
SRCPARAM L0000588     0.0000002231      0.00      1.40      1.40
SRCPARAM L0000589     0.0000002231      0.00      1.40      1.40
SRCPARAM L0000590     0.0000002231      0.00      1.40      1.40
SRCPARAM L0000591     0.0000002231      0.00      1.40      1.40
SRCPARAM L0000592     0.0000002231      0.00      1.40      1.40
SRCPARAM L0000593     0.0000002231      0.00      1.40      1.40
SRCPARAM L0000594     0.0000002231      0.00      1.40      1.40
SRCPARAM L0000595     0.0000002231      0.00      1.40      1.40
SRCPARAM L0000596     0.0000002231      0.00      1.40      1.40
```

```
   SRCPARAM L0000597     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000598     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000599     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000600     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000601     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000602     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000603     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000604     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000605     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000606     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000607     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000608     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000609     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000610     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000611     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000612     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000613     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000614     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000615     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000616     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000617     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000618     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000619     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000620     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000621     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000622     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000623     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000624     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000625     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000626     0.0000002231      0.00      1.40      1.40
   SRCPARAM L0000627     0.0000002231      0.00      1.40      1.40
** ------------------------------------------------------------------
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
   INCLUDED MaderaRanchos_Op_Trucks.rou
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
```

```
   SURFFILE "C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.SFC"
   PROFFILE "C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.PFL"
   SURFDATA 93242 2015
   UAIRDATA 23230 2015 OAKLAND/WSO_AP
   PROFBASE 889.11 FEET
ME FINISHED
**
************************************
** AERMOD Output Pathway
************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST MADERARANCHOS_OP_TRUCKS.AD\01H1GALL.PLT 31
   PLOTFILE ANNUAL ALL MADERARANCHOS_OP_TRUCKS.AD\AN00GALL.PLT 32
   SUMMFILE MaderaRanchos_Op_Trucks.sum
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

 ---------  Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186    1356       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187    1356       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        19:21:03
```

```
                                    PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                             ***     MODEL SETUP OPTIONS SUMMARY
  ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

  --   DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay.

 **Other Options Specified:
         ADJ_U*  -  Use ADJ_U* option for SBL in AERMET
         CCVR_Sub - Meteorological data includes CCVR substitutions
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_10

 **Model Calculates  1 Short Term Average(s) of:   1-HR
     and Calculates ANNUAL Averages

 **This Run Includes:    631 Source(s);       1 Source Group(s); and      19
Receptor(s)

                with:      4 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:    627 VOLUME source(s)
                 and:      0 AREA type source(s)
                 and:      0 LINE source(s)
                 and:      0 RLINE/RLINEXT source(s)
                 and:      0 OPENPIT source(s)
                 and:      0 BUOYANT LINE source(s) with a total of     0 line(s)
```

```
 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  18081

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE
Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing
Hours
                                                                 b for Both Calm
and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   271.00 ;  Decay
Coef. =    0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                ;
Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.8 MB of RAM.

 **Input Runstream File:          aermod.inp

 **Output Print File:             aermod.out


 **Detailed Error/Message File:   MaderaRanchos_Op_Trucks.err

 **File for Summary of Results:   MaderaRanchos_Op_Trucks.sum

  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        19:21:03

                                  PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*


                                                *** POINT SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE     STACK   STACK
STACK     STACK    BLDG   URBAN  CAP/  EMIS RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.    HEIGHT  TEMP.
```

```
EXIT VEL. DIAMETER  EXISTS SOURCE HOR   SCALAR
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (DEG.K)
(M/SEC)  (METERS)                      VARY BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -

 STCK1            0   0.40780E-04  244564.2 4090148.1   105.4     3.66   291.00
0.00     0.05    NO      NO    NO
 STCK2            0   0.40780E-04  244536.5 4090148.0   105.3     3.66   291.00
0.00     0.05    NO      NO    NO
 STCK3            0   0.40780E-04  244564.3 4090127.7   105.5     3.66   291.00
0.00     0.05    NO      NO    NO
 STCK4            0   0.40780E-04  244537.9 4090127.8   105.4     3.66   291.00
0.00     0.05    NO      NO    NO
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                          ***       19:21:03

                                   PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*


                                                  *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - -

 L0000628         0   0.15000E-05  244515.2 4090169.0   105.1     0.00     1.40
1.40     NO
 L0000629         0   0.15000E-05  244515.1 4090166.0   105.1     0.00     1.40
1.40     NO
 L0000630         0   0.15000E-05  244515.0 4090163.0   105.1     0.00     1.40
1.40     NO
 L0000631         0   0.15000E-05  244514.9 4090160.0   105.2     0.00     1.40
1.40     NO
 L0000632         0   0.15000E-05  244514.9 4090157.0   105.2     0.00     1.40
1.40     NO
 L0000633         0   0.15000E-05  244514.8 4090154.0   105.2     0.00     1.40
1.40     NO
 L0000634         0   0.15000E-05  244514.7 4090151.1   105.2     0.00     1.40
1.40     NO
 L0000635         0   0.15000E-05  244514.6 4090148.1   105.2     0.00     1.40
1.40     NO
```

L0000636	0	0.15000E-05	244514.5	4090145.1	105.2	0.00	1.40	1.40 NO
L0000637	0	0.15000E-05	244514.4	4090142.1	105.2	0.00	1.40	1.40 NO
L0000638	0	0.15000E-05	244514.3	4090139.1	105.2	0.00	1.40	1.40 NO
L0000639	0	0.15000E-05	244514.2	4090136.1	105.2	0.00	1.40	1.40 NO
L0000640	0	0.15000E-05	244514.1	4090133.1	105.2	0.00	1.40	1.40 NO
L0000641	0	0.15000E-05	244514.0	4090130.1	105.2	0.00	1.40	1.40 NO
L0000642	0	0.15000E-05	244513.9	4090127.1	105.2	0.00	1.40	1.40 NO
L0000643	0	0.15000E-05	244513.9	4090124.1	105.2	0.00	1.40	1.40 NO
L0000644	0	0.15000E-05	244513.8	4090121.1	105.2	0.00	1.40	1.40 NO
L0000645	0	0.15000E-05	244513.7	4090118.1	105.2	0.00	1.40	1.40 NO
L0000646	0	0.15000E-05	244513.6	4090115.1	105.2	0.00	1.40	1.40 NO
L0000647	0	0.15000E-05	244513.5	4090112.1	105.2	0.00	1.40	1.40 NO
L0000648	0	0.15000E-05	244513.4	4090109.1	105.2	0.00	1.40	1.40 NO
L0000649	0	0.15000E-05	244513.3	4090106.1	105.2	0.00	1.40	1.40 NO
L0000023	0	0.22310E-06	245412.8	4090159.4	107.9	0.00	1.40	1.40 NO
L0000024	0	0.22310E-06	245409.8	4090159.5	107.9	0.00	1.40	1.40 NO
L0000025	0	0.22310E-06	245406.8	4090159.6	107.9	0.00	1.40	1.40 NO
L0000026	0	0.22310E-06	245403.8	4090159.7	107.9	0.00	1.40	1.40 NO
L0000027	0	0.22310E-06	245400.9	4090159.8	107.9	0.00	1.40	1.40 NO
L0000028	0	0.22310E-06	245397.9	4090159.9	107.9	0.00	1.40	1.40 NO
L0000029	0	0.22310E-06	245394.9	4090159.9	107.9	0.00	1.40	1.40 NO
L0000030	0	0.22310E-06	245391.9	4090160.0	107.9	0.00	1.40	1.40 NO
L0000031	0	0.22310E-06	245388.9	4090160.1	107.9	0.00	1.40	1.40 NO
L0000032	0	0.22310E-06	245385.9	4090160.2	107.9	0.00	1.40	1.40 NO
L0000033	0	0.22310E-06	245382.9	4090160.3	107.9	0.00	1.40	1.40 NO

```
 L0000034         0   0.22310E-06  245379.9 4090160.4   107.9     0.00     1.40
1.40     NO
 L0000035         0   0.22310E-06  245376.9 4090160.4   107.9     0.00     1.40
1.40     NO
 L0000036         0   0.22310E-06  245373.9 4090160.5   107.9     0.00     1.40
1.40     NO
 L0000037         0   0.22310E-06  245370.9 4090160.6   107.9     0.00     1.40
1.40     NO
 L0000038         0   0.22310E-06  245367.9 4090160.7   107.9     0.00     1.40
1.40     NO
 L0000039         0   0.22310E-06  245364.9 4090160.8   107.9     0.00     1.40
1.40     NO
 L0000040         0   0.22310E-06  245361.9 4090160.9   108.0     0.00     1.40
1.40     NO
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        19:21:03

                                  PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*


                                                    *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - -

 L0000041         0   0.22310E-06  245358.9 4090160.9   108.0     0.00     1.40
1.40     NO
 L0000042         0   0.22310E-06  245355.9 4090161.0   108.0     0.00     1.40
1.40     NO
 L0000043         0   0.22310E-06  245352.9 4090161.1   108.0     0.00     1.40
1.40     NO
 L0000044         0   0.22310E-06  245349.9 4090161.2   108.0     0.00     1.40
1.40     NO
 L0000045         0   0.22310E-06  245346.9 4090161.3   108.0     0.00     1.40
1.40     NO
 L0000046         0   0.22310E-06  245343.9 4090161.4   108.0     0.00     1.40
1.40     NO
 L0000047         0   0.22310E-06  245340.9 4090161.4   108.0     0.00     1.40
1.40     NO
 L0000048         0   0.22310E-06  245337.9 4090161.5   108.0     0.00     1.40
1.40     NO
```

L0000049	0	0.22310E-06	245334.9	4090161.6	108.1	0.00	1.40	1.40 NO
L0000050	0	0.22310E-06	245331.9	4090161.7	108.1	0.00	1.40	1.40 NO
L0000051	0	0.22310E-06	245328.9	4090161.8	108.1	0.00	1.40	1.40 NO
L0000052	0	0.22310E-06	245325.9	4090161.9	108.2	0.00	1.40	1.40 NO
L0000053	0	0.22310E-06	245322.9	4090161.9	108.2	0.00	1.40	1.40 NO
L0000054	0	0.22310E-06	245319.9	4090162.0	108.2	0.00	1.40	1.40 NO
L0000055	0	0.22310E-06	245316.9	4090162.1	108.2	0.00	1.40	1.40 NO
L0000056	0	0.22310E-06	245313.9	4090162.2	108.2	0.00	1.40	1.40 NO
L0000057	0	0.22310E-06	245310.9	4090162.3	108.2	0.00	1.40	1.40 NO
L0000058	0	0.22310E-06	245307.9	4090162.4	108.2	0.00	1.40	1.40 NO
L0000059	0	0.22310E-06	245304.9	4090162.4	108.2	0.00	1.40	1.40 NO
L0000060	0	0.22310E-06	245301.9	4090162.5	108.2	0.00	1.40	1.40 NO
L0000061	0	0.22310E-06	245298.9	4090162.6	108.2	0.00	1.40	1.40 NO
L0000062	0	0.22310E-06	245295.9	4090162.7	108.2	0.00	1.40	1.40 NO
L0000063	0	0.22310E-06	245292.9	4090162.8	108.2	0.00	1.40	1.40 NO
L0000064	0	0.22310E-06	245289.9	4090162.9	108.2	0.00	1.40	1.40 NO
L0000065	0	0.22310E-06	245286.9	4090162.9	108.2	0.00	1.40	1.40 NO
L0000066	0	0.22310E-06	245283.9	4090163.0	108.2	0.00	1.40	1.40 NO
L0000067	0	0.22310E-06	245280.9	4090163.1	108.2	0.00	1.40	1.40 NO
L0000068	0	0.22310E-06	245277.9	4090163.2	108.2	0.00	1.40	1.40 NO
L0000069	0	0.22310E-06	245274.9	4090163.3	108.2	0.00	1.40	1.40 NO
L0000070	0	0.22310E-06	245271.9	4090163.4	108.2	0.00	1.40	1.40 NO
L0000071	0	0.22310E-06	245268.9	4090163.4	108.2	0.00	1.40	1.40 NO
L0000072	0	0.22310E-06	245265.9	4090163.5	108.2	0.00	1.40	1.40 NO
L0000073	0	0.22310E-06	245262.9	4090163.6	108.2	0.00	1.40	1.40 NO

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 L0000074         0   0.22310E-06  245259.9 4090163.7   108.2     0.00     1.40
1.40     NO
 L0000075         0   0.22310E-06  245256.9 4090163.8   108.2     0.00     1.40
1.40     NO
 L0000076         0   0.22310E-06  245253.9 4090163.9   108.2     0.00     1.40
1.40     NO
 L0000077         0   0.22310E-06  245250.9 4090163.9   108.1     0.00     1.40
1.40     NO
 L0000078         0   0.22310E-06  245247.9 4090164.0   108.1     0.00     1.40
1.40     NO
 L0000079         0   0.22310E-06  245244.9 4090164.1   108.1     0.00     1.40
1.40     NO
 L0000080         0   0.22310E-06  245241.9 4090164.2   108.1     0.00     1.40
1.40     NO
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        19:21:03

                                  PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*


                                                    *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 L0000081         0   0.22310E-06  245238.9 4090164.3   108.0     0.00     1.40
1.40     NO
 L0000082         0   0.22310E-06  245235.9 4090164.4   108.0     0.00     1.40
1.40     NO
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1.40     NO
 L0000084         0   0.22310E-06  245229.9 4090164.5   108.0     0.00     1.40
1.40     NO
 L0000085         0   0.22310E-06  245226.9 4090164.6   108.0     0.00     1.40
1.40     NO
 L0000086         0   0.22310E-06  245223.9 4090164.7   108.0     0.00     1.40
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1.40     NO
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1.40     NO
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1.40     NO
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1.40     NO
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 L0000103         0   0.22310E-06  245172.9 4090166.1   108.0     0.00     1.40
1.40     NO
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 L0000105         0   0.22310E-06  245166.9 4090166.3   108.0     0.00     1.40
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1.40     NO
 L0000107         0   0.22310E-06  245160.9 4090166.4   108.0     0.00     1.40
1.40     NO
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1.40     NO
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1.40     NO
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1.40     NO
 L0000117         0   0.22310E-06  245131.0 4090167.3   107.9     0.00     1.40
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1.40     NO
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        19:21:03

                                  PAGE   6
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*


                                                    *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 L0000121         0   0.22310E-06  245119.0 4090167.6   107.7     0.00     1.40
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1.40     NO
 L0000123         0   0.22310E-06  245113.0 4090167.8   107.6     0.00     1.40
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 L0000124         0   0.22310E-06  245110.0 4090167.9   107.6     0.00     1.40
1.40     NO
 L0000125         0   0.22310E-06  245107.0 4090167.9   107.6     0.00     1.40
1.40     NO
 L0000126         0   0.22310E-06  245104.0 4090168.0   107.5     0.00     1.40
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 L0000127         0   0.22310E-06  245101.0 4090168.1   107.5     0.00     1.40
1.40     NO
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1.40     NO
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 L0000131         0   0.22310E-06  245089.0 4090168.5   107.3     0.00     1.40
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 L0000134         0   0.22310E-06  245080.0 4090168.7   107.1     0.00     1.40
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1.40     NO
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1.40     NO
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 L0000157         0   0.22310E-06  245011.0 4090170.6   106.8     0.00     1.40
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 L0000158         0   0.22310E-06  245008.0 4090170.7   106.8     0.00     1.40
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1.40     NO
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        19:21:03

                                  PAGE   7
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*


                                                    *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 L0000161         0   0.22310E-06  244999.0 4090171.0   106.8     0.00     1.40
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1.40     NO
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1.40     NO
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L0000171	0	0.22310E-06	244969.0	4090171.8	106.7	0.00	1.40	1.40 NO
L0000172	0	0.22310E-06	244966.0	4090171.9	106.7	0.00	1.40	1.40 NO
L0000173	0	0.22310E-06	244963.0	4090172.0	106.7	0.00	1.40	1.40 NO
L0000174	0	0.22310E-06	244960.0	4090172.0	106.7	0.00	1.40	1.40 NO
L0000175	0	0.22310E-06	244957.0	4090172.1	106.7	0.00	1.40	1.40 NO
L0000176	0	0.22310E-06	244954.0	4090172.2	106.7	0.00	1.40	1.40 NO
L0000177	0	0.22310E-06	244951.0	4090172.3	106.7	0.00	1.40	1.40 NO
L0000178	0	0.22310E-06	244948.0	4090172.4	106.7	0.00	1.40	1.40 NO
L0000179	0	0.22310E-06	244945.0	4090172.5	106.7	0.00	1.40	1.40 NO
L0000180	0	0.22310E-06	244942.0	4090172.5	106.7	0.00	1.40	1.40 NO
L0000181	0	0.22310E-06	244939.0	4090172.6	106.7	0.00	1.40	1.40 NO
L0000182	0	0.22310E-06	244936.0	4090172.7	106.7	0.00	1.40	1.40 NO
L0000183	0	0.22310E-06	244933.0	4090172.8	106.7	0.00	1.40	1.40 NO
L0000184	0	0.22310E-06	244930.0	4090172.9	106.7	0.00	1.40	1.40 NO
L0000185	0	0.22310E-06	244927.0	4090173.0	106.7	0.00	1.40	1.40 NO
L0000186	0	0.22310E-06	244924.0	4090173.0	106.7	0.00	1.40	1.40 NO
L0000187	0	0.22310E-06	244921.0	4090173.1	106.7	0.00	1.40	1.40 NO
L0000188	0	0.22310E-06	244918.0	4090173.2	106.7	0.00	1.40	1.40 NO
L0000189	0	0.22310E-06	244915.0	4090173.3	106.7	0.00	1.40	1.40 NO
L0000190	0	0.22310E-06	244912.0	4090173.4	106.7	0.00	1.40	1.40 NO
L0000191	0	0.22310E-06	244909.0	4090173.5	106.7	0.00	1.40	1.40 NO
L0000192	0	0.22310E-06	244906.0	4090173.5	106.7	0.00	1.40	1.40 NO
L0000193	0	0.22310E-06	244903.0	4090173.6	106.7	0.00	1.40	1.40 NO

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1.40     NO
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1.40     NO
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                         ***        19:21:03

                                    PAGE   8
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*


                                                  *** VOLUME SOURCE DATA ***


               NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.                (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - -

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 L0000203         0   0.22310E-06  244873.1 4090174.5   106.8     0.00     1.40
1.40     NO
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1.40     NO
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1.40     NO
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1.40     NO
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1.40     NO
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1.40     NO
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1.40     NO
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1.40     NO
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1.40     NO
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1.40     NO
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 L0000228         0   0.22310E-06  244798.1 4090176.5   106.9     0.00     1.40
1.40     NO
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 L0000230         0   0.22310E-06  244792.1 4090176.7   106.8     0.00     1.40
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1.40     NO
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1.40     NO
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        19:21:03

                                  PAGE   9
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*


                                                    *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 L0000241         0   0.22310E-06  244759.1 4090177.6   106.7     0.00     1.40
1.40     NO
 L0000242         0   0.22310E-06  244756.1 4090177.7   106.7     0.00     1.40
1.40     NO
 L0000243         0   0.22310E-06  244753.1 4090177.8   106.7     0.00     1.40
1.40     NO
 L0000244         0   0.22310E-06  244750.1 4090177.9   106.7     0.00     1.40
1.40     NO
 L0000245         0   0.22310E-06  244747.1 4090178.0   106.7     0.00     1.40
1.40     NO
 L0000246         0   0.22310E-06  244744.1 4090178.0   106.6     0.00     1.40
1.40     NO
 L0000247         0   0.22310E-06  244741.1 4090178.1   106.6     0.00     1.40
1.40     NO
 L0000248         0   0.22310E-06  244738.1 4090178.2   106.6     0.00     1.40
1.40     NO
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L0000249	0	0.22310E-06	244735.1	4090178.3	106.5	0.00	1.40	1.40 NO
L0000250	0	0.22310E-06	244732.1	4090178.4	106.5	0.00	1.40	1.40 NO
L0000251	0	0.22310E-06	244729.1	4090178.5	106.5	0.00	1.40	1.40 NO
L0000252	0	0.22310E-06	244726.1	4090178.5	106.5	0.00	1.40	1.40 NO
L0000253	0	0.22310E-06	244723.1	4090178.6	106.4	0.00	1.40	1.40 NO
L0000254	0	0.22310E-06	244720.1	4090178.7	106.4	0.00	1.40	1.40 NO
L0000255	0	0.22310E-06	244717.1	4090178.8	106.4	0.00	1.40	1.40 NO
L0000256	0	0.22310E-06	244714.1	4090178.9	106.3	0.00	1.40	1.40 NO
L0000257	0	0.22310E-06	244711.1	4090179.0	106.3	0.00	1.40	1.40 NO
L0000258	0	0.22310E-06	244708.1	4090179.0	106.3	0.00	1.40	1.40 NO
L0000259	0	0.22310E-06	244705.1	4090179.1	106.2	0.00	1.40	1.40 NO
L0000260	0	0.22310E-06	244702.1	4090179.2	106.2	0.00	1.40	1.40 NO
L0000261	0	0.22310E-06	244699.1	4090179.3	106.2	0.00	1.40	1.40 NO
L0000262	0	0.22310E-06	244696.1	4090179.4	106.1	0.00	1.40	1.40 NO
L0000263	0	0.22310E-06	244693.1	4090179.5	106.1	0.00	1.40	1.40 NO
L0000264	0	0.22310E-06	244690.1	4090179.5	106.1	0.00	1.40	1.40 NO
L0000265	0	0.22310E-06	244687.1	4090179.6	106.1	0.00	1.40	1.40 NO
L0000266	0	0.22310E-06	244684.1	4090179.7	106.1	0.00	1.40	1.40 NO
L0000267	0	0.22310E-06	244681.1	4090179.8	106.1	0.00	1.40	1.40 NO
L0000268	0	0.22310E-06	244678.1	4090179.9	106.1	0.00	1.40	1.40 NO
L0000269	0	0.22310E-06	244675.1	4090180.0	106.1	0.00	1.40	1.40 NO
L0000270	0	0.22310E-06	244672.1	4090180.0	106.1	0.00	1.40	1.40 NO
L0000271	0	0.22310E-06	244669.1	4090180.1	106.1	0.00	1.40	1.40 NO
L0000272	0	0.22310E-06	244666.1	4090180.2	106.1	0.00	1.40	1.40 NO
L0000273	0	0.22310E-06	244663.1	4090180.3	106.1	0.00	1.40	1.40 NO

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 L0000274         0   0.22310E-06  244660.1 4090180.4   106.1     0.00     1.40
1.40     NO
 L0000275         0   0.22310E-06  244657.1 4090180.5   106.1     0.00     1.40
1.40     NO
 L0000276         0   0.22310E-06  244654.1 4090180.5   106.0     0.00     1.40
1.40     NO
 L0000277         0   0.22310E-06  244651.1 4090180.6   106.0     0.00     1.40
1.40     NO
 L0000278         0   0.22310E-06  244648.1 4090180.7   106.0     0.00     1.40
1.40     NO
 L0000279         0   0.22310E-06  244645.1 4090180.8   105.9     0.00     1.40
1.40     NO
 L0000280         0   0.22310E-06  244642.1 4090180.9   105.9     0.00     1.40
1.40     NO
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        19:21:03

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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*


                                                    *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 L0000281         0   0.22310E-06  244639.1 4090181.0   105.9     0.00     1.40
1.40     NO
 L0000282         0   0.22310E-06  244636.1 4090181.0   105.8     0.00     1.40
1.40     NO
 L0000283         0   0.22310E-06  244633.1 4090181.1   105.8     0.00     1.40
1.40     NO
 L0000284         0   0.22310E-06  244630.1 4090181.2   105.8     0.00     1.40
1.40     NO
 L0000285         0   0.22310E-06  244627.2 4090181.3   105.8     0.00     1.40
1.40     NO
 L0000286         0   0.22310E-06  244624.2 4090181.4   105.8     0.00     1.40
1.40     NO
 L0000287         0   0.22310E-06  244621.2 4090181.5   105.8     0.00     1.40
1.40     NO
 L0000288         0   0.22310E-06  244618.2 4090181.5   105.8     0.00     1.40
1.40     NO
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L0000289	0	0.22310E-06	244615.2	4090181.6	105.8	0.00	1.40	1.40 NO
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L0000291	0	0.22310E-06	244609.2	4090181.8	105.8	0.00	1.40	1.40 NO
L0000292	0	0.22310E-06	244606.2	4090181.9	105.8	0.00	1.40	1.40 NO
L0000293	0	0.22310E-06	244603.2	4090182.0	105.8	0.00	1.40	1.40 NO
L0000294	0	0.22310E-06	244600.2	4090182.0	105.8	0.00	1.40	1.40 NO
L0000295	0	0.22310E-06	244597.2	4090182.1	105.8	0.00	1.40	1.40 NO
L0000296	0	0.22310E-06	244594.2	4090182.2	105.7	0.00	1.40	1.40 NO
L0000297	0	0.22310E-06	244591.2	4090182.3	105.7	0.00	1.40	1.40 NO
L0000298	0	0.22310E-06	244588.2	4090182.4	105.7	0.00	1.40	1.40 NO
L0000299	0	0.22310E-06	244585.2	4090182.5	105.6	0.00	1.40	1.40 NO
L0000300	0	0.22310E-06	244582.2	4090182.5	105.6	0.00	1.40	1.40 NO
L0000301	0	0.22310E-06	244579.2	4090182.6	105.6	0.00	1.40	1.40 NO
L0000302	0	0.22310E-06	244576.2	4090182.7	105.5	0.00	1.40	1.40 NO
L0000303	0	0.22310E-06	244573.2	4090182.8	105.5	0.00	1.40	1.40 NO
L0000304	0	0.22310E-06	244570.2	4090182.9	105.5	0.00	1.40	1.40 NO
L0000305	0	0.22310E-06	244567.2	4090183.0	105.5	0.00	1.40	1.40 NO
L0000306	0	0.22310E-06	244564.2	4090183.0	105.4	0.00	1.40	1.40 NO
L0000307	0	0.22310E-06	244561.2	4090183.1	105.4	0.00	1.40	1.40 NO
L0000308	0	0.22310E-06	244558.2	4090183.2	105.4	0.00	1.40	1.40 NO
L0000309	0	0.22310E-06	244555.2	4090183.3	105.3	0.00	1.40	1.40 NO
L0000310	0	0.22310E-06	244552.2	4090183.4	105.3	0.00	1.40	1.40 NO
L0000311	0	0.22310E-06	244549.2	4090183.5	105.3	0.00	1.40	1.40 NO
L0000312	0	0.22310E-06	244546.2	4090183.5	105.2	0.00	1.40	1.40 NO
L0000313	0	0.22310E-06	244543.2	4090183.6	105.2	0.00	1.40	1.40 NO

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1.40     NO
 L0000315         0   0.22310E-06  244537.2 4090183.8   105.1     0.00     1.40
1.40     NO
 L0000316         0   0.22310E-06  244534.2 4090183.9   105.1     0.00     1.40
1.40     NO
 L0000317         0   0.22310E-06  244531.2 4090184.0   105.1     0.00     1.40
1.40     NO
 L0000318         0   0.22310E-06  244528.2 4090184.1   105.1     0.00     1.40
1.40     NO
 L0000319         0   0.22310E-06  244525.2 4090184.1   105.0     0.00     1.40
1.40     NO
 L0000320         0   0.22310E-06  244522.2 4090184.2   105.0     0.00     1.40
1.40     NO
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        19:21:03

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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*


                                                    *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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 L0000321         0   0.22310E-06  244519.2 4090184.3   105.0     0.00     1.40
1.40     NO
 L0000322         0   0.22310E-06  244516.2 4090184.4   105.0     0.00     1.40
1.40     NO
 L0000323         0   0.22310E-06  244513.2 4090184.5   105.0     0.00     1.40
1.40     NO
 L0000324         0   0.22310E-06  244510.2 4090184.6   104.9     0.00     1.40
1.40     NO
 L0000325         0   0.22310E-06  244507.2 4090184.6   104.9     0.00     1.40
1.40     NO
 L0000326         0   0.22310E-06  244504.2 4090184.7   104.9     0.00     1.40
1.40     NO
 L0000327         0   0.22310E-06  244501.2 4090184.8   104.9     0.00     1.40
1.40     NO
 L0000328         0   0.22310E-06  244498.2 4090184.9   104.9     0.00     1.40
1.40     NO
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1.40	NO						
L0000331	0	0.22310E-06	244489.2	4090185.1	104.9	0.00	1.40
1.40	NO						
L0000332	0	0.22310E-06	244486.2	4090185.2	104.9	0.00	1.40
1.40	NO						
L0000333	0	0.22310E-06	244483.2	4090185.3	104.9	0.00	1.40
1.40	NO						
L0000334	0	0.22310E-06	244480.2	4090185.4	104.8	0.00	1.40
1.40	NO						
L0000335	0	0.22310E-06	244477.2	4090185.5	104.8	0.00	1.40
1.40	NO						
L0000336	0	0.22310E-06	244474.2	4090185.6	104.8	0.00	1.40
1.40	NO						
L0000337	0	0.22310E-06	244471.2	4090185.6	104.8	0.00	1.40
1.40	NO						
L0000338	0	0.22310E-06	244468.2	4090185.7	104.8	0.00	1.40
1.40	NO						
L0000339	0	0.22310E-06	244465.2	4090185.8	104.7	0.00	1.40
1.40	NO						
L0000340	0	0.22310E-06	244462.2	4090185.9	104.7	0.00	1.40
1.40	NO						
L0000341	0	0.22310E-06	244459.2	4090186.0	104.7	0.00	1.40
1.40	NO						
L0000342	0	0.22310E-06	244456.2	4090186.1	104.6	0.00	1.40
1.40	NO						
L0000343	0	0.22310E-06	244453.2	4090186.1	104.6	0.00	1.40
1.40	NO						
L0000344	0	0.22310E-06	244450.2	4090186.2	104.6	0.00	1.40
1.40	NO						
L0000345	0	0.22310E-06	244447.2	4090186.3	104.5	0.00	1.40
1.40	NO						
L0000346	0	0.22310E-06	244444.2	4090186.4	104.5	0.00	1.40
1.40	NO						
L0000347	0	0.22310E-06	244441.2	4090186.5	104.4	0.00	1.40
1.40	NO						
L0000348	0	0.22310E-06	244438.2	4090186.6	104.3	0.00	1.40
1.40	NO						
L0000349	0	0.22310E-06	244435.2	4090186.6	104.3	0.00	1.40
1.40	NO						
L0000350	0	0.22310E-06	244432.2	4090186.7	104.2	0.00	1.40
1.40	NO						
L0000351	0	0.22310E-06	244429.2	4090186.8	104.2	0.00	1.40
1.40	NO						
L0000352	0	0.22310E-06	244426.2	4090186.9	104.1	0.00	1.40
1.40	NO						
L0000353	0	0.22310E-06	244423.2	4090187.0	104.0	0.00	1.40
1.40	NO						

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1.40     NO
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1.40     NO
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1.40     NO
 L0000357         0   0.22310E-06  244411.2 4090187.3   103.9     0.00     1.40
1.40     NO
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1.40     NO
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1.40     NO
 L0000360         0   0.22310E-06  244402.2 4090187.6   103.8     0.00     1.40
1.40     NO
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        19:21:03

                                  PAGE  12
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*


                                                    *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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 L0000361         0   0.22310E-06  244399.2 4090187.6   103.8     0.00     1.40
1.40     NO
 L0000362         0   0.22310E-06  244396.2 4090187.7   103.7     0.00     1.40
1.40     NO
 L0000363         0   0.22310E-06  244393.2 4090187.8   103.7     0.00     1.40
1.40     NO
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1.40     NO
 L0000365         0   0.22310E-06  244387.2 4090188.0   103.6     0.00     1.40
1.40     NO
 L0000366         0   0.22310E-06  244384.2 4090188.1   103.6     0.00     1.40
1.40     NO
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1.40     NO
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1.40     NO
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L0000372	0	0.22310E-06	244366.3	4090188.6	103.6	0.00	1.40	1.40 NO
L0000373	0	0.22310E-06	244363.3	4090188.6	103.6	0.00	1.40	1.40 NO
L0000374	0	0.22310E-06	244360.3	4090188.7	103.6	0.00	1.40	1.40 NO
L0000375	0	0.22310E-06	244357.3	4090188.8	103.6	0.00	1.40	1.40 NO
L0000376	0	0.22310E-06	244354.3	4090188.9	103.6	0.00	1.40	1.40 NO
L0000377	0	0.22310E-06	244351.3	4090189.0	103.6	0.00	1.40	1.40 NO
L0000378	0	0.22310E-06	244348.3	4090189.1	103.6	0.00	1.40	1.40 NO
L0000379	0	0.22310E-06	244345.3	4090189.1	103.6	0.00	1.40	1.40 NO
L0000380	0	0.22310E-06	244342.3	4090189.2	103.6	0.00	1.40	1.40 NO
L0000381	0	0.22310E-06	244339.3	4090189.3	103.6	0.00	1.40	1.40 NO
L0000382	0	0.22310E-06	244336.3	4090189.4	103.6	0.00	1.40	1.40 NO
L0000383	0	0.22310E-06	244333.3	4090189.5	103.6	0.00	1.40	1.40 NO
L0000384	0	0.22310E-06	244330.3	4090189.6	103.6	0.00	1.40	1.40 NO
L0000385	0	0.22310E-06	244327.3	4090189.6	103.6	0.00	1.40	1.40 NO
L0000386	0	0.22310E-06	244324.3	4090189.7	103.6	0.00	1.40	1.40 NO
L0000387	0	0.22310E-06	244321.3	4090189.8	103.6	0.00	1.40	1.40 NO
L0000388	0	0.22310E-06	244318.3	4090189.9	103.6	0.00	1.40	1.40 NO
L0000389	0	0.22310E-06	244315.3	4090190.0	103.6	0.00	1.40	1.40 NO
L0000390	0	0.22310E-06	244312.3	4090190.1	103.6	0.00	1.40	1.40 NO
L0000391	0	0.22310E-06	244309.3	4090190.1	103.6	0.00	1.40	1.40 NO
L0000392	0	0.22310E-06	244306.3	4090190.2	103.6	0.00	1.40	1.40 NO
L0000393	0	0.22310E-06	244303.3	4090190.3	103.6	0.00	1.40	1.40 NO

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1.40     NO
 L0000396         0   0.22310E-06  244294.3 4090190.6   103.6     0.00     1.40
1.40     NO
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1.40     NO
 L0000398         0   0.22310E-06  244288.3 4090190.7   103.6     0.00     1.40
1.40     NO
 L0000399         0   0.22310E-06  244285.3 4090190.8   103.6     0.00     1.40
1.40     NO
 L0000400         0   0.22310E-06  244282.3 4090190.9   103.6     0.00     1.40
1.40     NO
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        19:21:03

                                  PAGE  13
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*


                                                    *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 L0000401         0   0.22310E-06  244279.3 4090191.0   103.6     0.00     1.40
1.40     NO
 L0000402         0   0.22310E-06  244276.3 4090191.1   103.6     0.00     1.40
1.40     NO
 L0000403         0   0.22310E-06  244273.3 4090191.1   103.6     0.00     1.40
1.40     NO
 L0000404         0   0.22310E-06  244270.3 4090191.2   103.6     0.00     1.40
1.40     NO
 L0000405         0   0.22310E-06  244267.3 4090191.3   103.6     0.00     1.40
1.40     NO
 L0000406         0   0.22310E-06  244264.3 4090191.4   103.6     0.00     1.40
1.40     NO
 L0000407         0   0.22310E-06  244261.3 4090191.5   103.6     0.00     1.40
1.40     NO
 L0000408         0   0.22310E-06  244258.3 4090191.6   103.6     0.00     1.40
1.40     NO
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L0000409	0	0.22310E-06	244255.3	4090191.6	103.6	0.00	1.40	1.40 NO
L0000410	0	0.22310E-06	244252.3	4090191.7	103.6	0.00	1.40	1.40 NO
L0000411	0	0.22310E-06	244249.3	4090191.8	103.6	0.00	1.40	1.40 NO
L0000412	0	0.22310E-06	244246.3	4090191.9	103.6	0.00	1.40	1.40 NO
L0000413	0	0.22310E-06	244243.3	4090192.0	103.6	0.00	1.40	1.40 NO
L0000414	0	0.22310E-06	244240.3	4090192.1	103.6	0.00	1.40	1.40 NO
L0000415	0	0.22310E-06	244237.3	4090192.1	103.6	0.00	1.40	1.40 NO
L0000416	0	0.22310E-06	244234.3	4090192.2	103.6	0.00	1.40	1.40 NO
L0000417	0	0.22310E-06	244231.3	4090192.3	103.6	0.00	1.40	1.40 NO
L0000418	0	0.22310E-06	244228.3	4090192.4	103.6	0.00	1.40	1.40 NO
L0000419	0	0.22310E-06	244225.3	4090192.5	103.6	0.00	1.40	1.40 NO
L0000420	0	0.22310E-06	244222.3	4090192.6	103.6	0.00	1.40	1.40 NO
L0000421	0	0.22310E-06	244219.3	4090192.6	103.6	0.00	1.40	1.40 NO
L0000422	0	0.22310E-06	244216.3	4090192.7	103.6	0.00	1.40	1.40 NO
L0000423	0	0.22310E-06	244213.3	4090192.8	103.6	0.00	1.40	1.40 NO
L0000424	0	0.22310E-06	244210.3	4090192.9	103.6	0.00	1.40	1.40 NO
L0000425	0	0.22310E-06	244207.3	4090193.0	103.6	0.00	1.40	1.40 NO
L0000426	0	0.22310E-06	244204.3	4090193.1	103.6	0.00	1.40	1.40 NO
L0000427	0	0.22310E-06	244201.3	4090193.1	103.6	0.00	1.40	1.40 NO
L0000428	0	0.22310E-06	244198.3	4090193.2	103.6	0.00	1.40	1.40 NO
L0000429	0	0.22310E-06	244195.3	4090193.3	103.6	0.00	1.40	1.40 NO
L0000430	0	0.22310E-06	244192.3	4090193.4	103.6	0.00	1.40	1.40 NO
L0000431	0	0.22310E-06	244189.3	4090193.5	103.6	0.00	1.40	1.40 NO
L0000432	0	0.22310E-06	244186.3	4090193.6	103.6	0.00	1.40	1.40 NO
L0000433	0	0.22310E-06	244183.3	4090193.6	103.6	0.00	1.40	1.40 NO

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 L0000434         0   0.22310E-06  244180.3 4090193.7   103.6     0.00     1.40
1.40     NO
 L0000435         0   0.22310E-06  244177.3 4090193.8   103.6     0.00     1.40
1.40     NO
 L0000436         0   0.22310E-06  244174.3 4090193.9   103.6     0.00     1.40
1.40     NO
 L0000437         0   0.22310E-06  244171.3 4090194.0   103.6     0.00     1.40
1.40     NO
 L0000438         0   0.22310E-06  244168.3 4090194.1   103.6     0.00     1.40
1.40     NO
 L0000439         0   0.22310E-06  244165.3 4090194.1   103.6     0.00     1.40
1.40     NO
 L0000440         0   0.22310E-06  244162.3 4090194.2   103.7     0.00     1.40
1.40     NO
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        19:21:03

                                  PAGE  14
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*


                                                    *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 L0000441         0   0.22310E-06  244159.3 4090194.3   103.7     0.00     1.40
1.40     NO
 L0000442         0   0.22310E-06  244156.3 4090194.4   103.7     0.00     1.40
1.40     NO
 L0000443         0   0.22310E-06  244153.3 4090194.5   103.7     0.00     1.40
1.40     NO
 L0000444         0   0.22310E-06  244150.3 4090194.6   103.7     0.00     1.40
1.40     NO
 L0000445         0   0.22310E-06  244147.3 4090194.6   103.7     0.00     1.40
1.40     NO
 L0000446         0   0.22310E-06  244144.3 4090194.7   103.7     0.00     1.40
1.40     NO
 L0000447         0   0.22310E-06  244141.3 4090194.8   103.7     0.00     1.40
1.40     NO
 L0000448         0   0.22310E-06  244138.3 4090194.9   103.8     0.00     1.40
1.40     NO
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L0000449	0	0.22310E-06	244135.3	4090195.0	103.8	0.00	1.40	1.40 NO
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L0000451	0	0.22310E-06	244129.3	4090195.1	103.8	0.00	1.40	1.40 NO
L0000452	0	0.22310E-06	244126.3	4090195.2	103.9	0.00	1.40	1.40 NO
L0000453	0	0.22310E-06	244123.3	4090195.3	103.9	0.00	1.40	1.40 NO
L0000454	0	0.22310E-06	244120.3	4090195.4	103.9	0.00	1.40	1.40 NO
L0000455	0	0.22310E-06	244117.3	4090195.5	103.9	0.00	1.40	1.40 NO
L0000456	0	0.22310E-06	244114.3	4090195.6	103.9	0.00	1.40	1.40 NO
L0000457	0	0.22310E-06	244111.3	4090195.6	103.9	0.00	1.40	1.40 NO
L0000458	0	0.22310E-06	244108.4	4090195.7	103.9	0.00	1.40	1.40 NO
L0000459	0	0.22310E-06	244105.4	4090195.8	103.9	0.00	1.40	1.40 NO
L0000460	0	0.22310E-06	244102.4	4090195.9	103.9	0.00	1.40	1.40 NO
L0000461	0	0.22310E-06	244099.4	4090196.0	103.9	0.00	1.40	1.40 NO
L0000462	0	0.22310E-06	244096.4	4090196.1	103.9	0.00	1.40	1.40 NO
L0000463	0	0.22310E-06	244093.4	4090196.1	103.9	0.00	1.40	1.40 NO
L0000464	0	0.22310E-06	244090.4	4090196.2	103.9	0.00	1.40	1.40 NO
L0000465	0	0.22310E-06	244087.4	4090196.3	103.9	0.00	1.40	1.40 NO
L0000466	0	0.22310E-06	244084.4	4090196.4	103.9	0.00	1.40	1.40 NO
L0000467	0	0.22310E-06	244081.4	4090196.5	103.9	0.00	1.40	1.40 NO
L0000468	0	0.22310E-06	244078.4	4090196.6	103.9	0.00	1.40	1.40 NO
L0000469	0	0.22310E-06	244075.4	4090196.6	103.8	0.00	1.40	1.40 NO
L0000470	0	0.22310E-06	244072.4	4090196.7	103.8	0.00	1.40	1.40 NO
L0000471	0	0.22310E-06	244069.4	4090196.8	103.8	0.00	1.40	1.40 NO
L0000472	0	0.22310E-06	244066.4	4090196.9	103.8	0.00	1.40	1.40 NO
L0000473	0	0.22310E-06	244063.4	4090197.0	103.7	0.00	1.40	1.40 NO

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 L0000474         0   0.22310E-06  244060.4 4090197.1   103.7     0.00     1.40
1.40     NO
 L0000475         0   0.22310E-06  244057.4 4090197.1   103.7     0.00     1.40
1.40     NO
 L0000476         0   0.22310E-06  244054.4 4090197.2   103.7     0.00     1.40
1.40     NO
 L0000477         0   0.22310E-06  244051.4 4090197.3   103.8     0.00     1.40
1.40     NO
 L0000478         0   0.22310E-06  244048.4 4090197.4   103.8     0.00     1.40
1.40     NO
 L0000479         0   0.22310E-06  244045.4 4090197.5   103.8     0.00     1.40
1.40     NO
 L0000480         0   0.22310E-06  244042.4 4090197.6   103.8     0.00     1.40
1.40     NO
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        19:21:03

                                  PAGE  15
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*


                                                    *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 L0000481         0   0.22310E-06  244039.4 4090197.6   103.8     0.00     1.40
1.40     NO
 L0000482         0   0.22310E-06  244036.4 4090197.7   103.9     0.00     1.40
1.40     NO
 L0000483         0   0.22310E-06  244033.4 4090197.8   103.9     0.00     1.40
1.40     NO
 L0000484         0   0.22310E-06  244030.4 4090197.9   103.9     0.00     1.40
1.40     NO
 L0000485         0   0.22310E-06  244027.4 4090198.0   103.9     0.00     1.40
1.40     NO
 L0000486         0   0.22310E-06  244024.4 4090198.1   103.9     0.00     1.40
1.40     NO
 L0000487         0   0.22310E-06  244021.4 4090198.1   103.9     0.00     1.40
1.40     NO
 L0000488         0   0.22310E-06  244018.4 4090198.2   103.9     0.00     1.40
1.40     NO
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L0000489	0	0.22310E-06	244015.4	4090198.3	103.9	0.00	1.40	1.40 NO
L0000490	0	0.22310E-06	244012.4	4090198.4	103.9	0.00	1.40	1.40 NO
L0000491	0	0.22310E-06	244009.4	4090198.5	103.9	0.00	1.40	1.40 NO
L0000492	0	0.22310E-06	244006.4	4090198.6	103.9	0.00	1.40	1.40 NO
L0000493	0	0.22310E-06	244003.4	4090198.6	103.9	0.00	1.40	1.40 NO
L0000494	0	0.22310E-06	244000.4	4090198.7	103.9	0.00	1.40	1.40 NO
L0000495	0	0.22310E-06	243997.4	4090198.8	103.9	0.00	1.40	1.40 NO
L0000496	0	0.22310E-06	243994.4	4090198.9	103.9	0.00	1.40	1.40 NO
L0000497	0	0.22310E-06	243991.4	4090199.0	103.9	0.00	1.40	1.40 NO
L0000498	0	0.22310E-06	243988.4	4090199.1	103.9	0.00	1.40	1.40 NO
L0000499	0	0.22310E-06	243985.4	4090199.1	103.9	0.00	1.40	1.40 NO
L0000500	0	0.22310E-06	243982.4	4090199.2	103.9	0.00	1.40	1.40 NO
L0000501	0	0.22310E-06	243979.4	4090199.3	103.9	0.00	1.40	1.40 NO
L0000502	0	0.22310E-06	243976.4	4090199.4	103.9	0.00	1.40	1.40 NO
L0000503	0	0.22310E-06	243973.4	4090199.5	103.9	0.00	1.40	1.40 NO
L0000504	0	0.22310E-06	243970.4	4090199.6	103.9	0.00	1.40	1.40 NO
L0000505	0	0.22310E-06	243967.4	4090199.7	103.9	0.00	1.40	1.40 NO
L0000506	0	0.22310E-06	243964.4	4090199.7	103.9	0.00	1.40	1.40 NO
L0000507	0	0.22310E-06	243961.4	4090199.8	103.9	0.00	1.40	1.40 NO
L0000508	0	0.22310E-06	243958.4	4090199.9	103.8	0.00	1.40	1.40 NO
L0000509	0	0.22310E-06	243955.4	4090200.0	103.8	0.00	1.40	1.40 NO
L0000510	0	0.22310E-06	243952.4	4090200.1	103.8	0.00	1.40	1.40 NO
L0000511	0	0.22310E-06	243949.4	4090200.2	103.8	0.00	1.40	1.40 NO
L0000512	0	0.22310E-06	243946.4	4090200.2	103.7	0.00	1.40	1.40 NO
L0000513	0	0.22310E-06	243943.4	4090200.3	103.7	0.00	1.40	1.40 NO

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1.40     NO
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1.40     NO
 L0000516         0   0.22310E-06  243934.4 4090200.6   103.6     0.00     1.40
1.40     NO
 L0000517         0   0.22310E-06  243931.4 4090200.7   103.6     0.00     1.40
1.40     NO
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1.40     NO
 L0000519         0   0.22310E-06  243925.4 4090200.8   103.6     0.00     1.40
1.40     NO
 L0000520         0   0.22310E-06  243922.4 4090200.9   103.6     0.00     1.40
1.40     NO
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        19:21:03

                                  PAGE  16
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*


                                                    *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 L0000521         0   0.22310E-06  243919.4 4090201.0   103.6     0.00     1.40
1.40     NO
 L0000522         0   0.22310E-06  243916.4 4090201.1   103.6     0.00     1.40
1.40     NO
 L0000523         0   0.22310E-06  243913.4 4090201.2   103.6     0.00     1.40
1.40     NO
 L0000524         0   0.22310E-06  243910.4 4090201.2   103.6     0.00     1.40
1.40     NO
 L0000525         0   0.22310E-06  243907.4 4090201.3   103.6     0.00     1.40
1.40     NO
 L0000526         0   0.22310E-06  243904.4 4090201.4   103.6     0.00     1.40
1.40     NO
 L0000527         0   0.22310E-06  243901.4 4090201.5   103.6     0.00     1.40
1.40     NO
 L0000528         0   0.22310E-06  243898.4 4090201.6   103.5     0.00     1.40
1.40     NO
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L0000529	0	0.22310E-06	243895.4	4090201.7	103.5	0.00	1.40	1.40 NO
L0000530	0	0.22310E-06	243892.4	4090201.7	103.5	0.00	1.40	1.40 NO
L0000531	0	0.22310E-06	243889.4	4090201.8	103.4	0.00	1.40	1.40 NO
L0000532	0	0.22310E-06	243886.4	4090201.9	103.4	0.00	1.40	1.40 NO
L0000533	0	0.22310E-06	243883.4	4090202.0	103.4	0.00	1.40	1.40 NO
L0000534	0	0.22310E-06	243880.4	4090202.1	103.3	0.00	1.40	1.40 NO
L0000535	0	0.22310E-06	243877.4	4090202.2	103.3	0.00	1.40	1.40 NO
L0000536	0	0.22310E-06	243874.4	4090202.2	103.3	0.00	1.40	1.40 NO
L0000537	0	0.22310E-06	243871.4	4090202.3	103.3	0.00	1.40	1.40 NO
L0000538	0	0.22310E-06	243868.4	4090202.4	103.3	0.00	1.40	1.40 NO
L0000539	0	0.22310E-06	243865.4	4090202.5	103.3	0.00	1.40	1.40 NO
L0000540	0	0.22310E-06	243862.4	4090202.6	103.3	0.00	1.40	1.40 NO
L0000541	0	0.22310E-06	243859.4	4090202.7	103.3	0.00	1.40	1.40 NO
L0000542	0	0.22310E-06	243856.4	4090202.7	103.3	0.00	1.40	1.40 NO
L0000543	0	0.22310E-06	243853.4	4090202.8	103.3	0.00	1.40	1.40 NO
L0000544	0	0.22310E-06	243850.5	4090202.9	103.3	0.00	1.40	1.40 NO
L0000545	0	0.22310E-06	243847.5	4090203.0	103.3	0.00	1.40	1.40 NO
L0000546	0	0.22310E-06	243844.5	4090203.1	103.3	0.00	1.40	1.40 NO
L0000547	0	0.22310E-06	243841.5	4090203.2	103.3	0.00	1.40	1.40 NO
L0000548	0	0.22310E-06	243838.5	4090203.2	103.2	0.00	1.40	1.40 NO
L0000549	0	0.22310E-06	243835.5	4090203.3	103.2	0.00	1.40	1.40 NO
L0000550	0	0.22310E-06	243832.5	4090203.4	103.2	0.00	1.40	1.40 NO
L0000551	0	0.22310E-06	243829.5	4090203.5	103.1	0.00	1.40	1.40 NO
L0000552	0	0.22310E-06	243826.5	4090203.6	103.1	0.00	1.40	1.40 NO
L0000553	0	0.22310E-06	243823.5	4090203.7	103.1	0.00	1.40	1.40 NO

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 L0000554         0   0.22310E-06  243820.5 4090203.7   103.0     0.00     1.40
1.40     NO
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1.40     NO
 L0000556         0   0.22310E-06  243814.5 4090203.9   102.7     0.00     1.40
1.40     NO
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1.40     NO
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1.40     NO
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1.40     NO
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1.40     NO
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        19:21:03

                                  PAGE  17
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*


                                                    *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

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1.40     NO
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1.40     NO
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1.40     NO
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1.40     NO
 L0000567         0   0.22310E-06  243781.5 4090204.8   102.5     0.00     1.40
1.40     NO
 L0000568         0   0.22310E-06  243778.5 4090204.9   102.5     0.00     1.40
1.40     NO
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L0000571	0	0.22310E-06	243769.5	4090205.2	102.6	0.00	1.40	1.40 NO
L0000572	0	0.22310E-06	243766.5	4090205.2	102.6	0.00	1.40	1.40 NO
L0000573	0	0.22310E-06	243763.5	4090205.3	102.7	0.00	1.40	1.40 NO
L0000574	0	0.22310E-06	243760.5	4090205.4	102.7	0.00	1.40	1.40 NO
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L0000577	0	0.22310E-06	243751.5	4090205.7	102.6	0.00	1.40	1.40 NO
L0000578	0	0.22310E-06	243748.5	4090205.7	102.5	0.00	1.40	1.40 NO
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L0000580	0	0.22310E-06	243742.5	4090205.9	102.4	0.00	1.40	1.40 NO
L0000581	0	0.22310E-06	243739.5	4090206.0	102.3	0.00	1.40	1.40 NO
L0000582	0	0.22310E-06	243736.5	4090206.1	102.3	0.00	1.40	1.40 NO
L0000583	0	0.22310E-06	243733.5	4090206.2	102.2	0.00	1.40	1.40 NO
L0000584	0	0.22310E-06	243730.5	4090206.2	102.1	0.00	1.40	1.40 NO
L0000585	0	0.22310E-06	243727.5	4090206.3	102.1	0.00	1.40	1.40 NO
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L0000589	0	0.22310E-06	243715.5	4090206.7	102.1	0.00	1.40	1.40 NO
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L0000591	0	0.22310E-06	243709.5	4090206.8	102.1	0.00	1.40	1.40 NO
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  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        19:21:03

                                  PAGE  18
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*


                                                    *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

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1.40     NO
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  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***       02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***       19:21:03

                                 PAGE  19
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*


                                          *** SOURCE IDs DEFINING SOURCE GROUPS
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SRCGROUP ID	SOURCE IDs
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	L0000640, L0000641, L0000642, L0000643, L0000644, L0000645, L0000646, L0000647,
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 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                                        *** SOURCE IDs DEFINING SOURCE GROUPS
***

 SRCGROUP ID   SOURCE IDs
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  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
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                                  PAGE  21
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*


                                          *** SOURCE IDs DEFINING SOURCE GROUPS
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SRCGROUP ID	SOURCE IDs

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 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                                          *** SOURCE IDs DEFINING SOURCE GROUPS
***

 SRCGROUP ID   SOURCE IDs
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L0000530   , L0000531   , L0000532   ,

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

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  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
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                                  PAGE  24
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                          *** METEOROLOGICAL DAYS SELECTED FOR
PROCESSING ***
                                                              (1=YES; 0=NO)

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1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

               NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON
WHAT IS INCLUDED IN THE DATA FILE.
```

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.SFC
Met Version: 18081
Profile file: C:\Users\kheck\Desktop\Met Data\Madera_2015-2017.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 93242 Upper air station no.: 23230
Name: UNKNOWN Name: OAKLAND/WSO_AP
Year: 2015 Year: 2015

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
15	01	01	1	01	-13.2	0.151	-9.000	-9.000	-999.	141.	25.1	0.04	0.81	1.00	2.28	83.	10.0	273.8	2.0
15	01	01	1	02	-19.2	0.186	-9.000	-9.000	-999.	192.	37.9	0.04	0.81	1.00	2.76	83.	10.0	273.1	2.0
15	01	01	1	03	-19.8	0.191	-9.000	-9.000	-999.	200.	40.0	0.04	0.81	1.00	2.83	83.	10.0	272.5	2.0
15	01	01	1	04	-20.9	0.201	-9.000	-9.000	-999.	217.	44.6	0.04	0.81	1.00	3.01	90.	10.0	272.0	2.0
15	01	01	1	05	-9.9	0.130	-9.000	-9.000	-999.	114.	20.1	0.04	0.81	1.00	1.99	66.	10.0	272.5	2.0
15	01	01	1	06	-4.1	0.085	-9.000	-9.000	-999.	60.	13.5	0.06	0.81	1.00	1.21	27.	10.0	270.4	2.0
15	01	01	1	07	-3.5	0.076	-9.000	-9.000	-999.	50.	11.4	0.02	0.81	1.00	1.26	272.	10.0	270.9	2.0
15	01	01	1	08	-3.8	0.082	-9.000	-9.000	-999.	57.	13.1	0.05	0.81						

```
0.67    1.21  141.   10.0  271.4    2.0
 15 01 01   1 09    4.0  0.117  0.159  0.010   36.   96.   - 36.6  0.04   0.81
0.37    1.48  102.   10.0  275.4    2.0
 15 01 01   1 10   46.6  0.198  0.780  0.010  368.  212.   - 15.1  0.04   0.81
0.26    2.30   80.   10.0  278.8    2.0
 15 01 01   1 11   77.9  0.206  0.951  0.009  399.  225.   - 10.2  0.04   0.81
0.23    2.30   89.   10.0  280.9    2.0
 15 01 01   1 12   94.6  0.164  1.043  0.007  433.  159.   -  4.2  0.04   0.81
0.21    1.65  111.   10.0  282.0    2.0
 15 01 01   1 13   95.8  0.180  1.109  0.006  514.  183.   -  5.5  0.04   0.81
0.21    1.88  118.   10.0  283.1    2.0
 15 01 01   1 14   81.5  0.168  1.070  0.005  541.  165.   -  5.2  0.05   0.81
0.22    1.65  142.   10.0  283.8    2.0
 15 01 01   1 15   52.4  0.141  0.933  0.005  559.  127.   -  4.8  0.04   0.81
0.26    1.45   95.   10.0  284.2    2.0
 15 01 01   1 16   11.1  0.178  0.558  0.005  562.  180.   - 45.5  0.04   0.81
0.35    2.20  153.   10.0  283.8    2.0
 15 01 01   1 17  - 10.7  0.144 -9.000 -9.000 -999.  131.     25.0  0.07   0.81
0.61    1.94  181.   10.0  282.5    2.0
 15 01 01   1 18  - 15.7  0.169 -9.000 -9.000 -999.  167.     31.4  0.06   0.81
1.00    2.36   17.   10.0  279.2    2.0
 15 01 01   1 19  - 15.8  0.169 -9.000 -9.000 -999.  167.     31.4  0.06   0.81
1.00    2.36   24.   10.0  278.8    2.0
 15 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.05   0.81
1.00    0.00    0.   10.0  275.4    2.0
 15 01 01   1 21 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.05   0.81
1.00    0.00    0.   10.0  274.9    2.0
 15 01 01   1 22  - 14.2  0.157 -9.000 -9.000 -999.  149.     27.1  0.04   0.81
1.00    2.36   62.   10.0  275.4    2.0
 15 01 01   1 23  - 20.0  0.193 -9.000 -9.000 -999.  203.     40.9  0.04   0.81
1.00    2.86   80.   10.0  273.8    2.0
 15 01 01   1 24  - 20.0  0.193 -9.000 -9.000 -999.  203.     40.9  0.04   0.81
1.00    2.86   80.   10.0  273.1    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 15 01 01 01   10.0 1   83.    2.28   273.8   99.0  - 99.00  - 99.00

 F indicates top of profile (=1) or below (=0)
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        19:21:03

                                  PAGE  26
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   3
YEARS FOR SOURCE GROUP: ALL      ***
```

```
                                  INCLUDING SOURCE(S):     STCK1       , STCK2
 , STCK3       , STCK4       , L0000628    ,
                 L0000629    , L0000630    , L0000631    , L0000632    , L0000633
 , L0000634    , L0000635    , L0000636    ,
                 L0000637    , L0000638    , L0000639    , L0000640    , L0000641
 , L0000642    , L0000643    , L0000644    ,
                 L0000645    , L0000646    , L0000647    , L0000648    , L0000649
 , L0000023    , L0000024    ,  . . .      ,

                                        *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                     ** CONC OF PM_10    IN MICROGRAMS/M**3
                  **

       X-COORD (M)   Y-COORD (M)        CONC                        X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
         244145.94    4090086.13        0.00586                       244128.11
4090026.63        0.00425
         244139.18    4090005.24        0.00392                       244141.90
4089962.66        0.00322
         244202.02    4089862.57        0.00212                       244208.76
4089912.18        0.00269
         244205.47    4089961.18        0.00350                       244198.99
4090007.34        0.00442
         244212.30    4090073.29        0.00639                       244369.73
4090147.94        0.01725
         244372.41    4090113.39        0.01481                       244369.26
4090069.88        0.01057
         244369.71    4090029.43        0.00728                       244357.33
4089985.24        0.00500
         244359.92    4089947.53        0.00400                       244368.33
4089907.82        0.00339
         244431.92    4090008.37        0.00721                       244432.01
4089966.78        0.00551
         244432.38    4089909.62        0.00408

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 *** AERMET - VERSION  18081 ***   ***
                       ***        19:21:03

                                    PAGE  27
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                 *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                   INCLUDING SOURCE(S):     STCK1       , STCK2
```

```
 , STCK3       , STCK4       , L0000628    ,
                 L0000629    , L0000630    , L0000631    , L0000632    , L0000633
 , L0000634    , L0000635    , L0000636    ,
                 L0000637    , L0000638    , L0000639    , L0000640    , L0000641
 , L0000642    , L0000643    , L0000644    ,
                 L0000645    , L0000646    , L0000647    , L0000648    , L0000649
 , L0000023    , L0000024    ,  . . .      ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                       ** CONC OF PM_10    IN MICROGRAMS/M**3
                  **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        244145.94   4090086.13        0.15718  (15021708)               244128.11
 4090026.63        0.14428  (15021608)
        244139.18   4090005.24        0.13500  (16020903)               244141.90
 4089962.66        0.12677  (16011021)
        244202.02   4089862.57        0.11201  (16021103)               244208.76
 4089912.18        0.12406  (16021208)
        244205.47   4089961.18        0.15243  (15020208)               244198.99
 4090007.34        0.15556  (16010103)
        244212.30   4090073.29        0.18366  (15021608)               244369.73
 4090147.94        0.36191  (16012722)
        244372.41   4090113.39        0.37492  (15021708)               244369.26
 4090069.88        0.32660  (16010103)
        244369.71   4090029.43        0.28146  (15013001)               244357.33
 4089985.24        0.22647  (16021103)
        244359.92   4089947.53        0.20966  (17022108)               244368.33
 4089907.82        0.17943  (15011317)
        244431.92   4090008.37        0.31179  (17121920)               244432.01
 4089966.78        0.25060  (16021406)
        244432.38   4089909.62        0.20864  (17012517)

  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                       ***        19:21:03

                                  PAGE  28
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                  *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS
AVERAGED OVER   3 YEARS ***
```

```
                                    ** CONC OF PM_10    IN MICROGRAMS/M**3
                **



                         NETWORK
GROUP ID                       AVERAGE CONC                RECEPTOR  (XR, YR,
ZELEV, ZHILL, ZFLAG)  OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - -

ALL       1ST HIGHEST VALUE IS       0.01725 AT (  244369.73,  4090147.94,
103.94,   103.94,    0.00)  DC
          2ND HIGHEST VALUE IS       0.01481 AT (  244372.41,  4090113.39,
103.77,   103.77,    0.00)  DC
          3RD HIGHEST VALUE IS       0.01057 AT (  244369.26,  4090069.88,
103.63,   103.63,    0.00)  DC
          4TH HIGHEST VALUE IS       0.00728 AT (  244369.71,  4090029.43,
103.63,   103.63,    0.00)  DC
          5TH HIGHEST VALUE IS       0.00721 AT (  244431.92,  4090008.37,
103.63,   103.63,    0.00)  DC
          6TH HIGHEST VALUE IS       0.00639 AT (  244212.30,  4090073.29,
103.63,   103.63,    0.00)  DC
          7TH HIGHEST VALUE IS       0.00586 AT (  244145.94,  4090086.13,
103.63,   103.63,    0.00)  DC
          8TH HIGHEST VALUE IS       0.00551 AT (  244432.01,  4089966.78,
103.70,   103.70,    0.00)  DC
          9TH HIGHEST VALUE IS       0.00500 AT (  244357.33,  4089985.24,
103.88,   103.88,    0.00)  DC
         10TH HIGHEST VALUE IS       0.00442 AT (  244198.99,  4090007.34,
103.63,   103.63,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                        ***        19:21:03

                                   PAGE  29
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                                ***  THE SUMMARY OF HIGHEST  1-HR
RESULTS ***


                                    ** CONC OF PM_10    IN MICROGRAMS/M**3
                **
```

```
                                                               DATE
                                            NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)             RECEPTOR
(XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS       0.37492  ON 15021708: AT (  244372.41,
4090113.39,   103.77,   103.77,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MaderaRanchos_Operational\MaderaRanchos_Operati ***        02/08/23
 *** AERMET - VERSION  18081 ***   ***
                        ***        19:21:03

                                   PAGE  30
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  ---------  Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of          702 Informational Message(s)

 A Total of        26304 Hours Were Processed

 A Total of          129 Calm Hours Identified

 A Total of          573 Missing Hours Identified (  2.18 Percent)


    ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186    1356       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187    1356       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


    ************************************
```

*** AERMOD Finishes Successfully ***
****

CALCULATIONS

Construction Cancer Risk

Dose (Equation 5.4.1.1)

Exposure Age	Concentration (ug/m3)	Breathing Rate L/kg body weight-day)	Inhalation Absorption Factor	EF	Multiplier	DOSE (mg/kg/day)
Unmitigated						
3rd Trimester	0.27033	365	1	0.958904	0.000001	9.46155E-05
Infant	0.27033	1090	1	0.958904	0.000001	0.00028255
Child	0.27033	572	1	0.958904	0.000001	0.000148274
Adult	0.27033	261	1	0.958904	0.000001	6.76566E-05
Mitigated						
3rd Trimester	0.02068	365	1	0.958904	0.000001	0.000007238
Infant	0.02068	1090	1	0.958904	0.000001	2.16148E-05
Child	0.02068	572	1	0.958904	0.000001	1.13428E-05
Adult	0.02068	233	1	0.958904	0.000001	4.62042E-06

Cancer Risk (Equation 8.2.4A)

Exposure Age	DOSE (mg/kg/day)	CPF (mg/kg-day^-1)	FAH	ASF	Exposure Duration (years)/Averaging Time (years)	RISK
Unmitigated						
3rd Trimester	9.46155E-05	1.1	0.85	10	0.003571429	3.15948E-06
Infant	0.00028255	1.1	0.85	10	0.015428571	4.07599E-05
Child	0.000148274	1.1	0.72	3	0.015428571	5.43548E-06
Adult	6.76566E-05	1.1	0.73	1	0.015428571	8.38207E-07
Mitigated						
3rd Trimester	0.000007238	1.1	0.85	10	0.003571429	2.41698E-07
Infant	2.16148E-05	1.1	0.85	10	0.015428571	3.1181E-06
Child	1.13428E-05	1.1	0.72	3	0.015428571	4.15809E-07
Adult	4.62042E-06	1.1	0.73	1	0.015428571	5.72431E-08

Speciation

Table A1. Summer and Winter E10 Gas Weight Percentages

Substance[1]	CAS	Summer Speciation Profile		Winter Speciation Profile	
		OG691 - Vapor (%)[2]	OG692 - Liquid (%)[2]	OG695 - Vapor (%)[2]	OG694 -Liquid (%)[2]
Benzene	71432	0.549442	0.701959	0.322244	0.715126
Ethyl Benzene	100414	0.141423	1.414346	0.057327	1.104252
n-Hexane	110543	2.169322	1.891804	1.32391	1.805029
Naphthalene	91203	0.000597	0.205096	0.000224	0.12885
Propylene (propene)	115071	N/A	N/A	0.003594	0.000122
Toluene	108883	1.346700	5.803067	0.775147	5.375481
m-Xylene[3]	108383	0.267533	3.491298	0.138782	3.101961
o-Xylene[3]	95476	0.125055	1.959565	0.064221	1.740102
p-Xylene[3]	106423	0.116709	1.461854	0.061281	1.280616
Xylenes[3]	1330207	0.509297	6.912717	0.264284	6.122679

1. Percentages are provided for those substances with OEHHA health values.
2. The weight percentages are as presented in each speciation profile.
3. Propylene is only present in winter gasoline.
4. m-Xylene, o-Xylene, and p-Xylene are combined into a single category of Xylenes as they have the same OEHHA health value. They are shaded in the table to represent this grouping.

Source: https://ww2.arb.ca.gov/sites/default/files/2022-03/Draft%202022%20Gas%20Station%20IWG%20-%20Technical%20Guidance_ADA%20Compliant.pdf

		Summer TAC Speciation Weight Percentages							Winter TAC Speciation Weight Percentages							Annual Average TAC Speciation Weight Percentages						
Emission Source	State of Emissions	Benzene	Ethyl Benzene	n-Hexane	Naphthalene	Propylene	Toluene	Xylenes	Benzene	Ethyl Benzene	n-Hexane	Naphthalene	Propylene	Toluene	Xylenes	Benzene	Ethyl Benzene	n-Hexane	Naphthalene	Propylene	Toluene	Xylenes
Loading	Vapor	0.549442	0.141423	2.16932	0.0006	0	1.3467	0.509297	0.322244	0.057327	1.32391	0.000224	0.003594	0.775147	0.264284	0.456745	0.107112	1.824394	0.000445	0.001466352	1.113506	0.409332
Breathing	Vapor	0.549442	0.141423	2.16932	0.0006	0	1.3467	0.509297	0.322244	0.057327	1.32391	0.000224	0.003594	0.775147	0.264284	0.456745	0.107112	1.824394	0.000445	0.001466352	1.113506	0.409332
Fueling	Vapor	0.549442	0.141423	2.16932	0.0006	0	1.3467	0.509297	0.322244	0.057327	1.32391	0.000224	0.003594	0.775147	0.264284	0.456745	0.107112	1.824394	0.000445	0.001466352	1.113506	0.409332
Spillage	Liquid	0.701959	1.414346	1.8918	0.2051	0	5.80307	6.912717	0.715126	1.104252	1.805029	0.12885	0.000122	5.375481	6.122679	0.707331	1.287828	1.8564	0.173988	0.000049776	5.628612	6.590381

notes: per CARB spillage is the only emissions source that uses liquid emissions. Annual emissions based on Equation 1 in guidance

source: https://ww2.arb.ca.gov/sites/default/files/2022-03/Draft%202022%20Gas%20Station%20IWG%20-%20Technical%20Guidance_ADA%20Compliant.pdf

Spillage, Refueling, Loading, and Breathing Emissions

Table 9. Emission Factors per Gas Station Scenario[1]

Scenario	Scenario Description	Total Organic Gases (TOG) Emission Factors				
		Loading (lb/kgal)	Breathing (lb/kgal)	Fueling (lb/kgal)[2]	Spillage (lb/kgal)	Hose Permeation (lb/kgal)
1	EVR Phase I and EVR Phase II	0.15	0.024	0.089	0.24	0.009
2	EVR Phase I and pre-EVR Phase II	0.15	0.092	0.508	0.42	0.009
3	EVR Phase I (ORVR Only)[3]	0.15	0.76	0.420	0.61	0.009
4	EVR Phase I only	0.15	0.76	1.777	0.61	0.009
5	Pre-EVR Phase I and pre-EVR Phase II	0.38	0.092	0.508	0.42	0.009
6	Pre-EVR Phase I (ORVR Only)[3]	0.38	0.76	0.420	0.61	0.009
7	Pre-EVR Phase I	0.38	0.76	1.777	0.61	0.009

1. Phase II emission factors are based on the volume of fuel dispensed to ORVR and Non-ORVR vehicles at California gas stations.
2. Based on 83 percent ORVR vehicles and 17 percent non-ORVR vehicles.
3. Assumes 100 percent penetration of ORVR vehicles and uses the ORVR fueling emission factor.

Emission Source	Current Control	Potential Additional Control
Loading	Phase I EVR	No new or improved controls
Breathing	Phase II EVR	ISD and Zero Leak Vent Valve to determine need for control
		High Capacity Vapor Processor
Fueling	ORVR	Vehicle Fill Pipe specifications and EOR nozzle to improve seal
	Phase II EVR Nozzles	
Spillage	Phase II EVR "Dripless" Nozzles	No new or improved controls
Hose Permeation	Low Permeation Hoses	No new or improved controls

Source: https://ww2.arb.ca.gov/sites/default/files/2022-03/Draft%202022%20Gas%20Station%20IWG%20-%20Technical%20Guidance_ADA%20Compliant.pdf

Note: Based on current control requirements, which require Phase 1 EVR for loading and Phase II EVR for breathing, fueling, and spillage, Scenario 1 emission factors were used.

TOG Emissions Caclulations

Emissions Source	Source Type	TOG Emission Factors (lb/kgal)	Monthly Throughput (gallons)	Monthly Throughput (kgallons)	Annual Throughput (kgallons)	TOG Annual Emissions (lbs)	TOG Annual Emissions (tons)	TOG Emission Rate (g/s)	Weighted Emission Rate by Source
Loading	Point	0.15	141000	141	1692	253.8	0.1269	0.003650482	0.2982107
Breathing	Point	0.024	141000	141	1692	40.608	0.020304	0.000584077	0.0477137
Fueling	Volume	0.089	141000	141	1692	150.588	0.075294	0.002165952	0.1769384
Spillage	Volume	0.24	141000	141	1692	406.08	0.20304	0.00584077	0.4771372
						TOTAL	**0.425538**	**0.012241281**	

1 ton/year = 0.0287666 g/s

TAC Concentration by Weight

Max TOG Concentration =0.97973 ug/m3

		Weighted TAC Concentration by Emissions Source						
Emissions Source	TAC Maximum Concentration by Emissions Source*	Benzene	Ethyl Benzene	n-Hexane	Naphthalene	Propylene	Toluene	Xylenes
Loading	0.292166004	0.000133445	3.12944E-05	0.000533026	1.2996E-07	4.28418E-07	0.000325329	0.000119593
Breathing	0.046746561	2.13513E-05	5.00711E-06	8.52841E-05	2.07936E-08	6.85469E-08	5.20526E-05	1.91348E-05
Fueling	0.173351829	7.91776E-05	1.8568E-05	0.000316262	7.71097E-08	2.54195E-07	0.000193028	7.09584E-05
Spillage	0.467465606	0.000330653	0.000602015	0.000867803	8.13332E-05	2.32686E-08	0.002631182	0.003080777
	TOTAL Concentration	**0.000564627**	**0.000656885**	**0.001802375**	**8.15611E-05**	**7.74428E-07**	**0.003201592**	**0.003290463**

*Maximum TAC emissions weighted by emissions source. For example, loading emissions account for 29% of gasoline fuel emissions.

Truck Traffic Emissions

On-Site Truck Idling

# of Truck Tripss per Day	PM10 Idling Emissions (g/vehicle/day)	PM10 emissions (grams/day)	PM2.5 emissions (g/s)
394.6	0.035714966	14.09312552	0.000163115

*idling emissions based on aggregate speeds 4.07787E-05

**idling emissions split over 4 point sources

On-Site Truck Traffic

Truck Type	# of Trucks per Day	Vehicle Speed (mph)	PM10 Running Emissions (grams per Mile)	Distance (miles/trip)*	PM10 emissions (grams/day)	PM10 emissions (g/s)
HHDT	394.6	5	0.125869301	0.056818182	2.822046947	3.26626E-05

*Assumed that trucks would travel to the midpoint of the gas station area of the site and back (approx. 300 feet)

Off-Site Diesel Truck Traffic

Truck Type	# of Trucks per Day	Vehicle Speed (mph)	PM10 Running Emissions (grams per Mile)	Distance (miles/trip)*	PM10 emissions (grams/day)	PM10 emissions (g/s)
HDDT	394.6	Aggregate	0.029631392	1	11.69254716	0.00013533

Concentration (calculated in AERMOD)

Source	Concentration at the MEIR (ug/m3)
operational trucks (on-road & off-road)	0.01725

Source: EMFAC2021 (v1.0.2) Emission Rates
Region Type: County
Region: Madera
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

Region	Calendar Y	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	Percentage by Vehicle Category and Fuel Type	Total Trips by Vehicle Category and Fuel Type*	PM10_RUNEX	PM10_IDLEX	PM10_STREX	PM10_PMTW	PM10_PMBW
Madera	2024	HHDT	Aggregate	Aggregate	Gasoline	0.931004563	40.32903139	6.95219E-06	0.031841009	0.008964	0	0.002939	0.02	0.106183
Madera	2024	HHDT	Aggregate	Aggregate	Diesel	3360.676069	499891.3943	0.086174588	394.6796116	0.029631	0.035715	0	0.035825	0.075908
Madera	2024	HHDT	Aggregate	Aggregate	Electricity	8.492911642	1062.162345	0.000183103	0.838609799	0	0	0	0.035756	0.038229
Madera	2024	HHDT	Aggregate	Aggregate	Natural Gas	47.9947984	3145.341143	0.000542215	2.483343452	0.002376	0.039278	0	0.036	0.104072
Madera	2024	LDA	Aggregate	Aggregate	Gasoline	58047.47177	2414539.997	0.416234388	1906.353498	0.001173	0	0.00212	0.008	0.004496
Madera	2024	LDA	Aggregate	Aggregate	Diesel	171.4787883	5618.357312	0.00096853	4.435865684	0.015818	0	0	0.008	0.004576
Madera	2024	LDA	Aggregate	Aggregate	Electricity	2382.684726	117722.2587	0.020293742	92.94533945	0	0	0	0.008	0.004367
Madera	2024	LDA	Aggregate	Aggregate	Plug-in Hybrid	1508.66205	74973.42538	0.012924415	59.19382238	0.000606	0	0.002201	0.008	0.003337
Madera	2024	LDT1	Aggregate	Aggregate	Gasoline	6498.184812	205207.4148	0.035375013	162.0175576	0.002075	0	0.003953	0.008	0.005654
Madera	2024	LDT1	Aggregate	Aggregate	Diesel	3.132772476	30.02724473	5.1763E-06	0.023707432	0.242136	0	0	0.008	0.006349
Madera	2024	LDT1	Aggregate	Aggregate	Electricity	7.506915965	340.451448	5.86893E-05	0.268796876	0	0	0	0.008	0.004373
Madera	2024	LDT1	Aggregate	Aggregate	Plug-in Hybrid	5.689216247	302.2944818	5.21115E-05	0.238670779	0.000369	0	0.001505	0.008	0.00343
Madera	2024	LDT2	Aggregate	Aggregate	Gasoline	27772.06475	1097803.139	0.189246572	866.7493004	0.001243	0	0.002226	0.008	0.005394
Madera	2024	LDT2	Aggregate	Aggregate	Diesel	73.7272881	3222.345025	0.000555489	2.544140382	0.005037	0	0	0.008	0.005229
Madera	2024	LDT2	Aggregate	Aggregate	Electricity	132.5236939	4937.391851	0.00085114	3.898222534	0	0	0	0.008	0.004359
Madera	2024	LDT2	Aggregate	Aggregate	Plug-in Hybrid	181.6564097	9277.07288	0.001599243	7.324534014	0.000468	0	0.001816	0.008	0.00339
Madera	2024	LHDT1	Aggregate	Aggregate	Gasoline	2871.652957	102257.9202	0.017627897	80.73576916	0.001993	0	0.000429	0.008	0.078
Madera	2024	LHDT1	Aggregate	Aggregate	Diesel	3231.248905	113754.5913	0.019609769	89.81274421	0.05477	0.027704	0	0.012	0.078
Madera	2024	LHDT1	Aggregate	Aggregate	Electricity	5.630618986	436.3643022	7.52234E-05	0.344523021	0	0	0	0.008	0.039
Madera	2024	LHDT2	Aggregate	Aggregate	Gasoline	370.2745171	13233.31936	0.002281247	10.44811214	0.001578	0	0.000288	0.008	0.091
Madera	2024	LHDT2	Aggregate	Aggregate	Diesel	1160.992157	42888.43664	0.007393393	33.86173819	0.046071	0.02742	0	0.012	0.091
Madera	2024	LHDT2	Aggregate	Aggregate	Electricity	1.457380268	107.0119658	1.84474E-05	0.084489234	0	0	0	0.008	0.0455
Madera	2024	MCY	Aggregate	Aggregate	Gasoline	3622.206348	19585.33044	0.003376249	15.46322001	0.001742	0	0.003426	0.004	0.012
Madera	2024	MDV	Aggregate	Aggregate	Gasoline	26136.00598	936274.2092	0.161401146	739.2172488	0.001288	0	0.002378	0.008	0.005633
Madera	2024	MDV	Aggregate	Aggregate	Diesel	481.4826968	18774.59536	0.003236489	14.82311976	0.007312	0	0	0.008	0.005581
Madera	2024	MDV	Aggregate	Aggregate	Electricity	143.693916	5390.180632	0.000929195	4.255713186	0	0	0	0.008	0.004358
Madera	2024	MDV	Aggregate	Aggregate	Plug-in Hybrid	136.8471934	6576.778431	0.001133749	5.192568598	0.000643	0	0.002388	0.008	0.003351
Madera	2024	MH	Aggregate	Aggregate	Gasoline	528.8996016	4638.840513	0.000799674	3.662507082	0.001711	0	0.000401	0.012	0.045048
Madera	2024	MH	Aggregate	Aggregate	Diesel	243.8807753	2075.507197	0.00035779	1.638676688	0.163154	0	0	0.016	0.044842
Madera	2024	MHDT	Aggregate	Aggregate	Gasoline	167.188017	12014.8345	0.002071197	9.486080909	0.001533	0	0.000655	0.012	0.045048
Madera	2024	MHDT	Aggregate	Aggregate	Diesel	1274.14859	61577.4457	0.010615128	48.61728493	0.014488	0.036511	0	0.012	0.04479
Madera	2024	MHDT	Aggregate	Aggregate	Electricity	3.29055168	211.8486929	3.65199E-05	0.167261051	0	0	0	0.012	0.022479
Madera	2024	MHDT	Aggregate	Aggregate	Natural Gas	13.02486355	711.1746457	0.000122597	0.561494229	0.001552	0.02414	0	0.012	0.045387
Madera	2024	OBUS	Aggregate	Aggregate	Gasoline	64.76812408	3811.209146	0.000657001	3.009066694	0.001174	0	0.000373	0.012	0.044887
Madera	2024	OBUS	Aggregate	Aggregate	Diesel	26.88458473	2831.597801	0.00048813	2.235633445	0.037141	0.017956	0	0.012	0.068601
Madera	2024	OBUS	Aggregate	Aggregate	Electricity	0.086451157	11.6745357	2.01253E-06	0.009217405	0	0	0	0.012	0.022443
Madera	2024	OBUS	Aggregate	Aggregate	Natural Gas	1.252173401	85.16068123	1.46806E-05	0.067236974	0.001775	0.00589	0	0.012	0.046137
Madera	2024	SBUS	Aggregate	Aggregate	Gasoline	88.0569694	8056.860571	0.001388895	6.361138914	0.000853	0	0.000455	0.008	0.044917
Madera	2024	SBUS	Aggregate	Aggregate	Diesel	181.285594	4133.623817	0.000712581	3.263622981	0.024282	0.026528	0	0.012	0.044917
Madera	2024	SBUS	Aggregate	Aggregate	Electricity	0.671076748	18.8891103	3.25623E-06	0.014913533	0	0	0	0.011202	0.022459
Madera	2024	SBUS	Aggregate	Aggregate	Natural Gas	34.69483002	893.1003231	0.000153959	0.70513014	0.003674	0.015508	0	0.012	0.044917
Madera	2024	UBUS	Aggregate	Aggregate	Gasoline	14.70785236	1455.459504	0.000250902	1.149129987	0.001307	0	0.001081	0.011999	0.109995
Madera	2024	UBUS	Aggregate	Aggregate	Diesel	3.276641821	190.8200275	3.28948E-05	0.150658273	0.00315	0	0	0.012	0.108672
Madera	2024	UBUS	Aggregate	Aggregate	Electricity	0.035464117	1.639405281	2.82612E-07	0.001294361	0	0	0	0.002575	0.011801
Madera	2024	UBUS	Aggregate	Aggregate	Natural Gas	13.38376855	802.4321653	0.000138329	0.633544844	0.000643	0	0	0.012	0.109336
							5800914.257							

*weekday trips used

Source: EMFAC2021 (v1.0.2) Emission Rates
Region Type: County
Region: Madera
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, g/mile for RUNEX, PMBW and PMTW, mph for Speed, kWh/mile for Energy Consumption, gallon/mile for Fuel Consumption. PHEV calculated based on total VMT.

Region	Calendar Y	Vehicle Cat	Model Year	Speed	Fuel	Total VMT	CVMT	EVMT	PM10_RUNEX	PM10_PMBW	Fuel Consumption	Energy Consumption
Madera	2024	HHDT	Aggregate	5	Gasoline	1.522894067	1.522894067	0	0.031292932	0.165941183	0.67475425	0
Madera	2024	HHDT	Aggregate	5	Diesel	178.3958792	178.3958792	0	0.125869301	0.15664897	0.340609885	0
Madera	2024	HHDT	Aggregate	5	Electricity	0.931658581	0	0.931659	0	0.068542263	0	5.908862
Madera	2024	HHDT	Aggregate	5	Natural Ga	15.2904455	15.2904455	0	0.008429856	0.140029989	0.502143949	0
Madera	2024	LDA	Aggregate	5	Gasoline	1.998323274	1.998323274	0	0.009212655	0.005965788	0.079585665	0
Madera	2024	LDA	Aggregate	5	Diesel	0.004649869	0.004649869	0	0.061577727	0.006070919	0.059159234	0
Madera	2024	LDA	Aggregate	5	Electricity	2989.6571	0	2989.657	0	0.001325261	0	0.694461
Madera	2024	LDA	Aggregate	5	Plug-in Hyb	509.6579965	0.030885106	509.6271	5.8181E-07	0.001327949	5.9447E-06	0.521108
Madera	2024	LDT1	Aggregate	5	Gasoline	0.169833904	0.169833904	0	0.015502474	0.00867227	0.096197145	0
Madera	2024	LDT1	Aggregate	5	Diesel	2.48512E-05	2.48512E-05	0	1.023579114	0.00973891	0.103328058	0
Madera	2024	LDT1	Aggregate	5	Electricity	8.646054707	0	8.646055	0	0.001326972	0	0.694461
Madera	2024	LDT1	Aggregate	5	Plug-in Hyb	2.258122693	0.000112104	2.258011	3.2264E-07	0.001322382	4.87812E-06	0.521114
Madera	2024	LDT2	Aggregate	5	Gasoline	0.908564598	0.908564598	0	0.009715427	0.008273803	0.098955382	0
Madera	2024	LDT2	Aggregate	5	Diesel	0.002666879	0.002666879	0	0.016004451	0.008020242	0.076172624	0
Madera	2024	LDT2	Aggregate	5	Electricity	125.3892745	0	125.3893	0	0.001322755	0	0.694461
Madera	2024	LDT2	Aggregate	5	Plug-in Hyb	66.62836161	0.003603695	66.62476	4.25486E-07	0.001324461	5.3115E-06	0.521111
Madera	2024	LHDT1	Aggregate	5	Gasoline	2902.004619	2902.004619	0	0.005584215	0.078000022	0.19132603	0
Madera	2024	LHDT1	Aggregate	5	Diesel	2000.322243	2000.322243	0	0.128457127	0.078000022	0.11946057	0
Madera	2024	LHDT1	Aggregate	5	Electricity	10.49712842	0	10.49713	0	0.039000011	0	1.879248
Madera	2024	LHDT2	Aggregate	5	Gasoline	375.5518775	375.5518775	0	0.004299025	0.091000026	0.212836848	0
Madera	2024	LHDT2	Aggregate	5	Diesel	754.1734604	754.1734604	0	0.103890401	0.091000026	0.142296162	0
Madera	2024	LHDT2	Aggregate	5	Electricity	2.209555127	0	2.209555	0	0.045500013	0	1.879248
Madera	2024	MCY	Aggregate	5	Gasoline	0.016209225	0.016209225	0	0.011582333	0.012000003	0.055928348	0
Madera	2024	MDV	Aggregate	5	Gasoline	0.774879913	0.774879913	0	0.010016952	0.008640937	0.123049733	0
Madera	2024	MDV	Aggregate	5	Diesel	0.015538244	0.015538244	0	0.025315032	0.008559724	0.098790974	0
Madera	2024	MDV	Aggregate	5	Electricity	136.8882315	0	136.8882	0	0.001322469	0	0.694461
Madera	2024	MDV	Aggregate	5	Plug-in Hyb	45.32079726	0.002671808	45.31813	6.09239E-07	0.001327652	5.78454E-06	0.521109
Madera	2024	MH	Aggregate	5	Gasoline	126.0552402	126.0552402	0	0.008611399	0.061495877	0.489963296	0
Madera	2024	MH	Aggregate	5	Diesel	56.39202839	56.39202839	0	0.399497465	0.061495877	0.211576696	0
Madera	2024	MHDT	Aggregate	5	Gasoline	326.4895277	326.4895277	0	0.007723358	0.061495877	0.453821585	0
Madera	2024	MHDT	Aggregate	5	Diesel	135.4573446	135.4573446	0	0.077193937	0.061495877	0.234252292	0
Madera	2024	MHDT	Aggregate	5	Electricity	2.592369247	0	2.592369	0	0.030747939	0	3.515312
Madera	2024	MHDT	Aggregate	5	Natural Ga	9.695223964	9.695223964	0	0.004446902	0.061495877	0.320592696	0
Madera	2024	OBUS	Aggregate	5	Gasoline	40.98126422	40.98126422	0	0.006589082	0.061495877	0.47095354	0
Madera	2024	OBUS	Aggregate	5	Diesel	8.948755399	8.948755399	0	0.22241034	0.061495877	0.239218034	0
Madera	2024	OBUS	Aggregate	5	Electricity	0.125534237	0	0.125534	0	0.030747939	0	3.515312
Madera	2024	OBUS	Aggregate	5	Natural Ga	1.368777953	1.368777953	0	0.004988505	0.061495877	0.336951215	0
Madera	2024	SBUS	Aggregate	5	Gasoline	0	0	0	0	0	0	0
Madera	2024	SBUS	Aggregate	5	Electricity	0	0	0	0	0	0	0
Madera	2024	UBUS	Aggregate	5	Gasoline	0.011788251	0.011788251	0	0.002170985	0.091000026	0.181334736	0
Madera	2024	UBUS	Aggregate	5	Diesel	0.388617884	0.388617884	0	0.031181209	0.091000026	0.123629238	0
Madera	2024	UBUS	Aggregate	5	Natural Ga	0.817764291	0.817764291	0	0.0309521	0.091000026	0.181160723	0

*HARP - HRACalc v21081 2/8/2023 8:00:37 PM - Cancer Risk - Input File: C:\Users\kheck\Desktop

INDEX	GRP1	GRP2	POLID	POLABBREV	CONC	RISK_SUM
1	Res_DPMTrucks		9901	DieselExhPM	0.01725	1.38E-05
2	Res_Benzene		71432	Benzene	0.000565	4.12E-08
3	Res_EthylBenzene		100414	Ethyl Benzene	0.000657	4.17E-09
4	Res_nHexane		110543	Hexane	0.001802	0.00E+00
5	Res_Naphthalene		91203	Naphthalene	8.16E-05	7.14E-09
6	Res_Propylene		115071	Propylene	7.74E-07	0.00E+00
7	Res_Toluene		108883	Toluene	0.003202	0.00E+00
8	Res_Xylenes		1330207	Xylenes	0.003291	0.00E+00
					TOTAL	**1.39E-05**

\Projects\MaderaRanchos\ResOp_70yearHRAInput.hra

SCENARIO	DETAILS	INH_RISK
70YrCancerDerived_Inh_FAH3to70	*	1.38E-05
70YrCancerDerived_Inh_FAH3to70	*	4.12E-08
70YrCancerDerived_Inh_FAH3to70	*	4.17E-09
70YrCancerDerived_Inh_FAH3to70	*	0.00E+00
70YrCancerDerived_Inh_FAH3to70	*	7.14E-09
70YrCancerDerived_Inh_FAH3to70	*	0.00E+00
70YrCancerDerived_Inh_FAH3to70	*	0.00E+00
70YrCancerDerived_Inh_FAH3to70	*	0.00E+00

HARP2 - HRACalc (dated 21081) 2/8/2023 8:00:37 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: Cancer
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 70

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 2
2<9 Years Bin: 0
2<16 Years Bin: 14
16<30 Years Bin: 0
16 to 70 Years Bin: 54

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors

Worker adjustment factors enabled: NO

Fraction at time at home
3rd Trimester to 16 years: ON
16 years to 70 years: ON

****
TIER 2 SETTINGS
Tier2 not used.

****

Calculating cancer risk
Cancer risk saved to:
C:\Users\kheck\Desktop\Projects\MaderaRanchos\ResOp_70yearCancerRisk.csv
HRA ran successfully

APPENDIX B

BIOLOGICAL RESOURCES ASSESSMENT

Downtown Ranchos Commercial Development
Madera County, CA

APNs: 049-590-033, 049-590-034, 049-590-035, 049-590-036

Prepared for: Madera County

May 31, 2023

acorn environmental

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Section 1 | Introduction

1.1 PROJECT DESCRIPTION AND LOCATION

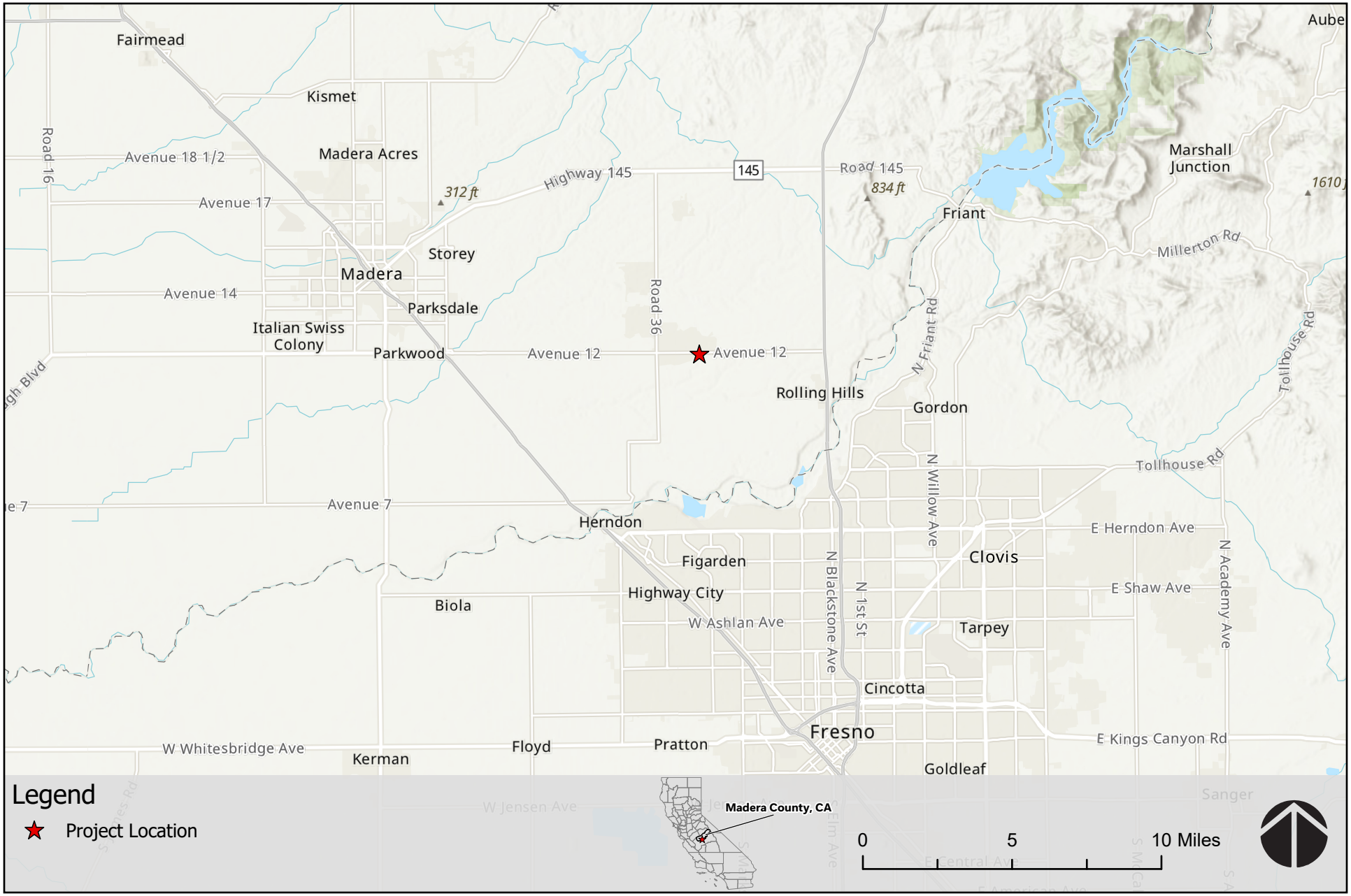
This Biological Resources Assessment was conducted for the proposed Downtown Ranchos Commercial Development Project ("Proposed Project"). The Project Area is located at the southeast corner of Avenue 12 and Jason Court in Madera Ranchos (an unincorporated community in Madera County). The Project Area is approximately 4.58 acres and is comprised of Assessor Parcel Numbers 049-590-033, 049-590-034, 049-590-035, and 049-590-036. The Proposed Project consists of the development of an approximately 12,000 square foot medical office, 2,400 sf drive through restaurant, 4,000 sf convenience store with car wash and six-pump gasoline refueling canopy, parking areas, landscaping, storm water ponding basin, and other supporting infrastructure within the project site.

Figure 1 depicts the regional location of the Project Area in Madera County. **Figure 2** identifies the location of the Project Area on the USGS 7.5-minute Quadrangle Map. An aerial photograph of the Project Area can be viewed in **Figure 3**. The site plan of the Proposed Project is shown in Figure 4.

1.2 PURPOSE AND SCOPE OF ASSESSMENT

This assessment provides information about the biological resources within the Project Area, the regulatory environment affecting such resources, any potential Project-related impacts upon these resources, and finally, to identify mitigation measures and other recommendations to reduce the significance of these impacts. The specific scope of services performed for this assessment consisted of the following tasks:

- Compile all readily-available historical biological resource information about the Project Area;
- Spatially query state and federal databases for any occurrences of special-status species or habitats within the Project Area and vicinity;
- Perform a reconnaissance-level field survey of the Project Area, including photographic documentation;
- Inventory all flora and fauna observed during the field survey;
- Characterize and map the habitat types present within the Project Area, including any potentially-jurisdictional water resources;
- Evaluate the likelihood for the occurrence of any special-status species;
- Assess the potential for the Project to adversely impact any sensitive biological resources;
- Recommend mitigation measures designed to avoid or minimize Project-related impacts; and
- Prepare and submit a report summarizing all of the above tasks.



City Of Fresno, Fresno County Dept. PWP, California State Parks, Esri, HERE, Garmin,

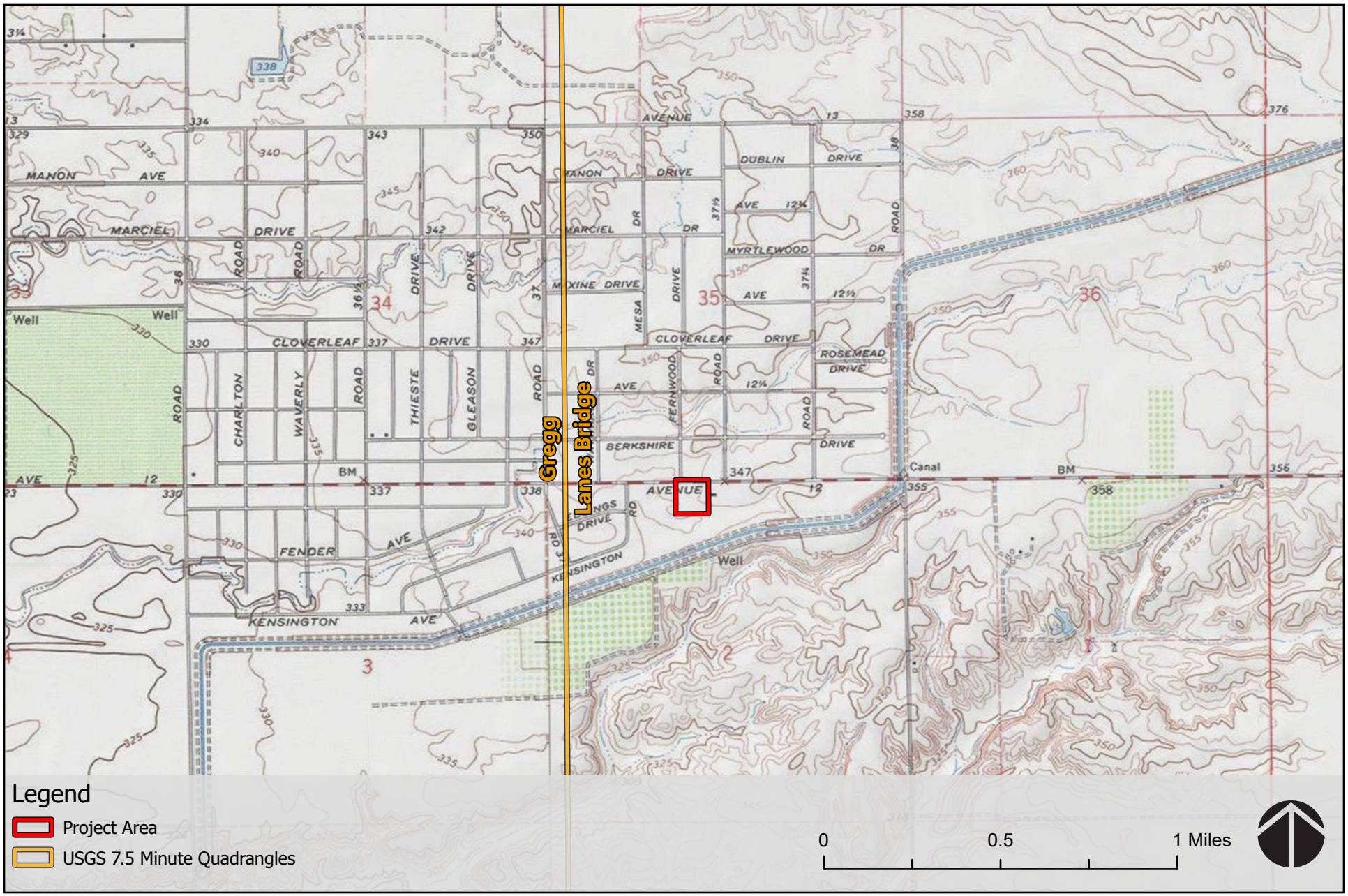
FIGURE 1

REGIONAL LOCATION

Maxar, Microsoft, Esri Community Maps Contributors, Fresno County Dept. PWP, California State

FIGURE 2

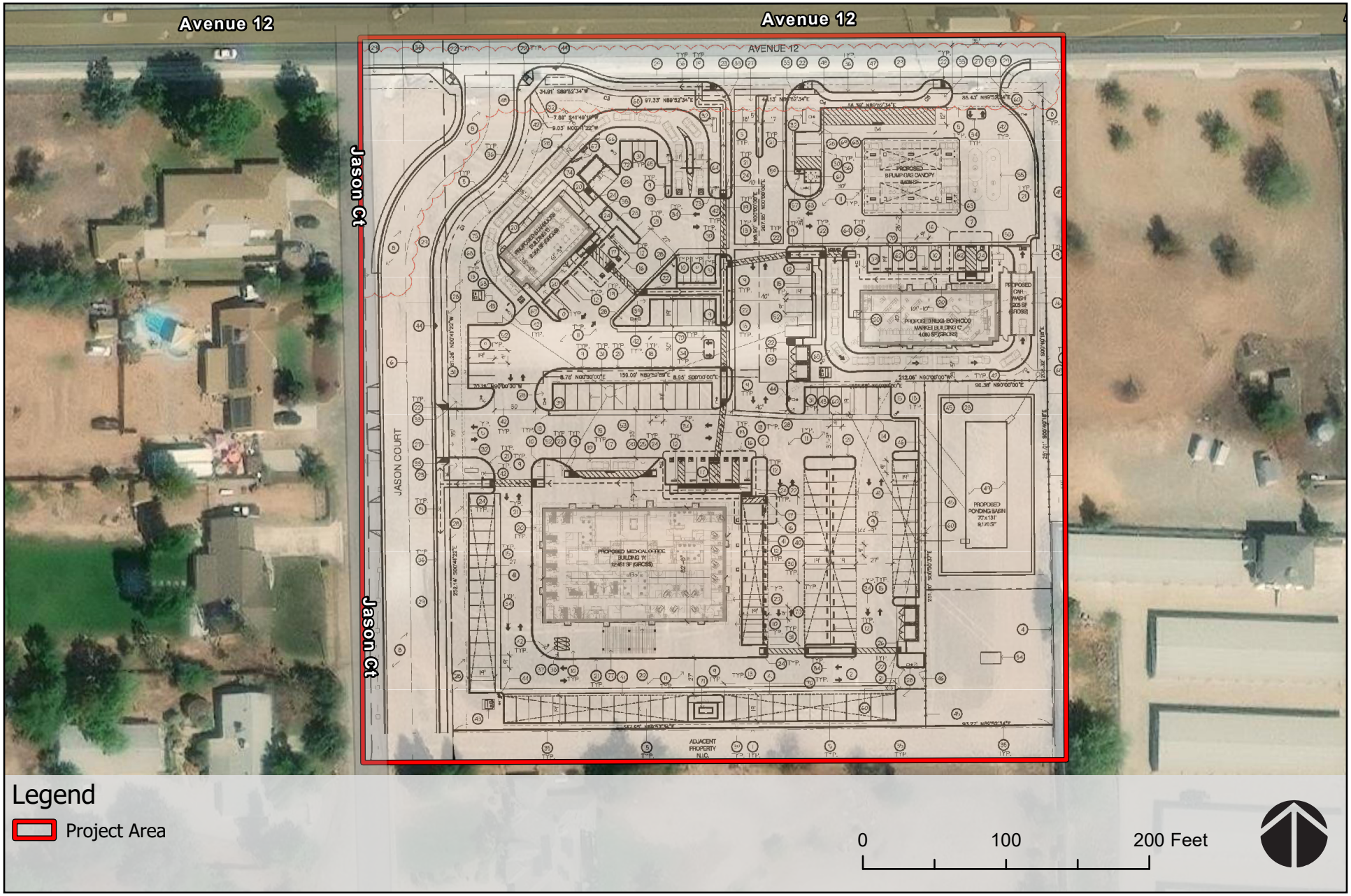
AERIAL VICINITY



Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS

FIGURE 3

TOPOGRAPHIC OVERVIEW



Maxar, Microsoft, Esri Community Maps Contributors, Fresno County Dept. PWP, California State

FIGURE 4

SITE PLAN

1.3 REGULATORY SETTING

The following section summarizes some applicable regulations of biological resources on real property in California.

1.3.1 Special-status Species Regulations

The United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service implement the Federal Endangered Species Act of 1973 (FESA) (16 USC §1531 et seq.). Threatened and endangered species on the federal list (50 CFR §17.11, 17.12) are protected from "take" (direct or indirect harm), unless a FESA Section 10 Permit is granted or a FESA Section 7 Biological Opinion with incidental take provisions is rendered. Pursuant to the requirements of FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed species may be present in the project area and determine whether the proposed project will have a potentially significant impact upon such species. Under FESA, habitat loss is considered to be an impact to the species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC §1536[3], [4]). Therefore, project-related impacts to these species or their habitats would be considered significant and would require mitigation. Species that are candidates for listing are not protected under FESA; however, USFWS advises that a candidate species could be elevated to listed status at any time, and therefore, applicants should regard these species with special consideration.

The California Endangered Species Act of 1970 (CESA) (California Fish and Game Code §2050 et seq., and CCR Title 14, §670.2, 670.51) prohibits "take" (defined as hunt, pursue, catch, capture, or kill) of species listed under CESA. A CESA permit must be obtained if a project will result in take of listed species, either during construction or over the life of the project. Section 2081 establishes an incidental take permit program for state-listed species. Under CESA, California Department of Fish and Wildlife (CDFW) has the responsibility for maintaining a list of threatened and endangered species designated under state law (CFG Code 2070). CDFW also maintains lists of species of special concern, which serve as "watch lists." Pursuant to requirements of CESA, an agency reviewing proposed projects within its jurisdiction must determine whether any state-listed species may be present in the Project Area and determine whether the proposed project will have a potentially significant impact upon such species. Project-related impacts to species on the CESA list would be considered significant and would require mitigation.

California Fish and Game Code Sections 4700, 5050, and 5515 designates certain mammal, amphibian, and reptile species "fully protected", making it unlawful to take, possess, or destroy these species except under issuance of a specific permit. The California Native Plant Protection Act of 1977 (CFG Code §1900 et seq.) requires CDFW to establish criteria for determining if a species or variety of native plant is endangered or rare. Section 19131 of the code requires that landowners notify CDFW at least 10 days prior to initiating activities that will destroy a listed plant to allow the salvage of plant material.

Many bird species, especially those that are breeding, migratory, or of limited distribution, are protected under federal and state regulations. Under the Migratory Bird Treaty Act of 1918 (16 USC §703-711), migratory bird species and their nests and eggs that are on the federal list (50 CFR §10.13) are protected from injury or death, and project-related disturbances must be reduced or eliminated during the nesting cycle. California Fish and Game Code (§3503, 3503.5, and 3800) prohibits the possession, incidental take, or needless destruction of any bird nests or eggs. Fish and Game Code §3511 designates certain bird

species “fully protected”, making it unlawful to take, possess, or destroy these species except under issuance of a specific permit. The Bald and Golden Eagle Protection Act (16 USC §668) specifically protects bald and golden eagles from harm or trade in parts of these species.

California Environmental Quality Act (CEQA) (Public Resources Code §15380) defines “rare” in a broader sense than the definitions of threatened, endangered, or fully protected. Under the CEQA definition, CDFW can request additional consideration of species not otherwise protected. CEQA requires that the impacts of a project upon environmental resources must be analyzed and assessed using criteria determined by the lead agency. Sensitive species that would qualify for listing but are not currently listed may be afforded protection under CEQA. The CEQA Guidelines (§15065) require that a substantial reduction in numbers of a rare or endangered species be considered a significant effect. CEQA Guidelines (§15380) provide for assessment of unlisted species as rare or endangered under CEQA if the species can be shown to meet the criteria for listing. Plant species on the California Native Plant Society (CNPS) Lists 1A, 1B, or 2 are typically considered rare under CEQA. California “Species of Special Concern” is a category conferred by CDFW on those species that are indicators of regional habitat changes or are considered potential future protected species. While they do not have statutory protection, Species of Special Concern are typically considered rare under CEQA and thereby warrant specific protection measures.

1.3.2 Water Resource Protection

Real property that contains water resources are subject to various federal and state regulations and activities occurring in these water resources may require permits, licenses, variances, or similar authorization from federal, state and local agencies, as described next.

The Federal Water Pollution Control Act Amendments of 1972 (as amended), commonly known as the Clean Water Act (CWA), established the basic structure for regulating discharges of pollutants into “waters of the United States”. Waters of the US includes essentially all surface waters, all interstate waters and their tributaries, all impoundments of these waters, and all wetlands adjacent to these waters. CWA Section 404 requires approval prior to dredging or discharging fill material into any waters of the US, especially wetlands. The permitting program is designed to minimize impacts to waters of the US, and when impacts cannot be avoided, requires compensatory mitigation. The US Army Corps of Engineers (USACE) is responsible for administering Section 404 regulations. Substantial impacts to jurisdictional wetlands may require an Individual Permit. Small-scale projects may require only a Nationwide Permit, which typically has an expedited process compared to the Individual Permit process. Mitigation of wetland impacts is required as a condition of the CWA Section 404 Permit and may include on-site preservation, restoration, or enhancement and/or off-site restoration or enhancement. The characteristics of the restored or enhanced wetlands must be equal to or better than those of the affected wetlands to achieve no net loss of wetlands.

Under CWA Section 401, every applicant for a federal permit or license for any activity which may result in a discharge to a water body must obtain State Water Quality Certification that the proposed activity will comply with State water quality standards. The California State Water Resources Control Board is responsible for administering CWA Section 401 regulations.

Section 10 of the Rivers and Harbors Act of 1899 requires approval from USACE prior to the commencement of any work in or over navigable Waters of the US, or which affects the course, location, condition or capacity of such waters. Navigable waters of the United States are defined as waters that have been used in the past, are now used, or are susceptible to use, as a means to transport interstate or

foreign commerce up to the head of navigation. Rivers and Harbors Act Section 10 permits are required for construction activities in these waters.

California Fish and Game Code (§1601 - 1607) protects fishery resources by regulating "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." CDFW requires notification prior to commencement, and issuance of a Lake or Streambed Alteration Agreement, if a proposed project will result in the alteration or degradation of ''waters of the State". The limit of CDFW jurisdiction is subject to the judgment of the Department; currently, this jurisdiction is interpreted to be the "stream zone", defined as "that portion of the stream channel that restricts lateral movement of water" and delineated at "the top of the bank or the outer edge of any riparian vegetation, whichever is more landward". CDFW reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by the CDFW and the applicant is the Streambed Alteration Agreement. Projects that require a Streambed Alteration Agreement may also require a CWA 404 Section Permit and/or CWA Section 401 Water Quality Certification.

For construction projects that disturb one or more acres of soil, the landowner or developer must obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 2009-0009-DWQ).

Section 2 | Environmental Setting

The Project Area is located within the San Joaquin Valley geographic subregion, which is contained within the Great Central Valley geographic subdivision of the larger California Floristic Province (Baldwin et al. 2012). This region has a Mediterranean-type climate, characterized by distinct seasons of hot, dry summers and wet, moderately-cold winters. The Project Area and vicinity is in Climate Zone 8 – Cold Air Basins of California, defined by hot summers and mild but pronounced winters (Sunset, 2021).

The topography of the Project Area is a portion of a valley floor that has been graded flat. The elevation ranges from approximately 340 feet to 345 feet above mean sea level. Drainage flows as sheetflow generally to the northwest, where it collects offsite in roadside ditches. The current land use of the Project Area is a fallow field that has been recently disked and has been prepared for commercial development. Historical aerial photos indicate that the land was previously used for harvesting haycrop. The surrounding land uses are suburban residential, agricultural (row crop and citrus), transportation corridor (Avenue 12), and commercial.

The Natural Resource Conservation service has mapped 2 soil units in the Project Area (NRCS 2023): “SaA: San Joaquin sandy loam, 0 to 3 percent slopes” [not typically hydric, but vernal pools are common]; and “WrB: Whitney and Rocklin sandy loams, 3 to 8 percent slopes” [not hydric].

Section 3 | Methodology

3.1 PRELIMINARY DATA GATHERING AND RESEARCH

Prior to conducting the field survey, the following information sources were reviewed:

- United States Geologic Service (USGS) 7.5 degree-minute topographic quadrangles of the Project Area and vicinity;
- Aerial photography of the Project Area;
- California Natural Diversity Database (CNDDB), electronically updated monthly by subscription to CDFW;
- A query of the California Native Plant Society's database *Inventory of Rare and Endangered Plants of California* (online edition); and
- USFWS species list (IPaC Trust Resources Report; **Attachment 1**)

3.2 FIELD SURVEY

Consulting biologist Dr. Geo Graening conducted a biological field assessment on May 22, 2023. Weather conditions were cool and sunny.

A variable-intensity pedestrian survey was performed, and modified to account for differences in terrain, vegetation density, and visibility. All visible fauna and flora observed were recorded in a field notebook, and identified to the lowest possible taxon. Survey efforts emphasized the search for any special-status species that had documented occurrences in the CNDDB within the vicinity of the Project Area and those species on the USFWS species list (**Attachment 1**).

When a specimen could not be identified in the field, a photograph or voucher specimen (depending upon permit requirements) was taken and identified in the laboratory using a dissecting scope where necessary. Dr. Graening holds the following scientific collection permits: CDFW Scientific Collecting Permit No. SC-006802; and CDFW Plant Voucher Specimen Permit 09004. Taxonomic determinations were facilitated by referencing museum specimens or by various texts, including the following: Powell and Hogue (1979); Pavlik (1991); (1993); Brenzel (2012); Stuart and Sawyer (2001); Lanner (2002); Sibley (2003); Baldwin et al. (2012); Calflora (2021); CDFW (2021b,c); NatureServe 2021; and University of California at Berkeley (2021a,b).

Habitat types occurring in the Project Area were mapped on aerial photographs, and information on habitat conditions and the suitability of the habitats to support special-status species was also recorded. The Project Area was also informally assessed for the presence of potentially-jurisdictional water features, including riparian zones, isolated wetlands and vernal pools, and other biologically-sensitive aquatic habitats

3.3 MAPPING AND OTHER ANALYSES

Locations of species' occurrences and habitat boundaries within the Project Area were recorded on color aerial photographs, and then digitized to produce the final habitat maps. Geographic analyses were performed using geographical information system software (ArcGIS 10, ESRI, Inc.). Vegetation communities (assemblages of plant species growing in an area of similar biological and environmental factors), were classified by Vegetation Series (distinctive associations of plants, described by dominant species and particular environmental setting) using the CNPS Vegetation Classification system (Sawyer and Keeler-Wolf, 1995). Wetlands and other aquatic habitats were classified using USFWS National Wetlands Inventory Classification System for Wetland and Deepwater Habitats, or "Cowardin class" (Cowardin et al., 1979; USFWS 2007). Informal wetland delineation methods consisted of an abbreviated, visual assessment of the three requisite wetland parameters (hydrophytic vegetation, hydric soils, hydrologic regime) defined in the US Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987). Wildlife habitats were classified according to the CDFW's California Wildlife Habitat Relationships System (CDFW, 2023). Species' habitat requirements and life histories were identified using the following sources: Baldwin et al. (2012); CNPS (2023), Calflora (2023); CDFW (2023a,b,c); and University of California at Berkeley (2023a,b).

Section 4 | Results

4.1 INVENTORY OF FLORA AND FAUNA FROM FIELD SURVEY

4.1.1 Flora and Fauna Observed During Field Survey

All plants detected during the reconnaissance-level biological field survey of the Project Area are as follows: oats (*Avena*); bromes (*Bromus*); vinegar weed (*Trichostema lanceolatum*); dandelion (*Taraxacum*); mustard (*Brassica*); vetch (*Vicia*); broadleaf filaree (*Erodium botrys*); prickly lettuce (*Lactuca*); redwood (*Sequoia sempervirens*); red clover (*Trifolium*); privet (*Ligustrum*); mulberry (*Morus*); cheeseweed (*Malva*); turkey mullein (*Croton setigerus*).

All animals sighted during the reconnaissance-level biological field survey of the Project Area are as follows: grasshopper (Orthoptera); ant (Formicidae); American crow (*Corvus brachyrhynchos*); house finch (*Haemorhous mexicanus*).

4.2 TERRESTRIAL VEGETATION COMMUNITIES AND WILDLIFE HABITAT TYPES

4.2.1 Terrestrial Vegetation Communities

Terrestrial vegetation communities occurring in the Project Area were mapped (as categorized by CDFW 2023):

- 11.000.00 Disturbed
    - 11.300.00 Disturbed Habitat
    - 12.000.00 Urban/Developed
- 18.000.00 Agriculture
    - 18.310.00 Field/Pasture

The Project Area contains primarily a pasture grass community; it has been disked and sown with pasture grasses (oats, bromes, barley), which in the past has been harvested for haycrop. The edges of the Project Area contain ruderal or urbanized vegetation communities, and consist of non-native weedy forbs and landscape plants. The disturbed and altered condition of these lands greatly reduces their habitat value and ability to sustain rare plants or diverse wildlife assemblages. However, common, disturbance-tolerant species do occur in these lands.

4.2.2 Wildlife Habitat Types

Wildlife habitat types were classified using CDFW's Wildlife Habitat Relationship System. The Project Area contains the following wildlife habitat types: Pasture; Urban; and Barren.

Esri Community Maps Contributors, Fresno County Dept. PWP, California State Parks, ©

FIGURE 5

VEGETATION COMMUNITIES

4.2.3 Critical Habitat and Special-status Habitat

No critical habitat for any federally-listed species occurs within the Project Area or immediate vicinity. The CNDDB reported no special-status habitats within the Project Area. The CNDDB reported the following special-status habitats in a 10-mile radius outside of the Project Area: Great Valley Mixed Riparian Forest; Northern Claypan Vernal Pool; Sycamore Alluvial Woodland. Note that a special-status habitat (Northern Hardpan Vernal Pool) is mapped within a mile of the Project Area. No special-status habitats were detected within the Project Area during the field survey.

4.2.4 Habitat Plans and Wildlife Corridors

Wildlife movement corridors link remaining areas of functional wildlife habitat that are separated primarily by human disturbance, but natural barriers such as rugged terrain and abrupt changes in vegetation cover are also possible. Wilderness and open lands have been fragmented by urbanization, which can disrupt migratory species and separate interbreeding populations. Corridors allow migratory movements and act as links between these separated populations.

No wildlife corridors exist within or near the Project Area. No fishery resources exist in or near the Project Area. The Project Area is not located within any adopted Habitat Conservation Plan or Natural Community Conservation Plan.

4.3 LISTED SPECIES AND OTHER SPECIAL-STATUS SPECIES

For the purposes of this assessment, “special status” is defined to be species that are of management concern to state or federal natural resource agencies, and include those species that are:

- Listed as endangered, threatened, proposed, or candidate for listing under the Federal Endangered Species Act;
- Listed as endangered, threatened, rare, or proposed for listing, under the California Endangered Species Act of 1970;
- Designated as endangered or rare, pursuant to California Fish and Game Code (§1901);
- Designated as fully protected, pursuant to California Fish and Game Code (§3511, §4700, or §5050);
- Designated as a species of special concern by CDFW;
- Plants considered to be rare, threatened or endangered in California by the California Native Plant Society (CNPS); this consists of species on Lists 1A, 1B, and 2 of the CNPS Ranking System; or
- Plants listed as rare under the California Native Plant Protection Act.

4.3.1 Reported Occurrences of Listed Species and Other Special-status Species

A list of special-status plant and animal species that have occurred within the Project Area and vicinity was compiled based upon the following:

- Any previous and readily-available biological resource studies pertaining to the Project Area;

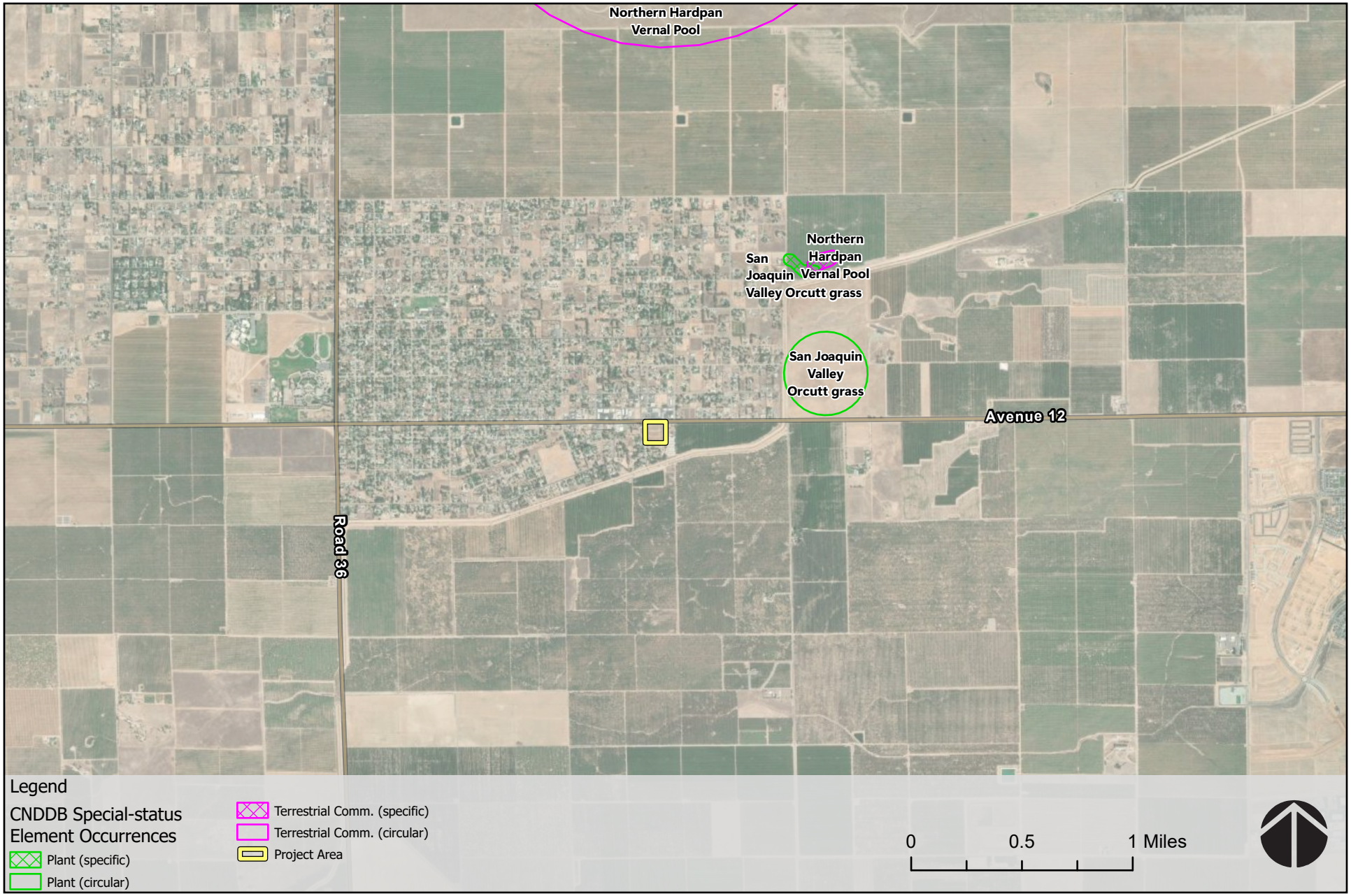
- Informal consultation with USFWS by generating an electronic Species List (Information for Planning and Conservation website at https://ecos.fws.gov/ipac/); and
- A spatial query of the CNDDB using the standard 9 quadrangle boundary
- A query of the California Native Plant Society's database Inventory of Rare and Endangered Plants of California (online edition).

The CNDDB was queried and any reported occurrences of special-status species were plotted in relation to the Project Area boundary using GIS software (see **Figure 5**). The CNDDB reported no special-status species occurrences within the Project Area. Within a 10-mile buffer of the Project Area boundary, the CNDDB reported various special-status species occurrences, summarized in the **Table 1**, along with any additional CNPS species. Note that within a mile of the Project Area boundary, the CNDDB has mapped special-status habitats (Northern Hardpan Vernal Pool) and San Joaquin Orcutt Grass. Within a 3-mile radius, the CNDDB has mapped the presence of vernal-pool dependent animals (California tiger salamander, western spadefoot toad, and fairy shrimp species).

A USFWS species list was generated online using the USFWS' IPaC Trust Resource Report System (see **Attachment 1**). This list is generated using a regional and/or watershed approach and does not necessarily indicate that the Project Area provides suitable habitat. The following listed species should be considered in the impact assessment:

- Fresno Kangaroo Rat (*Dipodomys nitratoides exilis*), Endangered
- San Joaquin Kit Fox (*Vulpes macrotis mutica*), Endangered
- California Condor (*Gymnogyps californianus*), Endangered
- California Tiger Salamander (*Ambystoma californiense*), Threatened
- Monarch Butterfly (*Danaus plexippus*), Candidate
- Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*), Threatened
- Conservancy Fairy Shrimp (*Branchinecta conservatio*), Endangered
- Vernal Pool Fairy Shrimp (*Branchinecta lynchi*), Threatened
- Fleshy Owl's-clover (*Castilleja campestris ssp. succulenta*), Threatened
- Hairy Orcutt Grass (*Orcuttia pilosa*), Endangered
- San Joaquin Valley Orcutt Grass (*Orcuttia inaequalis*), Threatened

Migratory birds should also be considered in the impact assessment.



Earthstar Geographics, Fresno County Dept. PWP, California State Parks, Esri, HERE, Garmin,

FIGURE 6

CNDDB OCCURANCES

Table 1: Special-status Species Reported by CNDDB and CNPS in the Vicinity of the Study Area

Scientific Name	Common Name	Status*	General Habitat**	Microhabitat**	Potential to Occur in Project Area
ANIMALS					
Agelaius tricolor	tricolored blackbird	CT	Highly colonial species, most numberous in central valley & vicinity. Largely endemic to california.	Requires open water, protected nesting substrate, & foraging area with insect prey within a few km of the colony.	Absent: No habitat onsite
Ambystoma californiense pop. 1	California tiger salamander - central California DPS	FT, CT	Vernal pools, playas, ponds		Absent: No habitat onsite
Anniella pulchra	Northern California legless lizard	SSC	Rocks and moist soil		Absent: No habitat onsite
Antrozous pallidus	pallid bat	SSC	Deserts, grasslands, shrublands, woodlands & 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.	Absent: No habitat onsite
Ardea alba	great egret	SSC	Colonial nester in large trees.	Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	Absent: No habitat onsite
Arizona elegans occidentalis	California glossy snake	SSC	Grassy fields		Low potential to occur: Marginal habitat is present.
Athene cunicularia	burrowing owl	SSC	Open, dry annual or perenial grasslands, deserts & scrublands characterized by low-growing vegetation.	Subterranean nester, dependent upon burrowing mammals, most notably, the california ground squirrel.	Absent: No habitat onsite

Branchinecta lynchi	vernal pool fairy shrimp	FT	Endemic to the grasslands of the central valley, central coast mtns, and south coast mtns, in astatic rain-filled pools.	Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	Absent: No habitat onsite
Branchinecta mesovallensis	midvalley fairy shrimp	SSC	Vernal pools in the central valley.		Absent: No habitat onsite
Buteo swainsoni	Swainson's hawk	CT	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, & agricultural or ranch lands	Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Absent: No habitat onsite
Calicina mesaensis	Table Mountain harvestman	SSC	Known only from the type locality, table mountain, fresno co. Known only from the type series.		Absent: No habitat onsite
Coccyzus americanus occidentalis	western yellow-billed cuckoo	FT, CE	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems.	Nests in riparian jungles of willow, often mixed with cottonwoods, w/ lower story of blackberry, nettles, or wild grape.	Absent: No habitat onsite
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	FT	Occurs only in the central valley of california, in association with blue elderberry (sambucus mexicana).	Prefers to lay eggs in elderberrries 2-8 inches in diameter; some preference shown for "stressed" elderberries.	Absent: No habitat onsite
Dipodomys nitratoides exilis	Fresno kangaroo rat	FE, CE	Alkali sink-open grassland habitats in western fresno county.	Bare alkaline clay-based soils subject to seasonal inundation, with more friable soil mounds around shrubs & grasses.	Absent: No habitat onsite
Efferia antiochi	Antioch efferian robberfly	SSC	Known only from contra costa and fresno counties.		Absent: No habitat onsite
Egretta thula	snowy egret	SSC	Colonial nester, with nest sites situated in protected beds of dense tules.	Rookery sites situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	Absent: No habitat onsite

Emys marmorata	western pond turtle	SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams & irrigation ditches, usually with aquatic vegetation, be	Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-layin	Absent: No habitat onsite
Eremophila alpestris actia	California horned lark	SSC	Coastal regions, chiefly from sonoma co. To san diego co. Also main part of san joaquin valley & east to foothills.	Short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	Absent: No habitat onsite
Euderma maculatum	spotted bat	SSC	Occupies a wide variety of habitats from arid deserts and grasslands through mixed conifer forests.	Feeds over water and along washes. Feeds almost entirely on moths. Needs rock crevices in cliffs or caves for roosting.	Absent: No habitat onsite
Eumops perotis californicus	western mastiff bat	SSC	Many open, semi-arid to arid habitats, including conifer & deciduous woodlands, coastal scrub, grasslands, chaparral etc	Roosts in crevices in cliff faces, high buildings, trees & tunnels.	Absent: No habitat onsite
Gonidea angulata	western ridged mussel	SSC	Primarily creeks & rivers & less often lakes. Originally in most of state, now extirpated from central & southern calif.		Absent: No habitat onsite
Linderiella occidentalis	California linderiella	SSC	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions.	Water in the pools has very low alkalinity, conductivity, and tds.	Absent: No habitat onsite
Lytta moesta	moestan blister beetle	SSC	Central california.		Absent: No habitat onsite
Metapogon hurdi	Hurd's metapogon robberfly	SSC	Known only from antioch (dunes?) And fresno.		Absent: No habitat onsite
Mylopharodon conocephalus	hardhead	SSC	Low to mid-elevation streams in the sacramento-san joaquin drainage. Also present in the russian river.	Clear, deep pools with sand-gravel-boulder bottoms & slow water velocity. Not found where exotic centrarchids predominat	Absent: No habitat onsite

Nannopterum auritum	double-crested cormorant	SSC	Colonial nester on coastal cliffs, offshore islands, & along lake margins in the interior of the state.	Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	Absent: No habitat onsite
Nycticorax nycticorax	black-crowned night heron	SSC	Colonial nester, usually in trees, occasionally in tule patches.	Rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, marshy spots.	Absent: No habitat onsite
Perognathus inornatus	San Joaquin pocket mouse	SSC			
Phrynosoma blainvillii	coast horned lizard	SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes.	Open areas for sunning, bushes for cover, patches of loose soil for burial, & abundant supply of ants & other insects.	Absent: No habitat onsite
Rana boylii	foothill yellow-legged frog	CE	Partly-shaded, shallow streams & riffles with a rocky substrate in a variety of habitats.	Need at least some cobble-sized substrate for egg-laying. Need at least 15 weeks to attain metamorphosis.	Absent: No habitat onsite
Spea hammondii	western spadefoot	SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands.	Vernal pools are essential for breeding and egg-laying.	Absent: No habitat onsite
Taxidea taxus	American badger	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	Needs sufficient food, friable soils & open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Absent: No habitat onsite
Vireo bellii pusillus	least Bell's vireo	FE, CE	Summer resident of southern california in low riparian in vicinity of water or in dry river bottoms; below 2000 ft.	Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, baccharis, mesquite.	Absent: No habitat onsite
Vulpes macrotis mutica	San Joaquin kit fox	FE, CT	Annual grasslands or grassy open stages with scattered shrubby vegetation.	Need loose-textured sandy soils for burrowing, and suitable prey base.	Absent: No habitat onsite

PLANTS					
Calycadenia hooveri	Hoover's calycadenia	CNPS 1B.3	Cismontane woodland, valley and foothill grassland.	On exposed, rocky, barren soil. 65-260m.	Absent: No habitat onsite
Castilleja campestris var. succulenta	succulent owl's-clover	FT, CE	Vernal pools, valley and foothill grassland.	Moist places, often in acidic soils. 25-750m.	Absent: No habitat onsite
Caulanthus californicus	California jewelflower	FE, CE	Chenopod scrub, valley and foothill grassland, pinyon-juniper woodland.	Historical from various valley habitats in both the central valley and carrizo plain. 65-900m.	Absent: No habitat onsite
Cryptantha hooveri	Hoover's cryptantha	CNPS 1A	Valley and foothill grassland.	In coarse sand. ?-150m.	Absent: No habitat onsite
Downingia pusilla	dwarf downingia	CNPS 2B.2	Valley and foothill grassland (mesic sites), vernal pools.	Vernal lake and pool margins with a variety of associates. In several types of vernal pools. 1-485m.	Absent: No habitat onsite
Eryngium spinosepalum	spiny-sepaled button-celery	CNPS CNPS 1B.2	Vernal pools, valley and foothill grassland.	Some sites on clay soil of granitic origin; vernal pools, within grassland. 100-420m.	Absent: No habitat onsite
Imperata brevifolia	California satintail	CNPS 2B.1	Coastal scrub, chaparral, riparian scrub, mojavean scrub, meadows and seeps (alkali).	Mesic sites, alkali seeps, riparian areas. 0-500m.	Absent: No habitat onsite
Layia munzii	Munz's tidy-tips	CNPS 1B.2	Chenopod scrub, valley and foothill grassland.	Hillsides, in white-grey alkaline clay soils, w/grasses and chenopod scrub associates. 150-700 m.	Absent: No habitat onsite
Leptosiphon serrulatus	Madera leptosiphon	CNPS 1B.2	Cismontane woodland, lower montane coniferous forest.	Dry slopes; often on decomposed granite in woodland. 80-1575m.	Absent: No habitat onsite

Lupinus citrinus var. citrinus	orange lupine	CNPS 1B.2	Chaparral, cismontane woodland, lower montane coniferous forest.	Rocky, decomposed granitic outcrops, usually open areas, on flat to rolling terrain. 600-1350m.	Absent: No habitat onsite
Navarretia myersii ssp. myersii	pincushion navarretia	CNPS 1B.1	Vernal pools.	Clay soils within nonnative grassland. 20-330 m.	Absent: No habitat onsite
Navarretia nigelliformis ssp. radians	shining navarretia	CNPS 1B.2	Cismontane woodland, valley and foothill grassland, vernal pools.	Apparently in grassland, and not necessarily in vernal pools. 200-1000m.	
Orcuttia inaequalis	San Joaquin Valley Orcutt grass	FT, CE	Vernal pools.	15-660 m.	Absent: No habitat onsite
Orcuttia pilosa	hairy Orcutt grass	FE, CE	Vernal pools.	45-200 m.	Absent: No habitat onsite
Pseudobahia bahiifolia	Hartweg's golden sunburst	FE, CE	Valley and foothill grassland, cismontane woodland.	Clay soils, often acidic. Predominantly on the northern slopes of knolls, but also along shady creeks or near vernal pools	Absent: No habitat onsite
Sagittaria sanfordii	Sanford's arrowhead	CNPS 1B.2	Marshes and swamps.	In standing or slow-moving freshwater ponds, marshes, and ditches. 0-610m.	Absent: No habitat onsite
Tuctoria greenei	Greene's tuctoria	FE	Vernal pools.	Dry bottoms of vernal pools in open grasslands. 30-1070 m.	Absent: No habitat onsite

*Definitions of Status Codes: FE = Federally listed as endangered; FT = Federally listed as threatened; FPE = Federally proposed for listing as endangered; FPT = Federally proposed for listing as threatened; FC = Candidate for Federal listing; MB = Migratory Bird Act; CE = California State listed as endangered; CT = California State listed as threatened; CSSC = California species of special concern; CR = California rare species; CFP = California fully protected species; CNPS (California Native Plant Society) List 1A = Plants presumed extinct in California by CNPS; CNPS List 1B = CNPS designated rare or endangered plants in California and elsewhere; and CNPS List 2 = CNPS designated rare or endangered plants in California, but more common elsewhere.

**Copied verbatim from CNDDB, unless otherwise noted.

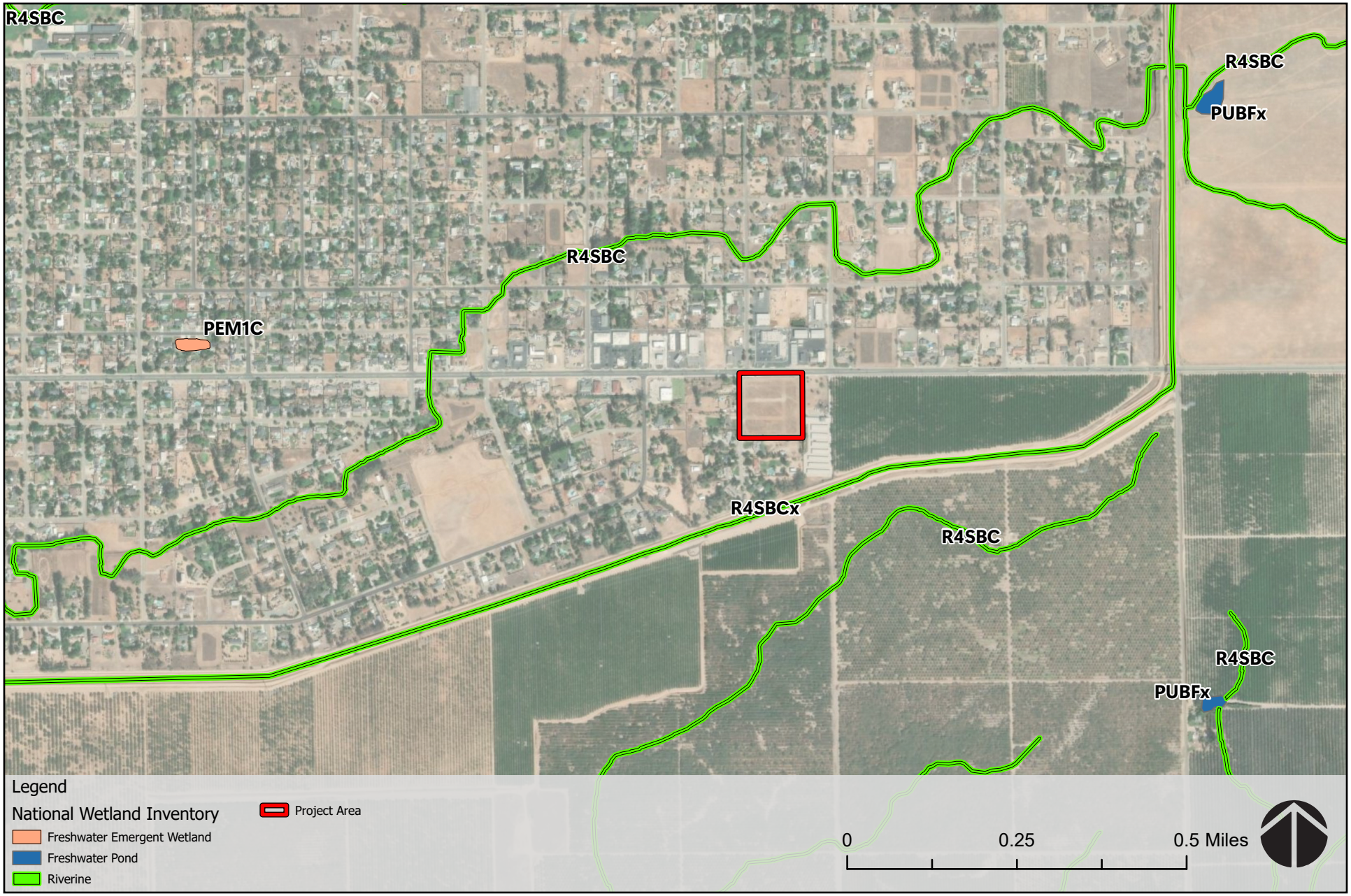
During the field survey, no special-status species were detected within the Project Area.

4.3.2 Potential for Listed Species or Special-status Species to Occur in the Project Area

See Table 1 for a complete list of special-status species and their potential to occur in the Project Area. There are no special-status species that have a moderate or high potential to occur in the Project Area. The disturbed and altered condition of the Project Area greatly reduces habitat value and any ability to sustain rare plants or diverse wildlife assemblages. Historical aerial photography indicates that the land has been maintained as pasture for at least 40 years. There is no indication that the Project Area contained vernal pools or other surface water resources. Thus, the Project Area does not contain any suitable habitat for regionally-occurring special-status species.

4.4 JURISDICTIONAL WATERS / AQUATIC HABITATS

The USFWS National Wetland Inventory (NWI) digital maps of the Project Area were also reviewed. Regional mapped wetland features are shown in the (**Figure 6**), where illustrative. The USFWS National Wetland Inventory reported no water features within the Project Area (see **Figure 6**). The field survey determined that the Project Area does not contain any channels or wetlands. The Project Area has been graded to create a well-drained pasture. Historical aerial photography indicates that the land has been maintained as pasture for at least 40 years. There is no indication that the Project Area previously contained vernal pools or other surface water resources.



Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS

FIGURE 7

NATIONAL WETLAND INVENTORY

Esri Community Maps Contributors, Fresno County Dept. PWP, California State Parks, ©

FIGURE 8

WATER RESOURCES

Section 5 | Impact Analyses and Mitigation Measures

This section establishes the impact criteria, then analyzes potential Project-related impacts upon the known biological resources within the Project Area, and then suggests mitigation measures to reduce these impacts to a less-than-significant level.

5.1 IMPACT SIGNIFICANCE CRITERIA

The significance of impacts to biological resources depends upon the proximity and quality of vegetation communities and wildlife habitats, the presence or absence of special-status species, and the effectiveness of measures implemented to protect these resources from Project-related impacts. As defined by CEQA, the Proposed Project would be considered to have a significant adverse impact on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a special-status species in local or regional plans, policies, or regulations, or by USFWS or CDFW
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by USFWS or CDFW
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites
- Conflict with any county or municipal policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved governmental habitat conservation plan.

5.2 IMPACT ANALYSES AND MITIGATION

The following discussion evaluates the potential for Project-related activities to adversely affect biological resources. The Project boundaries were digitized and then overlaid on the habitat map using GIS to quantify potential impacts. Historical aerial photos were also analyzed for changes in land use.

5.2.1 Potential Direct / Indirect Adverse Effects Upon Special-status Species

- *Will the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special-status species in local or regional plans,*

policies, or regulations, or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No special-status species were detected during the field survey. There are no special-status species that have a moderate or high potential to occur in the Project Area. The disturbed and altered condition of the Project Area greatly reduces habitat value and any ability to sustain rare plants or diverse wildlife assemblages. Historical aerial photography indicates that the land has been maintained as pasture for at least 40 years. Thus, the Project Area does not contain any suitable habitat for regionally-occurring special-status species.

Special-status bird species were reported in databases (CNDDB and USFWS) in the vicinity of the Project Area. The Project Area, and adjacent trees and utility poles, contain suitable nesting habitat for various bird species. However, no nests were observed during the field survey. If construction activities are conducted during the nesting season, nesting birds could be directly impacted by tree removal and indirectly impacted by noise, vibration, and other construction-related disturbance. Therefore, Proposed Project construction is considered a potentially significant adverse impact to nesting birds.

Recommended Mitigation Measures

If construction activities would occur during the nesting season (typically February through August), a pre-construction survey for the presence of special-status bird species or any nesting bird species should be conducted by a qualified biologist within 500 feet of proposed construction areas. If active nests are identified in these areas, CDFW and/or USFWS should be consulted to develop measures to avoid "take" of active nests prior to the initiation of any construction activities. Avoidance measures may include establishment of a buffer zone using construction fencing or the postponement of vegetation removal until after the nesting season, or until after a qualified biologist has determined the young have fledged and are independent of the nest site. With the implementation of this mitigation measure, adverse impacts upon special-status bird species and nesting birds would be reduced to a less-than-significant level.

5.2.2 Potential Direct / Indirect Adverse Effects Upon Special-status Habitats or Natural Communities or Corridors

- *Will the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?*

The Project Area is not within any designated listed species' critical habitat. The Project Area does not contain special-status habitats or any surface water resources. Project implementation will not impact any special-status habitats.

Recommended Mitigation Measures

No mitigation is necessary.

5.2.3 Potential Direct / Indirect Adverse Effects on Jurisdictional Water Resources

- *Will the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

Potential direct impacts to water resources could occur during construction by modification or destruction of stream banks or riparian vegetation or the filling of wetlands or channels. However, there are no surface water resources within the Project Area.

Potential indirect impacts to water resources could occur during construction of the Proposed Project: surface water quality has the potential to be degraded from storm water transport of sediment from disturbed soils or by accidental release of hazardous materials or petroleum products from sources such as heavy equipment servicing or refueling. However, the landowner and its designated general contractor must enroll under the State Water Quality Control Board's Construction General Permit prior to the initiation of construction. In conjunction with enrollment under this Permit, a Storm Water Pollution Prevention Plan, Erosion Control Plan, and a Hazardous Materials Management/Spill Response Plan must be created and implemented during construction to avoid or minimize the potential for erosion, sedimentation, or accidental release of hazardous materials. Implementation of these measures mandated by law would reduce potential construction-related impacts to water quality to a less-than-significant level.

Recommended Mitigation Measures

No mitigation is necessary.

5.2.4 Potential Impacts to Wildlife Movement, Corridors, etc.

- *Will the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

No wildlife corridors or fisheries exist within, or near, the Project Area. Because the Project Area is an in-fill lot nestled within a suburban setting and a busy transportation corridor, the Project Area does not facilitate animal movement or migrations. While the Proposed Project will convert pasture to commercial land uses, the existing barriers encourage animals to move between agricultural lands to the south or along the San Joaquin River corridor. Thus, implementation of the Proposed Project will have a less than significant impact upon wildlife movement.

Recommended Mitigation Measures

No mitigation is necessary.

5.2.5 Potential Conflicts with Ordinances, Habitat Conservation Plans, etc.

- *Will the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*
- *Will the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

Implementation of the Proposed Project will not require the removal of native trees. Landscape trees (a mulberry and a redwood) may need to be removed, but these trees are not understood to be protected by any ordinance. The Proposed Project will install new trees in the landscaped area. The project does not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or another approved governmental habitat conservation plan. The Project Area is not within the coverage area of any adopted Habitat Conservation Plan or Natural Community Conservation Plan.

Recommended Mitigation Measures

No mitigation is necessary.

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Attachment A: USFWS Species List (IPaC Report)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: May 21, 2023
Project Code: 2023-0084210
Project Name: Downtown Ranchos Commercial Development Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

PROJECT SUMMARY

Project Code: 2023-0084210
Project Name: Downtown Ranchos Commercial Development Project
Project Type: Commercial Development
Project Description: A developer is seeking approvals from the County of Madera for the proposed Downtown Ranchos Commercial Development Project, which consists of the development of an approximately 12,000 square foot (sf) medical office, 2,400 sf drive through restaurant, 4,000 sf convenience store with car wash and six-pump gasoline refueling canopy, parking areas, landscaping, stormwater ponding basin, and other supporting infrastructure within the project site.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.92228255,-119.86862509925007,14z

Counties: Madera County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 11 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Fresno Kangaroo Rat *Dipodomys nitratoides exilis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5150	Endangered
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered

BIRDS

NAME	STATUS
California Condor *Gymnogyps californianus* Population: U.S.A. only, except where listed as an experimental population There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8193	Endangered

AMPHIBIANS

NAME	STATUS
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850	Threatened

CRUSTACEANS

NAME	STATUS
Conservancy Fairy Shrimp *Branchinecta conservatio* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened

FLOWERING PLANTS

NAME	STATUS
Fleshy Owl's-clover *Castilleja campestris ssp. succulenta* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8095	Threatened
Hairy Orcutt Grass *Orcuttia pilosa* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2262	Endangered
San Joaquin Valley Orcutt Grass *Orcuttia inaequalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5506	Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Acorn Environmental
Name: G.O. Graening
Address: 520 Wallingford Lane
City: Folsom
State: CA
Zip: 95630
Email ggraening@gmail.com
Phone: 9164525442

Attachment 2: Site Photographs


JASON CT
STOP

APPENDIX C

ACOUSTICAL ANALYSIS

AVENUE 12 SHOPPING CENTER
AVENUE 12 & JASON COURT
MADERA COUNTY, CALIFORNIA

WJVA Project No. 22-42

PREPARED FOR

LEGACY REALTY & DEVELOPMENT
5390 E. PINE AVENUE
FRESNO, CA 93636

PREPARED BY

WJV ACOUSTICS, INC.
VISALIA, CALIFORNIA

DECEMBER 22, 2023

INTRODUCTION

The project is a mixed-use development project consisting of both retail and health care land uses. The project would include a neighborhood market, gas station and car wash facility, a Starbuck retail store, and a Carmena Health Center facility. According to the project applicant the neighborhood store and gas station would operation 24 hours per day, and the car wash facility would operate between the hours of 6:00 a.m. and 9:00 p.m. The Starbucks retail store would operate 24 hours per day and the Carmena Heal Center facility would operate between the hours of 8:00 a.m. to 5:00 p.m.

Madera County has required an acoustical analysis to determine if noise generated by the proposed activities will comply with applicable Madera County noise standards. This acoustical analysis, prepared by WJV Acoustics Inc. (WJVA), is based on the site plan provided by the project applicant, facility operations data provided by the project applicant and noise level data obtained by WJVA at the project site and at other similar facilities.

Appendix A provides definitions of the acoustical terminology used in this report. Unless otherwise stated, all sound levels reported in this analysis are A-weighted sound pressure levels in decibels (dB). A-weighting de-emphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards utilize A-weighted sound levels, as they correlate well with public reaction to noise. Appendix B provides typical A-weighted sound levels for common noise sources.

In terms of human perception, a 5 dB increase or decrease is considered to be a noticeable change in noise levels. Additionally, a 10 dB increase or decrease is perceived by the human ear as half as loud or twice as loud. In terms of perception, generally speaking the human ear cannot perceive an increase (or decrease) in noise levels less than 3 dB.

CRITERIA FOR ACCEPTABLE NOISE EXPOSURE

Madera County General Plan

The Madera County Noise Element of the General Plan sets compatibility standards for transportation-related noise sources and stationary noise sources. Public roadways are considered transportation noise sources. Noise sources *not* related to traffic on public roadways, railroads or aircraft in flight are considered to be stationary noise sources. Such sources generally include commercial uses and stationary equipment.

For transportation noise sources, the Noise Element establishes land use compatibility criteria in terms of the Day-Night Average Level (L_{dn}) or Community Noise Equivalent Level (CNEL). The CNEL is applicable only to aircraft noise exposure, as required by the State of California. The County's exterior noise exposure criterion is 60 dB L_{dn} within outdoor activity areas of residential land uses unless the noise-sensitive use of concern is to be located near State Highway 99 or the Union Pacific or BNSF Railroad mainlines where an exterior exposure of up to 65 dB L_{dn} is allowed. Outdoor activity areas generally include backyards of single-family residences and individual patios or decks of multi-family developments. The intent of the exterior noise level requirement is to provide an acceptable noise environment for outdoor activities and recreation.

The Noise Element also requires that interior noise levels attributable to exterior transportation noise sources not exceed 45 dB L_{dn}. The intent of the interior noise level standard is to provide an acceptable noise environment for indoor communication and sleep.

For stationary noise sources, the Noise Element establishes noise compatibility criteria in terms of the hourly equivalent sound level (L_{eq}) and maximum sound level (L_{max}). The standards are more restrictive during the nighttime hours, defined as 10:00 p.m. to 7:00 a.m. The Noise Element standards for stationary noise sources are summarized in Table I. The standards are to be adjusted by -5 dB if the noise source of concern consists primarily of speech or music.

Madera County does not have a noise *ordinance* that is applicable to the project, and there are no federal or state noise level standards that may be applied to the project.

TABLE I

MADERA COUNTY NOISE ELEMENT STANDARDS
STATIONARY NOISE SOURCES

	Daytime (7:00 a.m.-10:00 p.m.)	Nighttime (10:00 p.m.-7:00 a.m.)
Hourly Equivalent Sound Level (L_{eq}), dBA	50	45
Maximum Sound Level (L_{max}), dBA	70	65

[1]As determined at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barriers on the property line.

Source: Madera County Noise Element

Construction Noise and Vibration

Section 9.58 (Noise Regulations) of the Madera County Code of Ordinances provides some guidance in regards to construction noise and vibration:

- *Construction activities are limited to the hours of seven a.m. and seven p.m. Monday through Friday and nine a.m. and five p.m. on Saturdays. Construction activities will be prohibited on Sundays.*

- *"Vibration perception threshold" means the minimum ground or structure-borne vibrational motion necessary to cause persons of normal sensitivity to be aware of the vibration by such direct means as, but not limited to, sensation by touch or visual observation of moving objects. The perception threshold shall be presumed to be a motion velocity of one one-tenth inches per second over the range of one to one hundred Hz. This threshold shall be applied at the location where the sensitivity exists, such as the property lines within a residential development or from the location of a residence constructed an agricultural property.*

Additional guidance is provided by the Caltrans Transportation and Construction Vibration Guidance Manual[1]. The Manual provides guidance for determining annoyance potential criteria and damage potential threshold criteria. These criteria are provided below in Table II and Table III, and are presented in terms of peak particle velocity (PPV) in inches per second (in/sec). For the purpose of this analysis, a threshold of significance for which a construction vibration impact is considered to occur is 0.1 PPV (in/sec).

[1] California Department of Transportation, *Transportation and Construction Vibration Guidance Manual,* April 2020.

TABLE II GUIDELINE VIBRATION ANNOYANCE POTENTIAL CRITERIA		
Barely Perceptible	0.04	0.01
Strongly Perceptible	0.9	0.1
Source: Caltrans		

TABLE III GUIDELINE VIBRATION DAMAGE POTENTIAL THRESHOLD CRITERIA		
Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile, historic buildings, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5
Source: Caltrans		

EXISTING NOISE ENVIRONMENT

The project site is located at the southwest corner of Avenue 12 and Jason Court, in an unincorporated part of Madera County, near the community of Madera Ranchos. The project site is generally bound by Avenue 12 and commercial/retail land uses to the north, a self-storage facility to the east, and residential land uses to the south and the west.

WJVA staff conducted ambient noise level measurements in the vicinity of the project site on September 14 and 15, 2023. Long-term (24-hour) ambient noise level measurements were conducted at one (1) location (sites LT-1). Ambient noise levels were measured for a period of 24 continuous hours at the two long-term ambient noise measurement locations. Site LT-1 was located along the project site southern property line, at the adjacent residential land use. The location of the long-term ambient noise measurement sites is provided as Figure 2.

Noise monitoring equipment consisted of Larson-Davis Laboratories Model LDL-820 sound level analyzers equipped with B&K Type 4176 1/2" microphones. The equipment complies with the specifications of the American National Standards Institute (ANSI) for Type I (Precision) sound level meters. The meters were calibrated with a B&K Type 4230 acoustic calibrator to ensure the accuracy of the measurements.

Measured hourly energy average noise levels (L_{eq}) at site LT-1 ranged from a low of 39.0 dB between 2:00 a.m. and 3:00 a.m. to a high of 59.1 dBA between 7:00 a.m. and 8:00 a.m. Hourly maximum (L_{max}) noise levels at site LT-1 ranged from 53.6 to 82.2 dBA. Residual noise levels at the monitoring site, as defined by the L_{90}, ranged from 32.5 to 47.6 dBA. The L_{90} is a statistical descriptor that defines the noise level exceeded 90% of the time during each hour of the sample period. The L_{90} is generally considered to represent the residual (or background) noise level in the absence of identifiable single noise events from traffic, aircraft, and other local noise sources. The measured L_{dn} value at site LT-1 was 53.3 dB L_{dn}. Figure 3 graphically depicts hourly variations in ambient noise levels at site LT-1 for the 24-hour measurement period. Figure 4 provides a photograph of measurement site LT-1.

In respect to the applicable Madera County daytime and nighttime noise level standards, the measured average L_{eq} and L_{max} noise levels for both daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) at ambient site LT-1 are as follows:

- Daytime: 73 dB $L_{max,}$ 51 dB L_{eq}
- Nighttime: 60 dB $L_{max,}$ 46 dB L_{eq}

Additionally, short-term (15-minute) ambient noise level measurements were conducted at three (3) locations (Sites ST-1, ST-2 and ST-3). Two (2) individual measurements were taken at each of the three short-term sites to quantify ambient noise levels in the morning and afternoon hours. The locations of the long-term and short-term noise monitoring sites are provided on Figure 2.

Table IV summarizes short-term noise measurement results. The noise measurement data included energy average (L_{eq}) and maximum (L_{max}), the Madera County noise standard metrics applicable to the project (provided above as Table I). Observations were made of the dominant noise sources affecting the measurements

Short-term ambient noise measurements were conducted for 15-minute periods at each of the three sites. Sites ST-1 and ST-2 were located along Jason Court, in the vicinity of existing residential land uses. Site ST-3 was located near the southeast corner of the project site, near an existing self-storage facility.

TABLE IV

SUMMARY OF SHORT TERM NOISE MEASUREMENT DATA
AVENUE 12 SHOPPING CENTER
AUGUST 14 & 15, 2023

Site	Time	A-Weighted Decibels, dBA		Sources
		L_{eq}	L_{max}	
ST-1	7:45 a.m.	63.1	84.2	TR
ST-1	4:15 p.m.	61.4	86.1	TR, AC
ST-2	8:05 a.m.	56.9	77.4	TR, L
ST-2	4:35 p.m.	55.5	72.0	TR
ST-3	8:25 a.m.	48.6	64.2	TR
ST-3	4:55 p.m.	51.4	66.1	TR

TR: Traffic AC: Aircraft L: Landscaping Activities
Source: WJV Acoustics, Inc.

PROJECT-RELATED NOISE LEVELS

The project would include a variety of commercial retail land uses, including major retail chains, restaurants (including drive-thru quick service), convenience store, fuel service retail and car wash. The exact tenants of the multi-use retail development were not known at the time this analysis was prepared. A wide variety of noise sources can be associated with commercial retail land uses. The noise levels produced by such sources can also be highly variable and could potentially impact existing off-site and proposed on-site sensitive receptors. Typical examples of stationary noise sources associated with such land uses include:

- HVAC/Mechanical equipment
- Truck deliveries
- Parking lot activities (closing of car doors and trunks, stereos, alarms etc.)
- Drive Thru operations
- Car Wash Operations

Mechanical Equipment

It is assumed that the project would include roof-mounted HVAC units on the proposed buildings. The heating, ventilating, and air conditioning (HVAC) requirements for the buildings would likely require the use of multiple packaged roof-top units. For the purpose of noise and aesthetics, roof-mounted HVAC units are typically shielded by means of a roof parapet. WJVA has conducted reference noise level measurements at numerous commercial and retail buildings with roof-mounted HVAC units, and associated noise levels typically range between approximately 45-50 dB at a distance of 50 feet from the building façade.

For this project, the closest residential property lines to any potential roof-mounted HVAC equipment would be located at a minimum setback distance of 100 feet. Taking into account the standard rate of noise attenuation with increased distance from a point source (-6 dB/doubling of distance), noise levels associated with the operation of roof-mounted HVAC units would be approximately 39-44 dB at the closest sensitive receptor property line. Such levels do not exceed any Madera County noise level standard or exceed existing (without project) ambient noise levels.

Truck Movements

At the time of this analysis, a specific truck access route (or routes) had not been designated. However, trucks would access the project site by one of two (2) access points, one access point off Avenue 12 and one access point off Jason Court. It is assumed that truck deliveries would generally occur within the northern portion of the project site, in the vicinity of Avenue 12. The southern portion of the project site is a proposed medical office building, and regular truck deliveries would not be anticipated for this use. However, precise details on truck deliveries were not known at the time of this analysis.

WJVA has conducted measurements of the noise levels produced by slowly moving trucks for a number of studies. Such truck movements would be expected to produce noise levels in the range of 65 to 71 dBA at a distance of 100 feet. The range in measured truck noise levels is due to differences in the size of trucks, their speed of movement and whether they have refrigeration units in operation during the pass-by.

Truck movements within the project site could occur at distances of 100 feet or greater from existing noise-sensitive land uses (residences to the west). As such distances, noise levels associated with on-site truck movements would produce maximum noise levels in the range of approximately 65 to 71 dB or less. Such noise levels would generally not be expected to exceed the County's daytime (7:00 a.m. to 10:00 p.m.) noise level standard of 70 dB L_{max}, but could exceed the County's nighttime (10:00 p.m. to 7:00 a.m.) noise level standard of 65 dB L_{max}. At the time this analysis was prepared it was not known by WJVA if the project would anticipate nighttime deliveries.

In regards to the residential land uses along the project site southern property line, truck movements are not anticipated in this area as the Carmena Health Center facility is not anticipated to receive large truck deliveries. Additionally, the Carmena Health Center would operate between the hours of 8:00 a.m. to 5:00 p.m., and would not include nighttime operations.

Parking Lot Activities

Noise due to traffic in parking lots is typically limited by low speeds and is not usually considered to be significant. Human activity in parking lots that can produce noise includes voices, stereo systems and the opening and closing of car doors and trunk lids. Such activities can occur at any time. The noise levels associated with these activities cannot be precisely defined due to variables such as the number of parking movements, time of day and other factors. It is typical for a passing car in a parking lot to produce a maximum noise level of 60 to 65 dBA at a distance of 50 feet, which is comparable to the level of a raised voice.

For this project, parking would be dispersed throughout the overall project area. The closest proposed parking areas would be located at least 100 feet from the closest existing residential property lines to the west. At this distance, maximum (L_{max}) parking lot vehicle movements would be expected to be approximately 54 to 59 dB. Such levels would not exceed any of the County's applicable noise levels standards or exceed existing ambient noise levels at the closest residential land uses.

In regards to the residential land uses located along the southern project site property line, car movements and parking lot activities within this area would be limited to daytime hours of 8:00 a.m. to 5:00 p.m. (proposed hours of operation for the Carmena Health Center). As described above, average existing hourly maximum noise levels in the vicinity of the residence to the south are approximately 73 dB. Vehicle movements and parking lot activities would not be expected to exceed these existing maximum ambient noise levels.

Car Wash

According to the project site plan, the project would include a drive-through car wash tunnel, located at the eastern side of project site, along the east side of the proposed Urban Market Gas Station building. The distance between the proposed car wash operations and the closest residential property line is approximately 280 feet.

According to the project applicant, the car wash would utilize Mark VII car wash equipment, including the AquaDri Dryer Model FS-40HP Freestanding wash/dry equipment. WJVA was provided the noise levels associated with the proposed equipment from Mark VII. This noise level data is provided as Appendix C.

According to the noise level data provided by the equipment manufacturer, noise levels associated with the dryers (the noise-producing component of the car wash equipment), noise levels at the entrance end of the tunnel (the portion of the tunnel facing the residential land uses to the south) would be 89 dB at a distance of ten (10) feet from the entrance.

The car wash operates such that one vehicle enters the tunnel and remains in the tunnel while the car wash equipment operates and moves around the parked vehicle. According to Mark VII staff, each wash cycle would last approximately five to six (5-6) minutes, during which time dryers (blowers) would be in operation for 60 seconds. While the dryers are not in operation, noise levels would not be audible beyond the immediate vicinity of the car wash. With this cycle time and dryer time in consideration, the maximum amount of time during any given hour that the dryers could be in operation and producing noise would be approximately twelve (12) minutes.

Taking into account the above-described noise levels, dryer cycle times, and applying the standard rate of noise attenuation with increased distance from a point source (-6 dB/doubling of distance), WJVA calculated expected car wash noise levels at the closest noise-sensitive receiver locations (residential property line) to the proposed car wash facility. Car wash noise levels would be approximately 53 dB L_{eq} at the residential property line located south of the car wash location. Such noise levels would exceed the applicable Madera County daytime (7:00 a.m. to 10:00 p.m.) noise level standard of 50 dB L_{eq} by 3 dB and exceed the nighttime (10:00 p.m. to 7:00 a.m.) noise level standard of 45 dB L_{eq} by 8 dB. Mitigation measures most therefore be incorporated into project design.

Potential Impact

Noise levels associated with the proposed car wash could exceed the applicable Madera County daytime noise level standard by 3 dB and the nighttime noise level standard by 8 dB.

Mitigation Measures

As described above, noise levels associated with the proposed car wash operations would be expected to exceed the County's exterior noise level standards by up to 3 dB during daytime hours (7:00 a.m. to 10:00 p.m.) and by up to 8 dB during nighttime hours (10:00 p.m. to 7:00 a.m.) Appropriate mitigation measures must therefore be incorporated into project design.

In order to mitigate car wash noise levels at the existing residential property lines located to the south of the project site, a sound wall would need to be constructed along the car wash tunnel entrance. The minimum required height of the sound wall along the car wash tunnel entrance was calculated using a proprietary sound wall insertion loss model. The model calculates the insertion loss (noise reduction) of a wall of a given height based on the effective height of the noise source, height of the receiver, distance from the receiver to the wall, and distance from the noise source to the wall.

Based upon the above-described project-related noise levels and insertion loss model, it was determined that a sound wall with a minimum height of six (6') feet above ground elevation would mitigate project related noise levels to the applicable daytime noise level standards and a sound wall with a minimum height of nine feet six inches (9'6") above ground elevation would mitigate project related noise level to the applicable nighttime noise level standards, at the residential property lines south of the project site. The sound wall should be constructed in the location as shown in red on Figure 1. The sound wall would reduce project-related noise levels to below applicable Madera County daytime standards, but would not reduce project-related noise levels to below the City's applicable nighttime standards.

The following options would be required to comply with Madera County noise levels standards:

- Construct a 6-foot sound wall along the car wash entrance tunnel, as indicated on Figure 1 AND Restrict car wash operations to the daytime hours of 7:00 a.m. to 10:00 p.m.

OR

- Construction of a 9.5-foot sound wall along the car wash entrance tunnel, as indicated on Figure 1.

Drive Thru Retail

According to the project site plan, a Starbucks retail store with a drive-thru would be located in the northwest portion of the project site. It is assumed that the drive-thru would include an amplified menu-board for customers to place their orders.

In order to assess potential project noise levels associated with drive-thru operations, WJVA utilized reference noise levels measured at a Wendy's drive-thru restaurant located on South Mooney Boulevard in Visalia. Measurements were conducted during the early afternoon of July 11, 2011 between 12:45 p.m. and 1:45 p.m. using the previously-described noise monitoring equipment.

The microphone used by customers to order food and the loudspeaker used by employees to confirm orders are both integrated into a menu board that is located a few feet from the drive-

thru lane at the approximate height of a typical car window. Vehicles would enter the drive-thru lane from the west and then turn to the north along the east side of the restaurant.

Reference noise measurements were obtained at a distance of approximately 40 feet from the menu board containing the microphone/loudspeaker system at an angle of about 45° toward the rear of the vehicle being served. This provided a worst-case exposure to sound from the loudspeaker system since the vehicle was not located directly between the loudspeaker and measurement location. Cars were lined up in the access lane during the noise measurement period indicating that the drive-through lane was operating at or near a peak level of activity.

Each ordering cycle was observed to take approximately 60 seconds including vehicle movements. A typical ordering cycle included 5-10 seconds of loudspeaker use with typical maximum noise levels in the range of 60-62 dBA at the 40 foot-reference location. Vehicles moving through the drive-thru lane produced noise levels in the range of 55-60 dBA at the same distance. Vehicles parked at the ordering position (between the menu board and measurement site) were observed to provide significant acoustic shielding during the ordering sequence. The effects of such shielding are reflected by the noise measurement data. Noise levels were measured to approximately 60 dB L_{eq} at the measurement site, and included noise from all sources, including the loudspeaker, vehicle movements and HVAC equipment.

The closest noise-sensitive receptors (residential land uses) to the proposed retail drive thru operations (menu board location) are located approximately 175 feet to the west. Potential project-related noise levels at the locations of the closest residential land uses were calculated based upon the above-described reference noise measurement data and the normal rate of sound attenuation over distance for a "point" noise source (6 dB/doubling of distance). At the setback distance of the closest residential land uses to any proposed drive-thru operations, noise levels associated with drive thru retail operations would be expected to produce noise levels of approximately 45-47 dB L_{max} and approximately 47 dB L_{eq}. Such levels would not exceed any Madera County daytime noise level standards, they slightly exceed the nighttime noise level standard of 45 dB L_{eq}. However, based upon ambient noise level measurements and the proximity of the drive thru to Avenue 12, these noise levels would not exceed existing (without project) ambient noise levels at any nearby residential land use.

Combined Noise Levels

The above-described sources of noise could at times occur simultaneously. Specifically, the car wash, drive-thru retail activities and mechanical equipment (HVAC), for which compliance would be determined by the hourly equivalent (L_{eq}) noise level standard. The noise levels associated with vehicle and truck movements are considered more temporal and intermittent, and compliance would be determined by the maximum (L_{max}) noise level standard. It should be noted, decibels are logarithmic in nature, and cannot be added arithmetically.

Noise levels associated with the car wash would impact the residential land uses south of the project site. At the residential property line south of the project site, combined noise levels

associated with the drive thru retail would not exceed 50 dB L_{eq} if applicant opts to mitigate car wash noise only to daytime compliance standard and would not exceed 45 dB L_{eq}.

In regards to the residential land uses west of the project site, along the west side of Jason Court, combined drive-thru operational noise and HVAC noise could be expected to be approximately 49 dB L_{eq}. As described above, such noise levels do not exceed existing ambient noise levels measured in the vicinity of these residences (due to existing traffic noise along Avenue 12).

Construction Noise and Vibration

Construction noise is not considered to be a significant impact if construction is limited to the allowed hours and construction equipment is adequately maintained and muffled. Extraordinary noise-producing activities (e.g., pile driving) are not anticipated. Madera County limits hours of construction activities to occur between 7:00 a.m. and 7:00 p.m. Monday through Friday and between 9:00 a.m. to 5:00 p.m. on Saturdays. A noise impact could occur if construction activities were to occur outside these allowable hours.

Construction noise would occur at various locations within and near the project site through the buildout period. Existing sensitive receptors could be located as close as 50-100 feet from construction activities. Table V provides typical construction-related noise levels at distances of 25, 50, 100 feet, and 200 feet.

TABLE V

TYPICAL CONSTRUCTION EQUIPMENT MAXIMUM NOISE LEVELS, dBA

Type of Equipment	25 Ft.	50 Ft.	100 Ft.	200 Ft.
Concrete Saw	96	90	84	78
Crane	87	81	75	69
Excavator	87	81	75	69
Front End Loader	85	79	73	67
Jackhammer	95	89	83	77
Paver	83	77	71	65
Pneumatic Tools	91	85	79	73
Dozer	87	81	76	70
Rollers	86	80	74	68
Trucks	92	86	80	72
Pumps	86	80	74	68
Scrapers	93	87	81	75
Portable Generators	87	81	74	68
Backhoe	92	86	80	74
Grader	92	86	80	74

Source: FHWA
Noise Control for Buildings and Manufacturing Plants, Bolt, Beranek & Newman, 1987

The dominant sources of man-made vibration are sonic booms, blasting, pile driving, pavement breaking, demolition, diesel locomotives, and rail-car coupling. None of these activities are anticipated to occur with construction or operation of the proposed project. Vibration from construction activities could be detected at the closest sensitive land uses, especially during movements by heavy equipment or loaded trucks and during some paving activities. Typical vibration levels at distances of 25, 100 feet and 300 feet are summarized by Table VI. These levels would not be expected to exceed any significant threshold levels for damage, as provided above in Table III (the residence located to the south of the project is not considered to be a "fragile building").

TABLE VI

TYPICAL VIBRATION LEVELS DURING CONSTRUCTION

	PPV (in/sec)		
Equipment	**@ 25´**	**@ 100´**	**@ 300´**
Bulldozer (Large)	0.089	0.019	0.006
Bulldozer (Small)	0.003	0.0006	0.0002
Loaded Truck	0.076	0.017	0.005
Jackhammer	0.035	0.008	0.002
Vibratory Roller	0.210	0.046	0.013
Caisson Drilling	0.089	0.019	0.006

Source: *Caltrans*

CONCLUSIONS AND RECOMMENDATIONS

Noise levels measured at the project site, while amplified music was occurring at the proposed stage location, exceeded the County of Madera noise level standards by up to 9 dB during the simulated event. In order to comply with Madera County noise level standards, the following mitigation measures must be implemented to mitigate car wash related noise levels at the residential property lines south of (and adjacent to) the project site:

The following options would be required to comply with Madera County noise levels standards:

- **Construct a 6-foot sound wall along the car wash entrance tunnel, as indicated in red on Figure 1 AND Restrict car wash operations to the daytime hours of 7:00 a.m. to 10:00 p.m.**

OR

- **Construction of a 9.5-foot sound wall along the car wash entrance tunnel, as indicated in red on Figure 1.**

As a point of clarity, if the applicant chooses to construct a 6-foot sound wall, the wall would provide sufficient noise attenuation to comply with the daytime noise level standards only, and car wash operations must be limited to the daytime hours of 7:00 a.m. to 10:00 p.m. If the applicant wishes to operate the car wash outside of the daytime hours of 7:00 a.m. to 10:00 p.m., the applicant must construct a 9.5-foot sound wall to mitigate car wash noise levels to below the applicable nighttime noise level standard.

The foregoing conclusions and recommendations are based upon the best information known to WJV Acoustics, Inc. (WJVA) at the time the study was prepared concerning the proposed site plan, car wash noise levels, and/or proposed activities and hours of operations. Any significant changes to car wash technology, project site plan, and other information used for this analysis will require a reevaluation of the findings of this report. Additionally, any significant future changes in noise regulations or other factors beyond WJVA's control may result in long-term noise results different from those described by this analysis.

Respectfully submitted,

Walter J. Van Groningen
President

WJV:wjv

FIGURE 1: PROJECT SITE PLAN

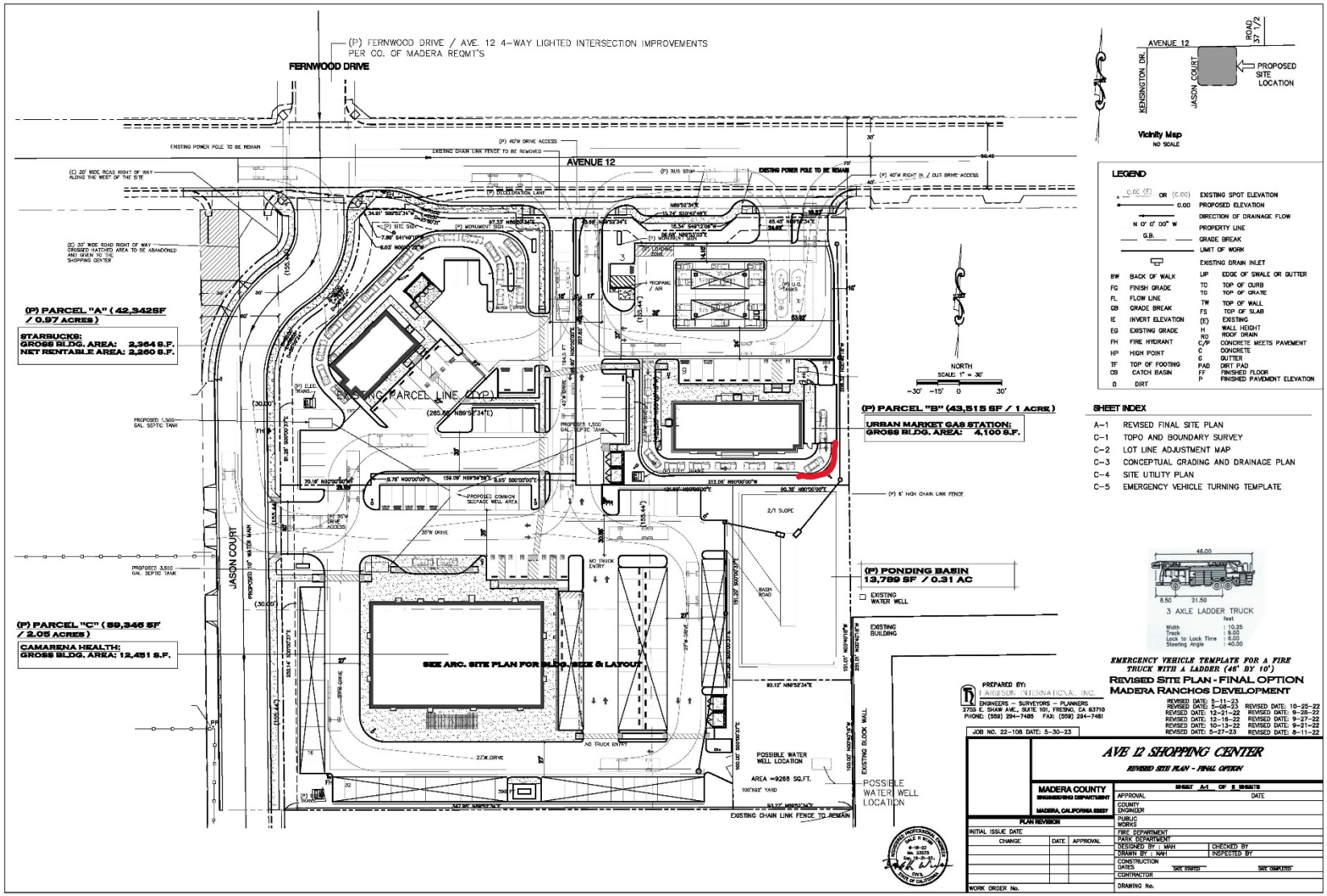


FIGURE 2: PROJECT VICINITY, NOISE MONITORING SITES AND PA SYSTEM LOCATION

FIGURE 3: HOURLY NOISE LEVELS AT AMBIENT NOISE MEASUREMENT SITE LT-1

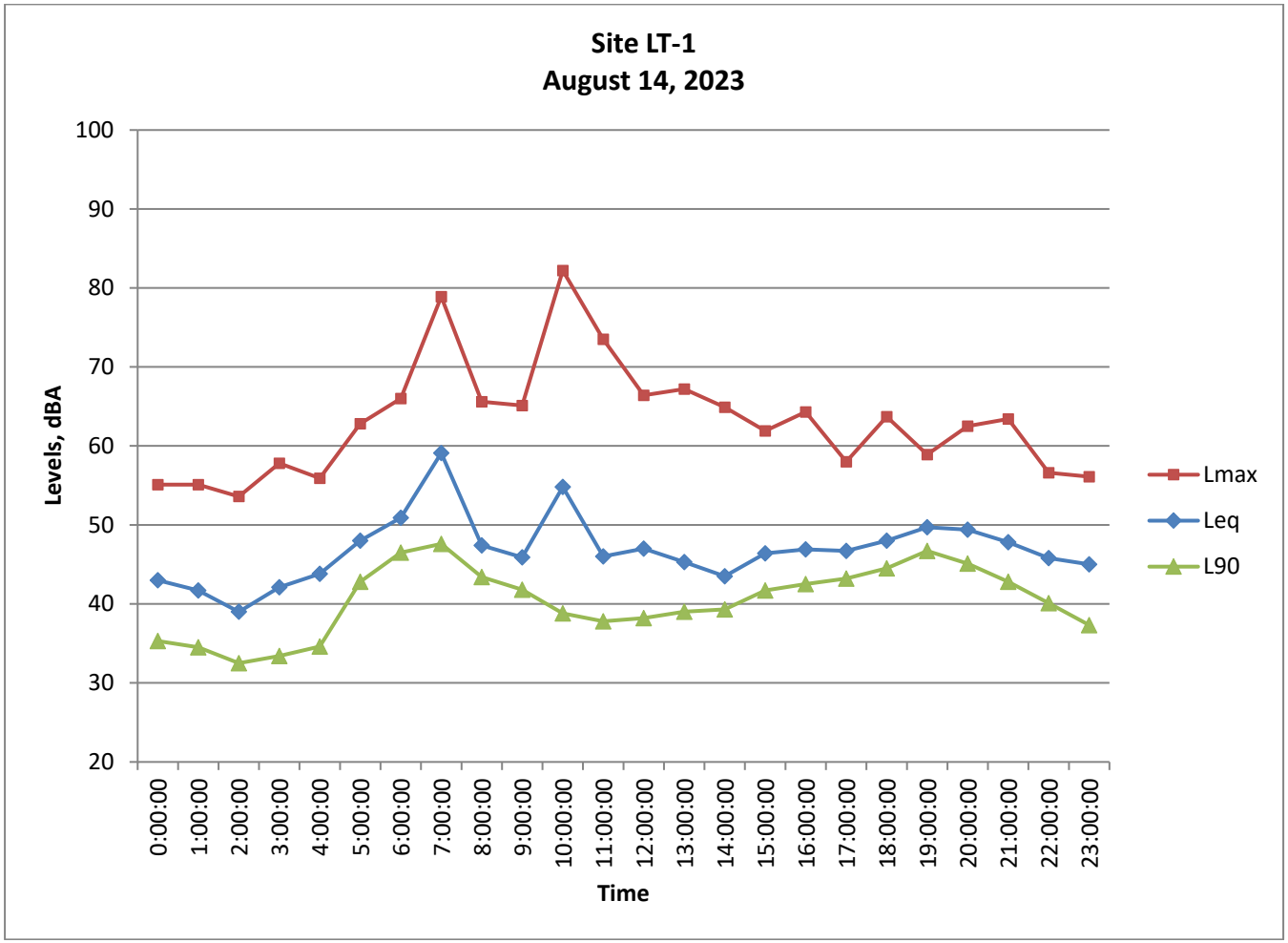


FIGURE 3: AMBIENT NOISE MEASUREMENT SITE LT-1

APPENDIX A

ACOUSTICAL TERMINOLOGY

AMBIENT NOISE LEVEL: The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

CNEL: Community Noise Equivalent Level. The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m.

DECIBEL, dB: A unit for 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, which is 20 micropascals (20 micronewtons per square meter).

DNL/L_{dn}: Day/Night Average Sound Level. The average equivalent sound level during a 24-hour day, obtained after addition of ten decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.

L_{eq}: Equivalent Sound Level. The sound level containing the same total energy as a time varying signal over a given sample period. L_{eq} is typically computed over 1, 8 and 24-hour sample periods.

NOTE: The CNEL and DNL represent daily levels of noise exposure averaged on an annual basis, while L_{eq} represents the average noise exposure for a shorter time period, typically one hour.

L_{max}: The maximum noise level recorded during a noise event.

L_n: The sound level exceeded "n" percent of the time during a sample interval (L_{90}, L_{50}, L_{10}, etc.). For example, L_{10} equals the level exceeded 10 percent of the time.

A-2

ACOUSTICAL TERMINOLOGY

NOISE EXPOSURE CONTOURS: Lines drawn about a noise source indicating constant levels of noise exposure. CNEL and DNL contours are frequently utilized to describe community exposure to noise.

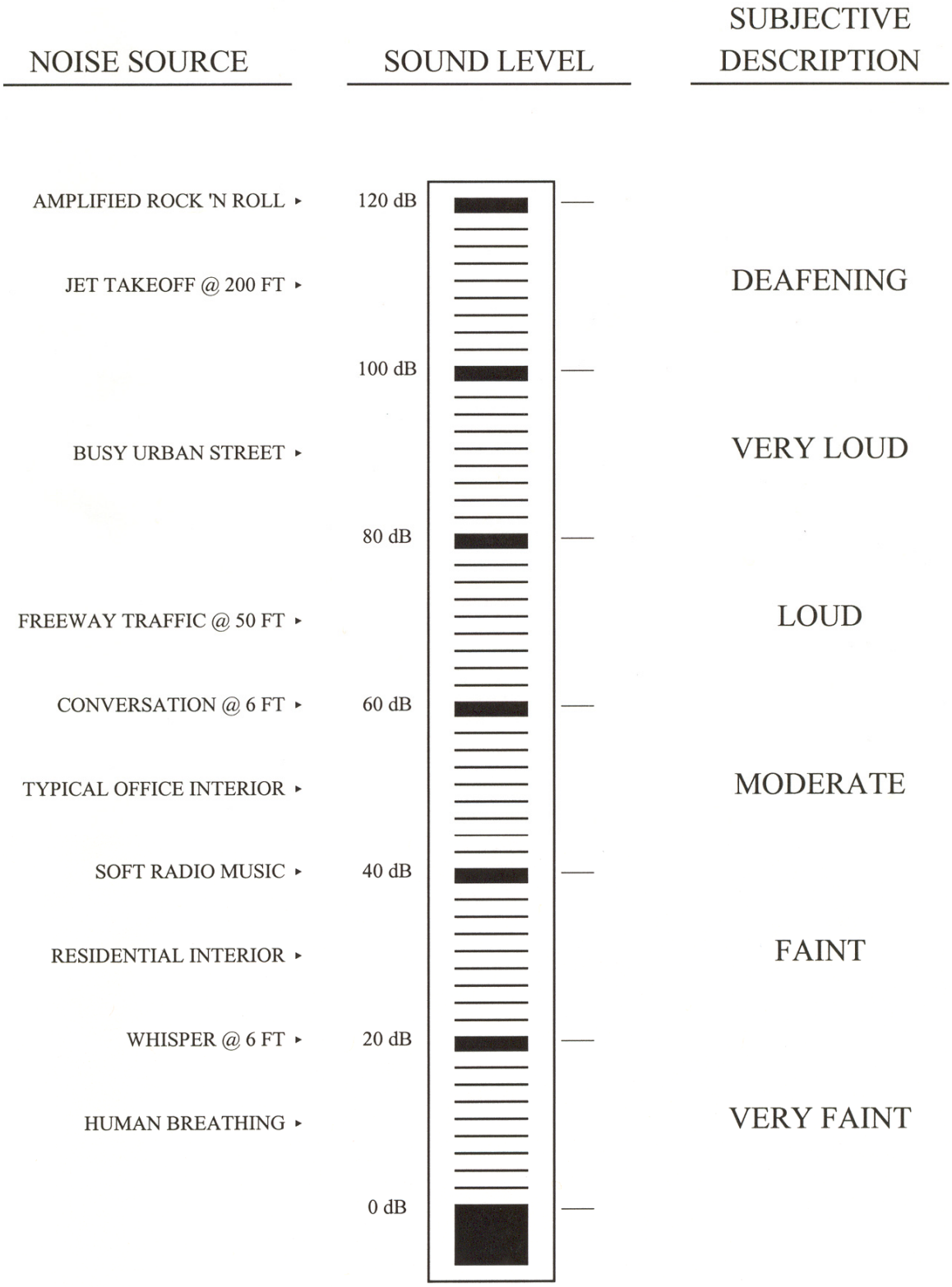
NOISE LEVEL REDUCTION (NLR): The noise reduction between indoor and outdoor environments or between two rooms that is the numerical difference, in decibels, of the average sound pressure levels in those areas or rooms. A measurement of Anoise level reduction@ combines the effect of the transmission loss performance of the structure plus the effect of acoustic absorption present in the receiving room.

SEL or SENEL: Sound Exposure Level or Single Event Noise Exposure Level. The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to a duration of one second. More specifically, it is the time-integrated A-weighted squared sound pressure for a stated time interval or event, based on a reference pressure of 20 micropascals and a reference duration of one second.

SOUND LEVEL: 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 response of the human ear and gives good correlation with subjective reactions to noise.

SOUND TRANSMISSION CLASS (STC): The single-number rating of sound transmission loss for a construction element (window, door, etc.) over a frequency range where speech intelligibility largely occurs.

APPENDIX B
EXAMPLES OF SOUND LEVELS



APPENDIX D

TRAFFIC STUDY

Proposed Commercial Development

Southeast of the Intersection of Avenue 12 and Jason Court
Madera Ranchos, Madera County, California

Prepared For:

Legacy Realty & Development
5390 East Pine Avenue
Fresno, California 93727

Date:

July 21, 2023

Job No.:

22-035.01

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Mr. Devin Tienken
Legacy Realty & Development
5390 East Pine Avenue
Fresno, California 93727

July 21, 2023

Subject: Traffic Study
Proposed Commercial Development
Southeast of the Intersection of Avenue 12 and Jason Court
Madera Ranchos, Madera County, California

Dear Mr. Tienken:

1.0 INTRODUCTION

This report presents the results of a traffic study for the subject project in Madera County, California. This analysis focuses on the anticipated effect of vehicle traffic resulting from the project.

2.0 PROJECT DESCRIPTION

The proposed project is commercial development located on approximately 4.58 acres southeast of the intersection of Avenue 12 and Jason Court in the Madera Ranchos, Madera County, California. The project includes a 2,364-square-foot Starbucks with a drive-through window, a 4,100-square-foot convenience market, a gas station with 12 fueling positions and a car wash, and a single-story 12,451-square-foot medical office building. It is our understanding that the drive-through window in the convenience market is not intended for fast-food restaurant purposes and will serve the same products sold in the convenience market (with the exception of liquor and tobacco) with an option for on-line ordering in advance.

Site access will be via two right-in/right-out driveways connecting to Avenue 12 and one full-access driveway connecting to Jason Court. Jason Court will be realigned to match Fernwood Drive to the north.

A vicinity map is presented in the attached Figure 1, Site Vicinity Map, following the text of this report. A site plan is presented in Figure 2, Site Plan.

3.0 STUDY AREA AND TIME PERIOD

This report includes analyses of the following intersections:

- Avenue 12 / Road 36
- Avenue 12 / Jason Court / Fernwood Drive.

The study time periods for operational analyses include the weekday a.m. and p.m. peak hours determined between 7:00 and 9:00 a.m. and between 4:00 and 6:00 p.m. Based on comments received from County staff, the peak hours were analyzed for the following conditions:

- Existing Conditions;
- Existing-Plus-Project Conditions;
- Opening Year (2024) With-Project Conditions.

The County requested that an estimate of the 95th-percentile queue in the Starbucks drive through be provided.

4.0 LANE CONFIGURATIONS AND INTERSECTION CONTROL

The existing lane configurations and intersection control at the study intersections are presented in Figure 3, Existing Lane Configurations and Intersection Control.

5.0 EXISTING TRAFFIC VOLUMES

Existing traffic volumes were determined by performing manual turning movement counts at the study intersections between 7:00 and 9:00 a.m. and between 4:00 and 6:00 p.m. on a weekday while school was in session. The existing peak-hour turning movement volumes are presented in Figure 4, Existing Peak-Hour Traffic Volumes. The traffic count data sheets are presented in Appendix A.

6.0 TRIP GENERATION

6.1 Project Trip Generation and Internal Capture

Data provided in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition,* are typically used to estimate the number of trips anticipated to be generated by proposed projects. Table 1 presents the trip generation estimates for the Project.

Data presented in the ITE *Trip Generation Handbook, 3rd Edition* dated September 2017 (TGH) contains information suggesting that the Project would generate internal trips (sometimes referred to as "internally-captured trips"). Estimation of the number of internal trips accounts for the interaction between the various individual land uses assumed for the trip generation calculations. A common example of an internal trip occurs in a multi-use development containing both offices and shops. A trip made from an office by an office worker to a retail shop within the site is defined as internal to (i.e., "captured within") the multi-use site. A more complete description of internal trips is presented in the TGH.

An example of an internal trip for the proposed Project is a person who purchases coffee at the Starbucks and also purchases fuel at the gas station without exiting the site. An internal capture rate is generally defined as the percentage of total trips generated by a site that are made entirely within the site. The internal capture is generally limited by the uses generating fewer trips, which in this case are the office building and the Starbucks. A maximum internal capture rate of five percent was assumed between the office/Starbucks and the convenience market/gas station. The trips generated by the office building and the Starbucks were multiplied by five percent to estimate the office/Starbucks internal capture presented in Table 1. Considering that the car wash will typically be purchased at gas pumps or within

the convenience market, it is assumed that 90 percent of the vehicles accessing the car wash are internally captured from the gas station. Therefore, the trips generated by the car wash were multiplied by 90 percent to estimate the car wash internal capture presented in Table 1.

Table 1
Trip Generation Estimate

Land Use	Units	Weekday		A.M. Peak Hour					P.M. Peak Hour				
		Rate	Total	Rate	In:Out	In	Out	Total	Rate	In:Out	In	Out	Total
Medical-Dental Office Building – Stand Alone (720)	12,451 sq. ft.	36.00	450	3.10	79:21	31	8	39	3.93	30:70	15	34	49
Coffee/Donut Shop with Drive-Through Window (937)	2,364 sq. ft.	533.57	1,262	85.88	51:49	104	99	203	38.99	50:50	46	46	92
Convenience Store/Gas Station – GFA (4-5.5K) (945)	12 VFP	257.13	3,086	27.04	50:50	163	162	325	22.76	50:50	137	137	274
Automated Car Wash (948)	1 lane	776	776	77.50 *	50:50 *	39	39	78	77.50	50:50	39	39	78
SUBTOTAL:			5,574			337	308	645			237	256	493
Internal Capture (Office/ Starbucks)			-84			-7	-5	-12			-3	-4	-7
Internal Capture (Car Wash)			-698			-35	-35	-70			-35	-35	-70
TOTAL:			**4,972**			**295**	**268**	**563**			**199**	**217**	**416**

Reference: *Trip Generation Manual, 11th Edition, Institute of Transportation Engineers 2021*
Rates are reported in trips per 1,000 square feet of building area for Land Uses 720 and 937.
Rates are reported in trips per vehicle fueling position (VFP) for Land Use 945.
Rates are reported in trips per lane for Land Use 948.
** ITE does not provide data for the daily volumes, so it was assumed that 10 percent of the daily volume occurs during the P.M. peak hour and the daily rate was estimated by multiplying the P.M. peak hour rate by 10.
** ITE does not provide data for the A.M. peak hour, so P.M. peak hour data were applied.

6.2 Pass-By Trips

The ITE *Trip Generation Handbook, 3rd Edition* dated September 2017 (TGH) presents information suggesting that pass-by reductions are applicable to the Project. The TGH states: "*There are instances, however, when the total number of trips generated by a site is different from the amount of new traffic added to the street system by the generator. For example, retail-oriented developments such as shopping centers…are often located adjacent to busy streets in order to attract the motorists already on the street. These sites attract a portion of their trips from traffic passing the site… These retail trips may not add new traffic to the adjacent street system.*" The TGH also states: "*Pass-by trips are made as intermediate stops on the way from an origin to a primary trip destination without a route*

diversion. Pass-by trips are attracted from traffic passing the site on an adjacent street or roadway that offers direct access to the generator. Pass-by trips are not diverted from another roadway."

Data provided in Appendix E of the TGH and the proposed orientation of the Project on Avenue 12 suggest that pass-by trips will occur at the Project site. Data available from ITE indicate the following average pass-by trip percentages for uses similar to the proposed Project:

- Convenience Market/Gas Station (Land Use 945): 76 percent of the weekday a.m. peak hour trips and 75 percent of the weekday p.m. peak hour trips.
- Coffee/Donut Shop with Drive-Through Window and No Indoor Seating (Coffee/Espresso Stand) (Land Use 938): 89 percent of the daily trips.
- Fast Food Restaurant with Drive Through Window (Land Use 934): 50 percent of the weekday a.m. peak hour trips and 55 percent of the weekday p.m. peak hour trips.

For purposes of these analyses a pass-by rate of 50 percent was utilized. The pass-by percentage is applied only to the external trips generated by each land use and are not applied to the office building. Table 2 presents the volume of pass-by trips and new primary Project trips estimated to be generated by the Project.

Table 2
Pass-By Trips and Primary Project Trips

Time Period	Trips Entering Site	Trips Exiting Site
A.M. Peak Hour Primary Trips	163	138
A.M. Peak Hour Pass-By Trips	132	130
P.M. Peak Hour Primary Trips	107	126
P.M. Peak Hour Pass-By Trips	92	91
Weekday Primary Trips	1,356	1,356
Weekday Pass-By Trips	1,130	1,130

It should be noted that pass-by trips from westbound Avenue 12 are not allowed to turn directly into the site and will occur as left turns at the intersection of Avenue 12 and Jason Court.

6.3 Project Trip Distribution and Assignment

The Project trips were distributed to the adjacent road network using engineering judgment considering the distribution of existing traffic volumes available from other studies, the locations and types of streets in the study area, and complementary land uses in the region. The anticipated percentage distribution of Project trips is presented in Figure 5, Project Trip Distribution Percentages. The primary peak-hour Project trips identified in Table 2 are presented in Figure 6, Project Primary Peak-Hour Traffic Volumes. The pass-by trips identified in Table 2 are presented in Figure 7, Project Peak-Hour Pass-By/Diverted Trips.

7.0 EXISTING-PLUS-PROJECT TRAFFIC VOLUMES

Existing-plus-Project traffic volumes are presented in Figure 8, Existing-Plus-Project Peak-Hour Traffic Volumes, and were determined by adding the values in Figures 4, 6, and 7.

8.0 OPENING-YEAR TRAFFIC VOLUMES

To account for continued development in region, the existing traffic volumes were increased by one percent per year to the year 2024. Near-term with-Project traffic volumes are presented in Figure 9, Near-Term With-Project Peak-Hour Traffic Volumes.

9.0 SIGNIFICANCE CRITERIA

9.1 Vehicle Miles Traveled (VMT)

As of the date of this report, it is our understanding that the County of Madera has not adopted local significance criteria for VMT analyses. In the absence of local policies, the current state of the practice is to utilize information presented in The State of California Governor's Office of Planning and Research *Technical Advisory on Evaluating Transportation Impacts in CEQA* dated December 2018 (Technical Advisory). The Technical Advisory states, "*Of land use projects, residential, office, and retail projects tend to have the greatest influence on VMT*."

For small projects, the Technical Advisory states: "*Many local agencies have developed screening thresholds to indicate when detailed analysis is needed. Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact.*"

For retail projects, the Technical Advisory states the following:

> "*A net increase in total VMT may indicate a significant transportation impact.*"
>
> "*…new retail development typically redistributes shopping trips rather than creating new trips…*"

Regarding local-serving retail uses, the Technical Advisory states: "*By adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT. Thus, lead agencies generally may presume such development creates a less-than-significant transportation impact. Regional-serving retail development, on the other hand, which can lead to substitution of longer trips for shorter ones, may tend to have a significant impact. Where such development decreases VMT, lead agencies should consider the impact to be less-than-significant.*" The Technical Advisory also states: "*Generally, however, retail development including stores larger than 50,000 square feet might be considered regional-serving, and so lead agencies should undertake an analysis to determine whether the project might increase or decrease VMT*."

With respect to mixed-use projects, the Technical Advisory states: "*Lead agencies can evaluate each component of a mixed-use project independently and apply the significance threshold for each project type included (e.g., residential and retail). Alternatively, a lead*

agency may consider only the project's dominant use. In the analysis of each use, a project should take credit for internal capture. Combining different land uses and applying one threshold to those land uses may result in an inaccurate impact assessment."

9.2 Level of Service

9.2.1 General

The State of California does not recognize traffic congestion and delay as an environmental impact per the California Environmental Quality Act (CEQA). However, Policy 2.A.8 of the Madera County General Plan Policy Document requires that LOS D or better be maintained on County roadways. Therefore, it is anticipated that operational analyses will be required to identify the LOS at study locations.

The Transportation Research Board *Highway Capacity Manual*, 7th *Edition,* (HCM) defines level of service (LOS) as, "a quantitative stratification of a performance measure or measures representing quality of service. The measures used to determine LOS for transportation system elements are called *service measures*. The HCM defines six levels of service, ranging from A to F, for each service measure or combination of service measures. LOS A represents the best operating conditions from the traveler's perspective and LOS F the worst. For cost, environmental impact, and other reasons, roadways are typically not designed to provide LOS A conditions during peak periods but instead to provide some lower LOS that balances individual travelers' desires against society's desires and financial resources. Nevertheless, during low-volume periods of the day, a system element may operate at LOS A." Automobile mode LOS characteristics for both unsignalized and signalized intersections are presented in Tables 3 and 4.

Table 3
Level of Service Characteristics for Unsignalized Intersections

Level of Service	Average Vehicle Delay (seconds)
A	0-10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50

Table 4
Level of Service Characteristics for Signalized Intersections

Level of Service	Description	Average Vehicle Delay (seconds)
A	Volume-to-capacity ratio is no greater than 1.0. Progression is exceptionally favorable or the cycle length is very short.	≤10
B	Volume-to-capacity ratio is no greater than 1.0. Progression is highly favorable or the cycle length is very short.	>10-20
C	Volume-to-capacity ratio is no greater than 1.0. Progression is favorable or cycle length is moderate. Individual cycle failures may appear.	>20-35
D	Volume-to-capacity ratio is high but no greater than 1.0. Progression is ineffective or cycle length is long. Many vehicles stop and individual cycle failures are noticeable.	>35-55
E	Volume-to-capacity ratio is high but no greater than 1.0. Progression is unfavorable and cycle length is long. Individual cycle failures are frequent.	>55-80
F	Volume-to-capacity ratio is greater than 1.0. Progression is very poor and cycle length is long. Most cycles fail to clear the queue.	>80

Reference for Tables 3 and 4: *Highway Capacity Manual, 7th Edition,* Transportation Research Board, 2022

9.2.2 County of Madera Locations

Policy 2.A.8 of the Madera County General Plan Policy Document requires that LOS D or better be maintained on County roadways. For purposes of this study, a traffic issue will be recognized at County of Madera facilities if the Project will decrease the LOS below D at an intersection. A traffic issue will also be recognized if the Project will exacerbate the delay at an intersection already operating below the target LOS by increasing the average delay by 5.0 seconds or more, or by causing the LOS to drop from LOS E to LOS F.

10.0 IMPACT ANALYSES

The dominant local-serving retail use of the project will add retail opportunities into the urban fabric, improve retail destination proximity, shorten trips, and reduce VMT. The coffee shop, gasoline, and convenience market nature of the project is designed specifically for pass-by and local-serving trips, is less than 50,000 square feet in building area, and is not a regional destination. Furthermore, given the nature of the existing development in the Madera Ranchos, it is likely that many medical office trips are currently long trips, and that the additional opportunity of a medical office nearby is likely to reduce VMT rather than increase VMT. Therefore, it is suggested that the lead agency may presume that the project will cause a less-than-significant transportation impact.

11.0 INTERSECTION ANALYSES

The levels of service at the study intersections were determined using the computer program Synchro 11, which is based on the HCM procedures for calculating levels of service. The intersection analysis sheets are presented in Appendix B.

The California State Transportation Agency and California Department of Transportation *California Manual on Uniform Traffic Control Devices, 2014 Edition (Revision 7 dated March 10, 2023)* (CMUTCD) presents various criteria (warrants) for determining the need

for traffic signals. Peak-hour traffic signal warrants were performed for the intersection of Avenue 12 and Jason Court/Fernwood Drive. The traffic signal warrant analysis sheets are presented in Appendix C.

The results of the intersection operational analyses are presented in Tables 5 through 7. Levels of service and delays worse than the target LOS are indicated in bold type and are underlined.

Table 5
Intersection LOS Summary – Existing Conditions

Intersection	Control	A.M. Peak Hour			P.M. Peak Hour		
		Delay (sec)	LOS	Warrant Met?	Delay (sec)	LOS	Warrant Met?
Ave 12 / Road 36	Signals	20.6	C		18.0	B	
Ave 12 / Jason / Fernwood	TWS	**35.1**	**E**	No	**35.1**	**E**	No

Table 6
Intersection LOS Summary – Existing-Plus-Project Conditions

Intersection	Control	A.M. Peak Hour			P.M. Peak Hour		
		Delay (sec)	LOS	Warrant Met?	Delay (sec)	LOS	Warrant Met?
Ave 12 / Road 36	Signals	23.9	C		19.3	B	
Ave 12 / Jason / Fernwood	TWS	**>300**	**F**	Yes	**>300**	**F**	Yes

Table 7
Intersection LOS Summary – Near-Term With-Project Conditions

Intersection	Control	A.M. Peak Hour			P.M. Peak Hour		
		Delay (sec)	LOS	Warrant Met?	Delay (sec)	LOS	Warrant Met?
Ave 12 / Road 36	Signals	24.2	C		19.5	B	
Ave 12 / Jason / Fernwood	TWS	**>300**	**F**	Yes	**>300**	**F**	Yes

TWS: Two-way stop control

The results of the intersection operational analyses include an estimate of the 95th-percentile queue lengths at the study intersections. The calculated 95th-percentile queue lengths are presented in Table 8. Calculated 95th-percentile queue lengths that exceed the storage capacity or are judged to be excessive are indicated in bold type and are underlined.

Table 8
Intersection Queuing Summary

Intersection Approach	Storage Capacity (feet)	95th-Percentile Queue Length (feet)					
		Existing		Existing Plus Project		Near-Term With Project	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Ave 12 / Rd 36							
Eastbound L	350	60	61	60	61	61	62
Eastbound T	*	283	296	338	359	344	365
Eastbound R	290	0	0	0	0	0	0
Westbound L	190	39	37	41	39	41	39
Westbound T (2)	370 & *	130	111	150	127	152	128
Westbound R	Shared						
Northbound L	180	34	63	34	63	34	64
Northbound T (2)	100 & *	33	59	33	59	34	60
Northbound R	Shared						
Southbound L	305	220	137	259	163	262	165
Southbound T	*	105	42	105	42	106	42
Southbound R	*	9	0	9	0	9	0
Ave 12 / Jason-Fernwood							
Eastbound L**	490	3	5	3	5	3	5
Eastbound TR	*	No stop	No stop	No stop	No stop	No stop	No stop
Westbound L**	350	0	0	18	10	18	10
Westbound TR	*	No stop	No stop	No stop	No stop	No stop	No stop
Northbound LTR	750	3	3	**533**	**413**	**535**	**420**
Southbound LTR	*	18	25	43	40	45	40

L: Left-turn lane T: Through lane R: Right-turn lane
Combinations of letters indicated a shared lane allowing the movements shown.
* Storage capacity exceeds 1,000 feet.
** Two-way left-turn lane extending beyond the noted distance.
Values in parentheses indicated number of lanes if more than one.

12.0 DRIVE-THROUGH QUEUE ANALYSES

In queuing theory, an M/M/1 queue represents the queue length in a system having a single server where arrivals follow a Poisson process and service times are exponentially distributed. The following formulas apply to the M/M/1 queue analyses:

$N = A^2/(S(S-A)) = I^2/(1-I)$

$P(N) = (1-I)I^N$

where:

N = the average number of vehicles in the queue

A = the average number of vehicle arrivals per hour

S = the average service rate in vehicles per hour

I = utilization factor = A/S

P = the probability of the number of vehicles in the queue being N

The trip generation analyses suggest that the Starbucks will generate up to 104 trips during the peak hour, and it is estimated that approximately 45 percent of those will be walk-in customers that park in a parking space. Therefore, it is assumed that the arrivals per hour (A)

using the drive through will be 55 percent of the peak hour vehicles entering, or 58 vehicles per hour.

Based on 57 vehicles per hour using the drive through with an assumed service rate of 70 vehicles per hour, the average queue length in the drive through during the a.m. peak hour is calculated as follows:

$N = A^2/(S(S-A)) = 58^2/(70(70-58)) = 4$ vehicles

The probability of the queue length containing a certain number of vehicles is presented in Table 9.

Table 9
Probability of Queue Length

Number of Vehicles in Queue (N)	Probability of N Vehicles in Queue	Cumulative Probability
0	17.1%	17.1%
1	14.2%	31.3%
2	11.8%	43.1%
3	9.8%	52.9%
4	8.1%	61.0%
5	6.7%	67.6%
6	5.5%	73.1%
7	4.6%	77.8%
8	3.8%	81.6%
9	3.2%	84.8%
10	2.6%	87.3%
11	2.2%	89.6%
12	1.8%	91.3%
13	1.5%	92.8%
14	1.2%	94.0%
15	1.0%	95.0%

These analyses suggest that the 95th-percentile queue in the drive through during the peak hour is approximately 15 vehicles. Stated differently, this statement indicates that there is a 95-percent chance that the queue in the drive through will contain 15 or fewer vehicles at any given time during the a.m. peak hour.

13.0 DISCUSSION

13.1 Existing Conditions

The results of the intersection analyses indicate that the intersection of Avenue 12, Jason Court, and Fernwood Drive is currently operating worse than the target LOS D, operating at LOS E during both the a.m. and p.m. peak hours. Peak-hour traffic signal volume warrants are not satisfied.

The intersection of Avenue 12 and Road 36 is currently operating at acceptable LOS with calculated 95th-percentile queues contained within the available storage capacity.

13.2 Existing-Plus-Project Conditions

The existing-plus-Project conditions analyses represent conditions that would occur after construction of the Project in the absence of other pending projects and regional growth. This scenario isolates the specific effects of the Project. The existing-plus-Project conditions analyses indicate that the intersection of Avenue 12, Jason Court, and Fernwood Drive is expected to operate at LOS F with excessive queuing on the northbound approach during both the a.m. and p.m. peak hours. Peak-hour traffic signal volume warrants are expected to be satisfied. As such, the Project may be required to install traffic signals at the intersection. Based on the anticipated lane configurations, the traffic signals with alignment of Jason Court and Fernwood Drive would include protected left turns on the eastbound and westbound approaches, while the northbound and southbound approaches would have permissive phasing with only one lane on each approach.

The intersection of Avenue 12 and Road 36 is expected to continue to operate at acceptable LOS with calculated 95th-percentile queues contained within the available storage capacity.

13.3 Near-Term With-Project Conditions

The near-term with-Project-conditions analyses are intended to represent the conditions that would occur on opening day of the Project considering other development and regional growth.

The near-term with-Project-conditions analyses indicate that the intersection of Avenue 12, Jason Court, and Fernwood Drive is expected to operate at LOS F with excessive queuing on the northbound approach during both the a.m. and p.m. peak hours. Peak-hour traffic signal volume warrants are expected to be satisfied. As such, the Project may be required to install traffic signals at the intersection. Based on the anticipated lane configurations, the traffic signals with alignment of Jason Court and Fernwood Drive would include protected left turns on the eastbound and westbound approaches, while the northbound and southbound approaches would have permissive phasing with only one lane on each approach.

The intersection of Avenue 12 and Road 36 is expected to continue to operate at acceptable LOS with calculated 95th-percentile queues contained within the available storage capacity.

13.4 Summary of Improved Conditions

The improved conditions (signalization of the intersection of Avenue 12, Jason Court, and Fernwood Drive) are summarized in Tables 10 and 11. The intersection analysis sheets for the improved conditions are presented in Appendix D.

Table 10
Improved Conditions LOS Summary
Intersection of Avenue 12, Jason Court, and Fernwood Drive

Scenario	Control	A.M. Peak Hour		P.M. Peak Hour	
		Delay (sec)	LOS	Delay (sec)	LOS
Existing Plus Project	Traffic signals	26.9	C	14.3	B
Near-Term With Project	Traffic signals	27.6	C	14.4	B

Table 11
Improved Conditions Queuing Summary
Intersection of Avenue 12, Jason Court, and Fernwood Drive

Scenario	Storage Length	95th-Percentile Queue Length (feet)	
Approach	(feet)	A.M.	P.M.
Existing Plus Project			
Eastbound L	To be designed**	29	55
Eastbound TR	*	780	451
Westbound L	To be designed**	170	94
Westbound TR	*	257	403
Northbound LTR	750	179	136
Southbound LTR	*	32	37
Near-Term With Project			
Eastbound L	To be designed*	29	55
Eastbound TR	*	808	460
Westbound L	To be designed*	153	94
Westbound TR	*	260	411
Northbound LTR	750	180	136
Southbound LTR	*	32	37g

L: Left-turn lane T: Through lane R: Right-turn lane
Combinations of letters indicated a shared lane allowing the movements shown.
* Storage capacity exceeds 1,000 feet.
** Storage lengths to be designed based on County standards and shall be long enough to accommodate the calculated queues. Lanes may connect to two-way left-turn lanes.

14.0 CONCLUSIONS AND RECOMMENDATIONS

Generally-accepted traffic engineering principles and methods were employed to estimate the number of trips expected to be generated by the Project, to analyze the existing traffic conditions, and to analyze the traffic conditions projected to occur after occupancy of the Project.

The dominant local-serving retail use of the Project will add retail opportunities into the urban fabric, improve retail destination proximity, shorten trips, and reduce VMT. The coffee shop, gasoline, and convenience market nature of the project is designed specifically for pass-by and local-serving trips, is less than 50,000 square feet in building area, and is not a regional destination. Furthermore, given the nature of the existing development in the Madera Ranchos, it is likely that many medical office trips are currently long trips, and that the additional opportunity of a medical office nearby is likely to reduce VMT rather than increase VMT. Therefore, it is suggested that the lead agency may presume that the project will cause a less-than-significant transportation impact.

The intersection of Avenue 12, Jason Court, and Fernwood Drive is currently operating at LOS E during both the a.m. and p.m. peak hours. Peak-hour traffic signal volume warrants are not satisfied. The intersection of Avenue 12 and Road 36 is currently operating at acceptable LOS with calculated 95th-percentile queues contained within the available storage capacity.

The Project will cause the intersection of Avenue 12, Jason Court, and Fernwood Drive to operate at LOS F with excessive queuing on the northbound approach during both the a.m. and p.m. peak hours. Peak-hour traffic signal volume warrants are expected to be satisfied.

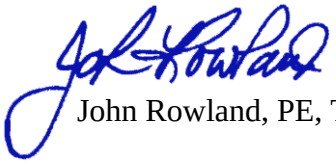
The Project may be required to install traffic signals at the intersection. Based on the anticipated lane configurations, the traffic signals with alignment of Jason Court and Fernwood Drive would include protected left turns on the eastbound and westbound approaches, while the northbound and southbound approaches would have permissive phasing with only one lane on each approach.

The intersection of Avenue 12 and Road 36 is expected to continue to operate at acceptable LOS with calculated 95th-percentile queues contained within the available storage capacity after occupancy of the Project.

The 95th-percentile queue in the Starbucks drive through during the peak hour is estimated to be 15 vehicles. Stated differently, this statement indicates that there is a 95-percent chance that the queue in the drive through will contain 15 or fewer vehicles at any given time during the a.m. peak hour.

Thank you for the opportunity to perform this traffic study. Please feel free to contact our office if you have any questions.

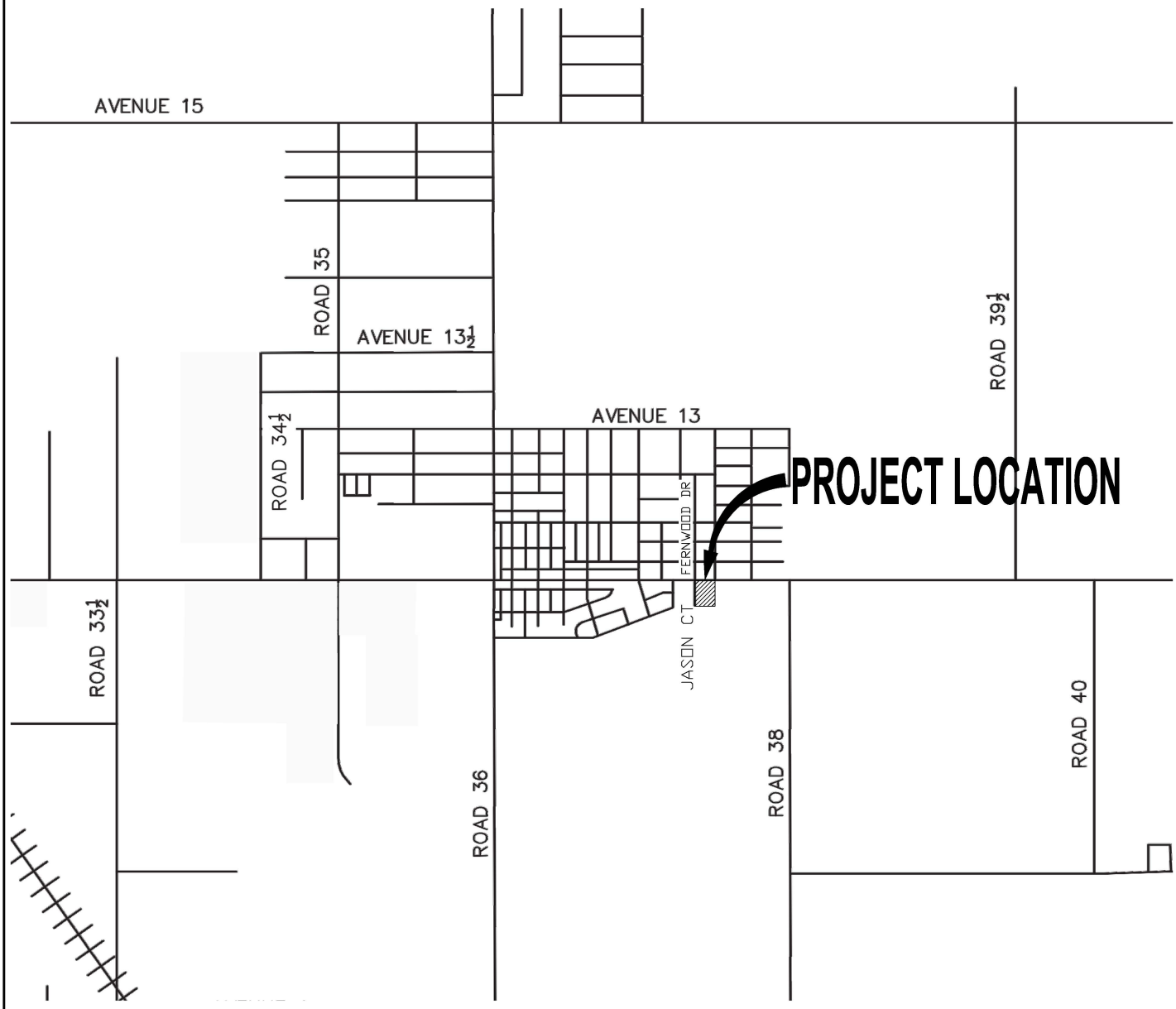
PETERS ENGINEERING GROUP



John Rowland, PE, TE

Attachments: Figures 1 through 9
Appendix A – Traffic Count Data Sheets
Appendix B – Intersection Analyses
Appendix C – Traffic Signal Warrant Analyses
Appendix D – Improved Intersection Analyses

FIGURES



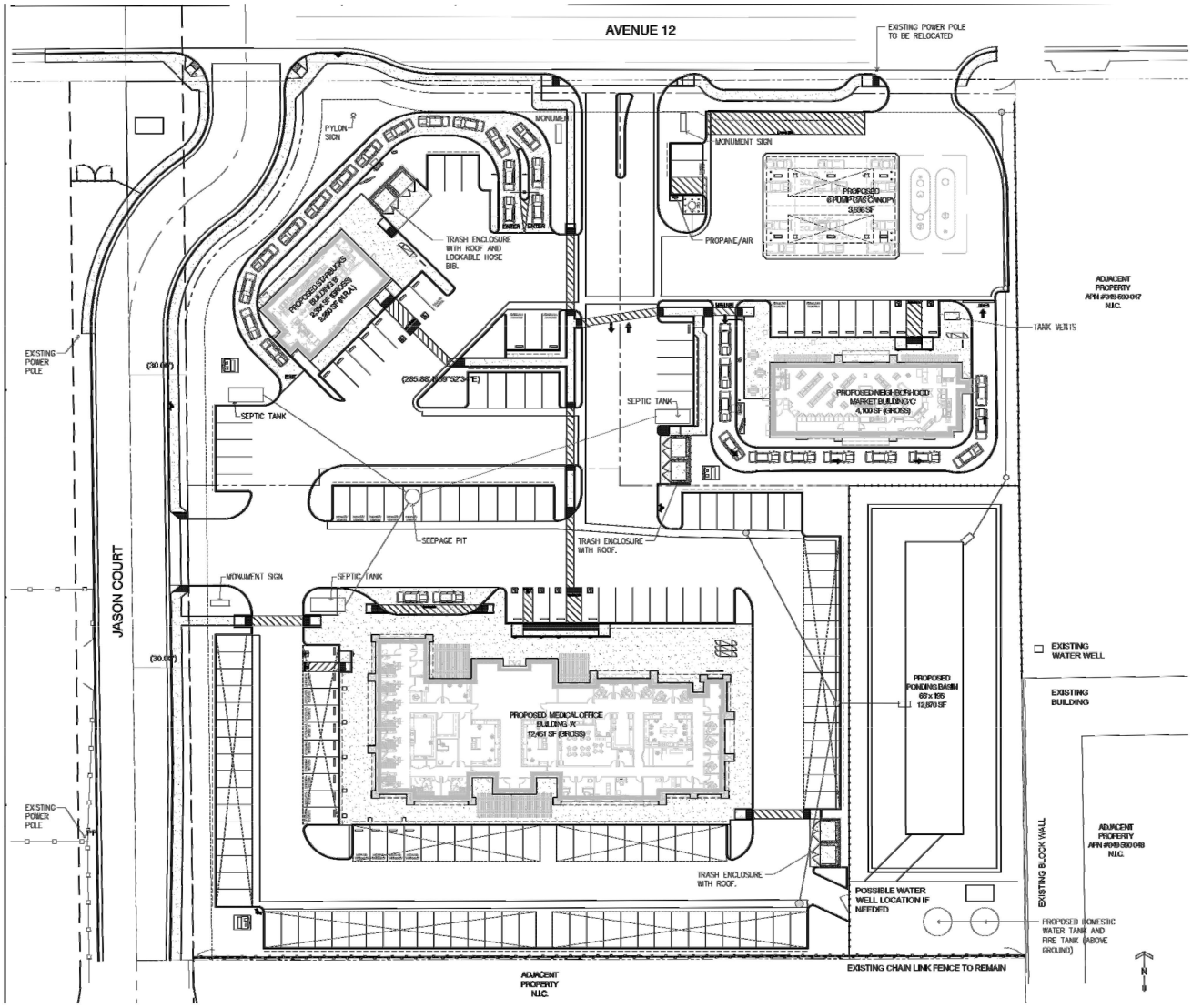
LEGEND

PROJECT LOCATION

Proposed Commercial Development
Madera County, California

VICINITY MAP

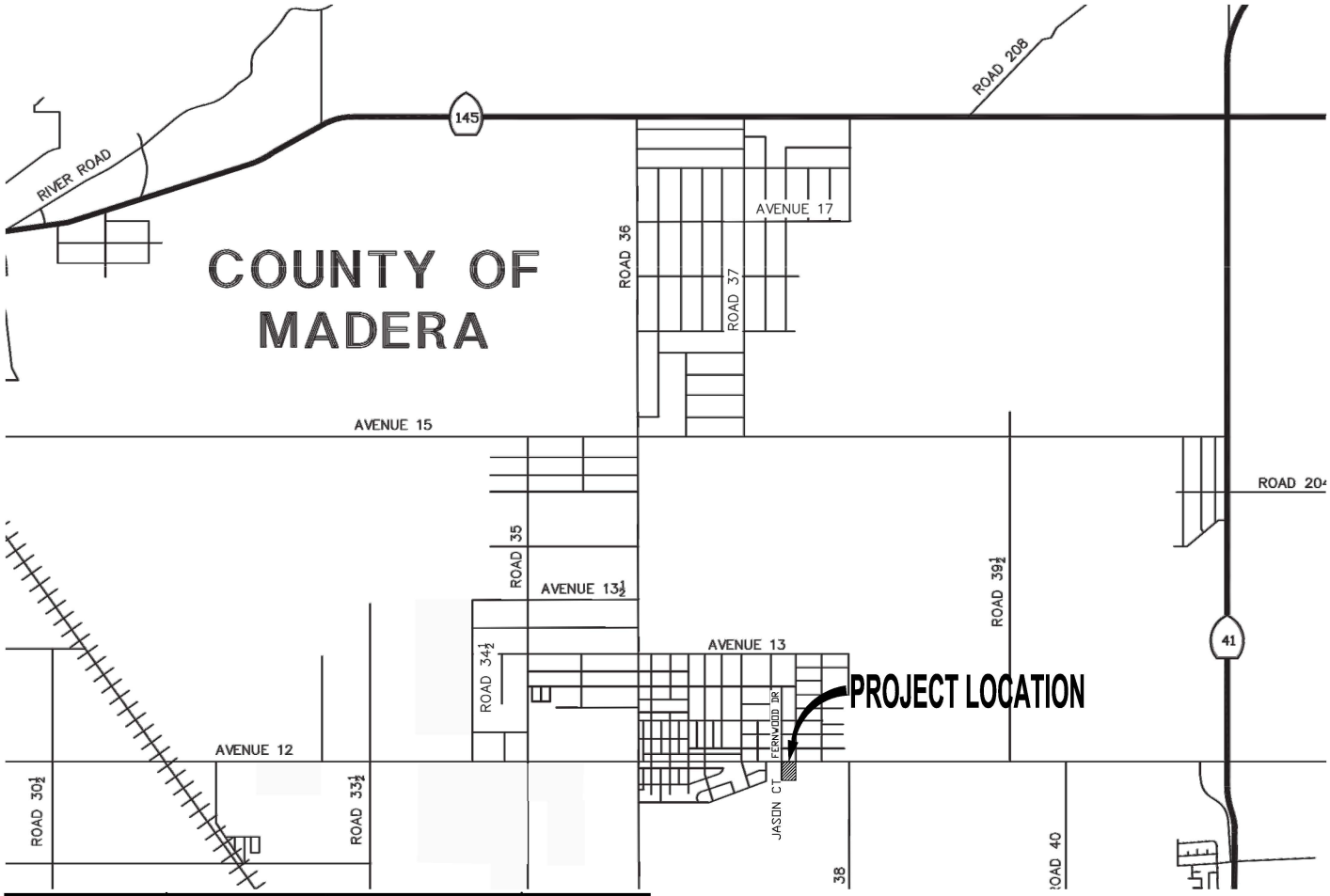
Not to Scale

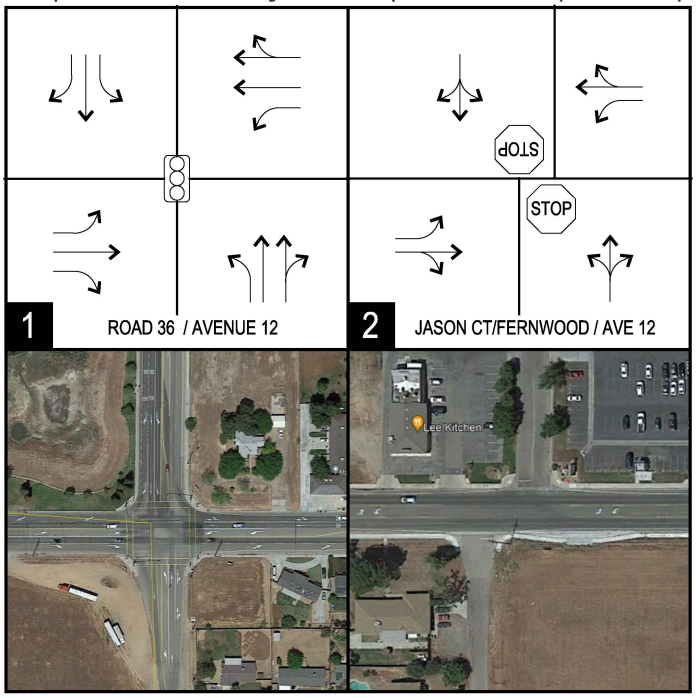


Proposed Commercial Development
Madera County, California

SITE PLAN

Not to Scale





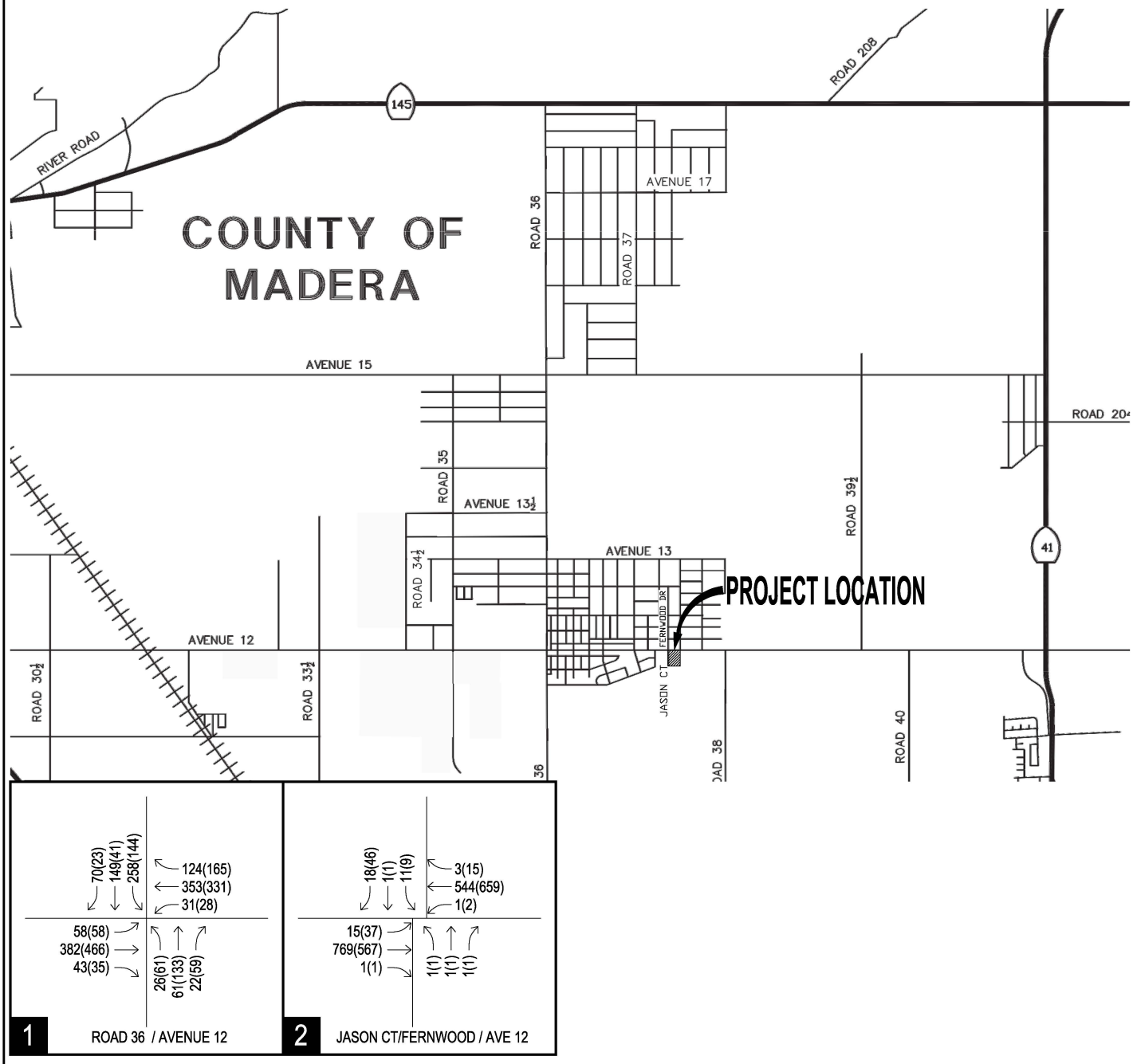
LEGEND

- XX STUDY AREA INTERSECTIONS
- PROJECT SITE
- SIGNALIZED INTERSECTION
- STOP STOP SIGN
- DIRECTION OF TRAVEL

Proposed Commercial Development
Madera County, California

EXISTING LANE CONFIGURATIONS AND INTERSECTION CONTROL

Not to Scale



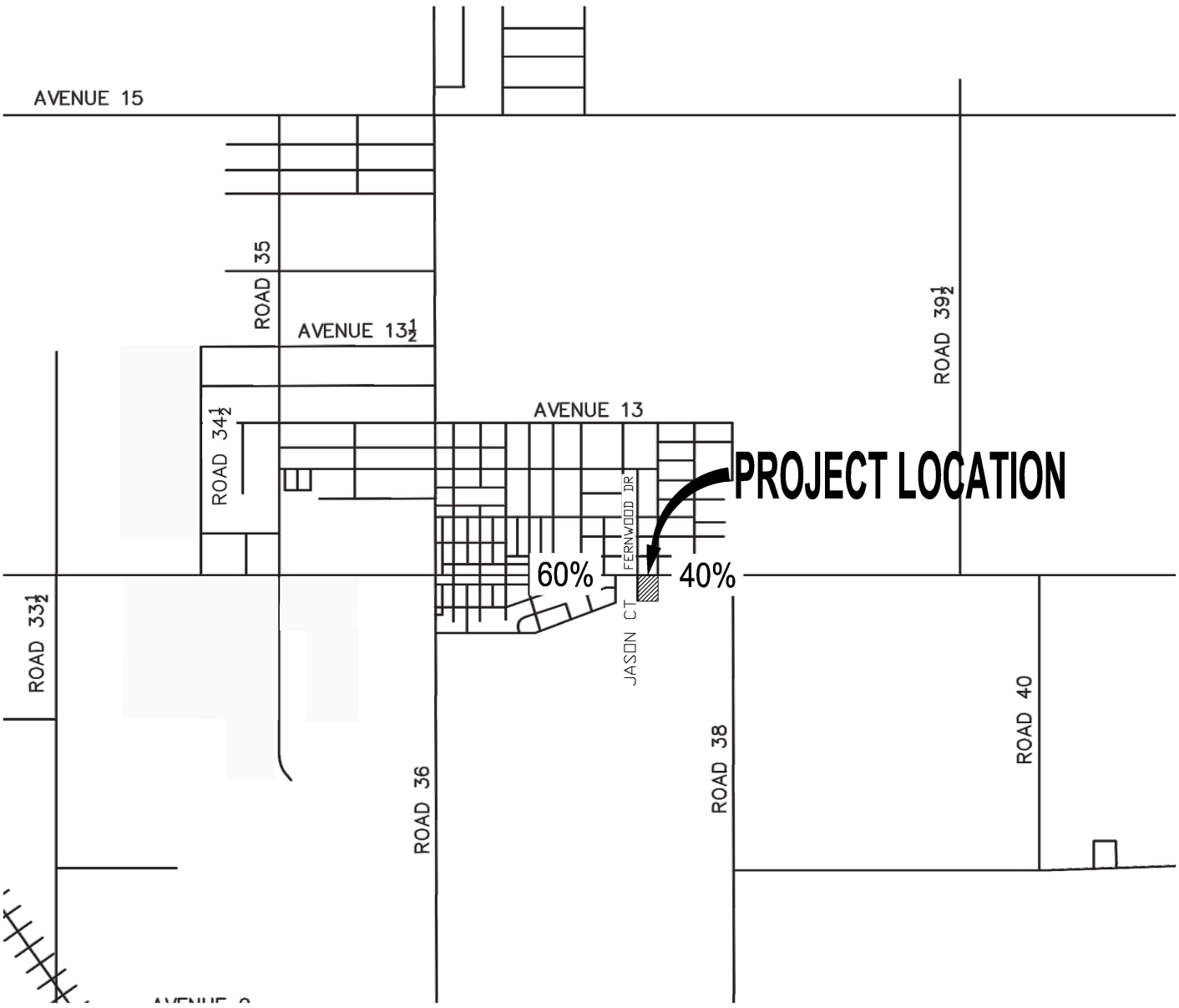
LEGEND

X	STUDY AREA INTERSECTIONS
XX (YY)	AM (PM) PEAK HOUR VOLUMES
	PROJECT SITE

Proposed Commercial Development
Madera County, California

EXISTING PEAK-HOUR TRAFFIC VOLUMES

Not to Scale



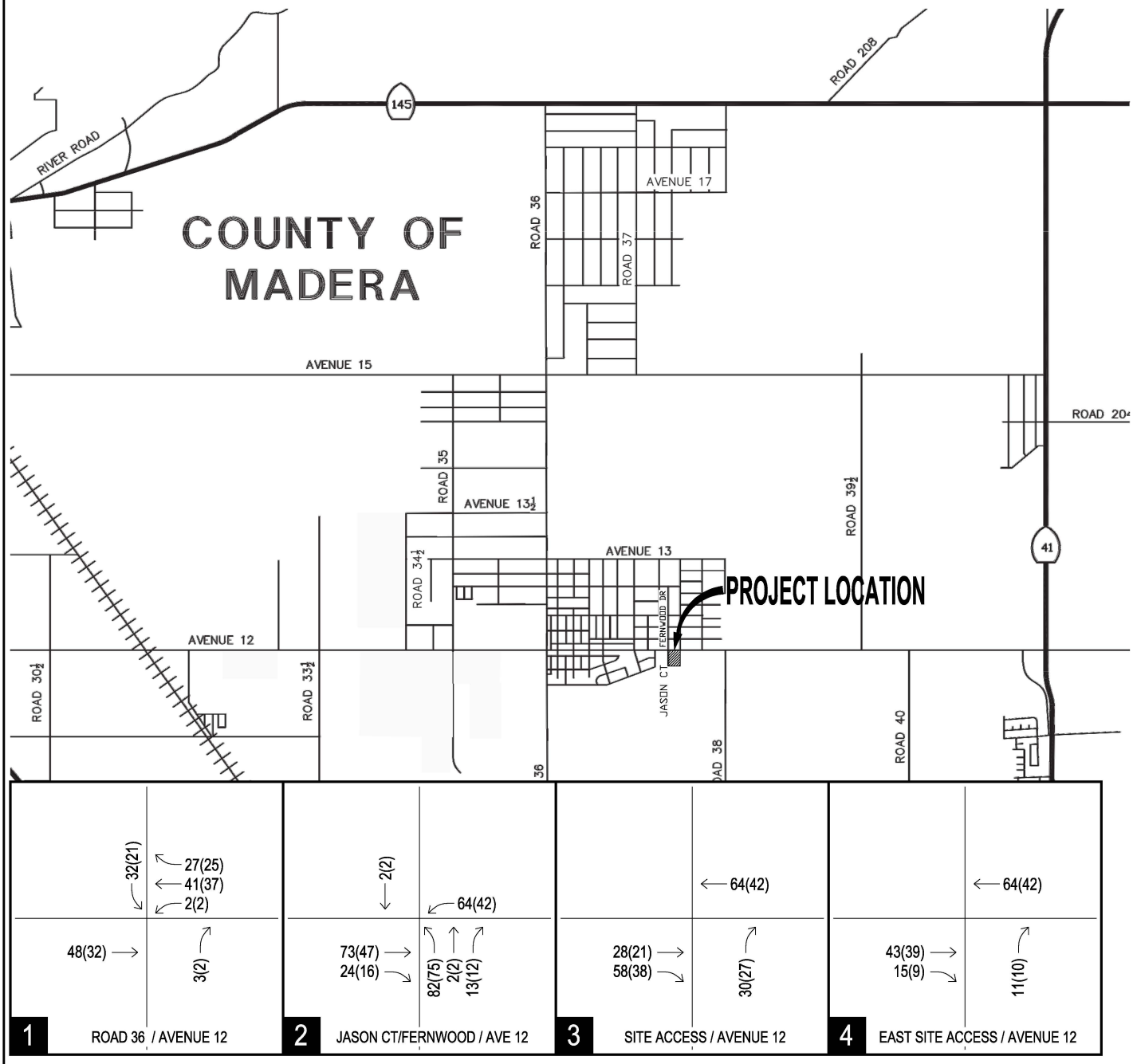
LEGEND

PROJECT LOCATION

Proposed Commercial Development
Madera County, California

PROJECT TRIP DISTRIBUTION PERCENTAGES

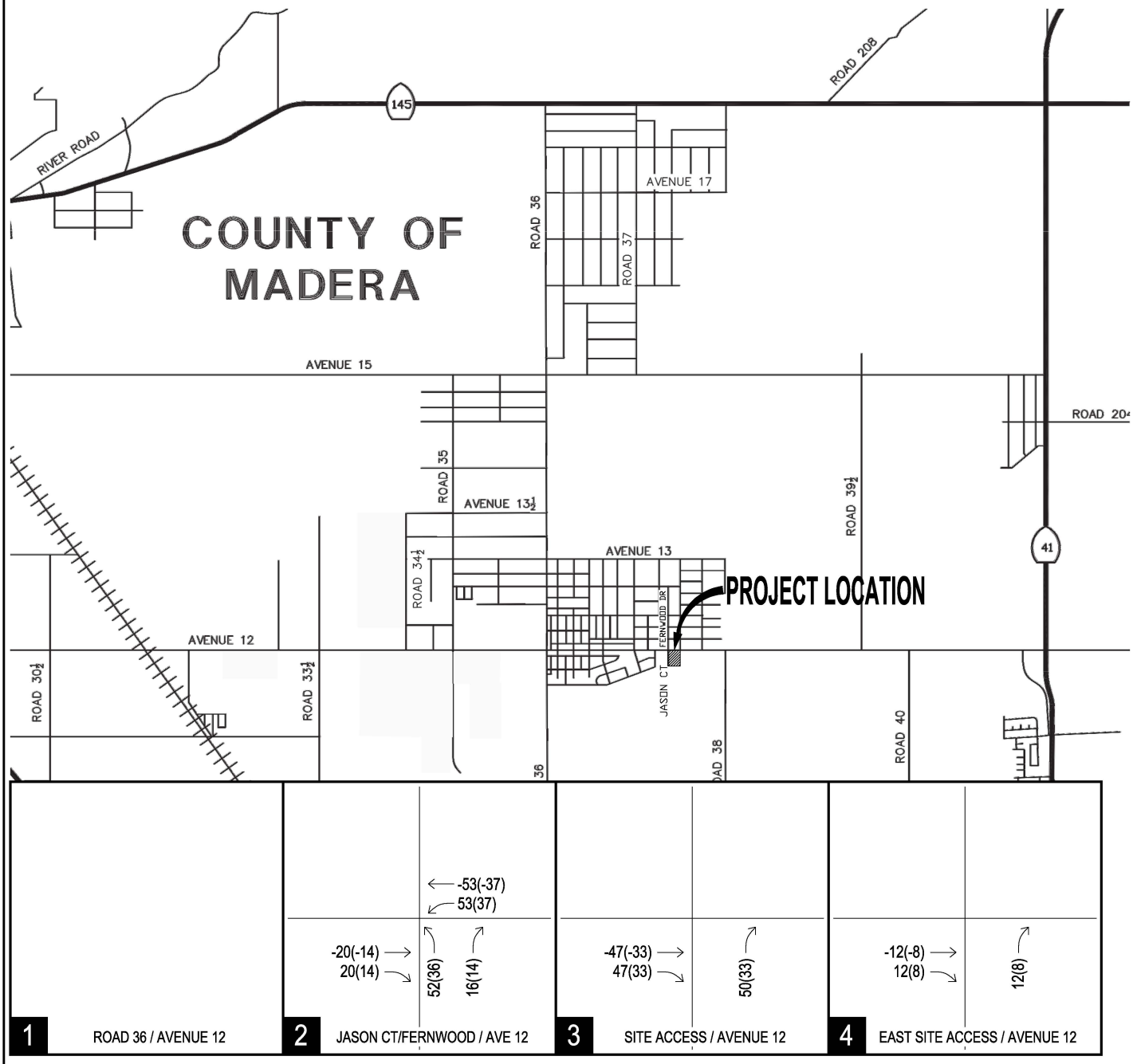
Not to Scale



Proposed Commercial Development
Madera County, California

PROJECT PRIMARY PEAK-HOUR TRAFFIC VOLUMES

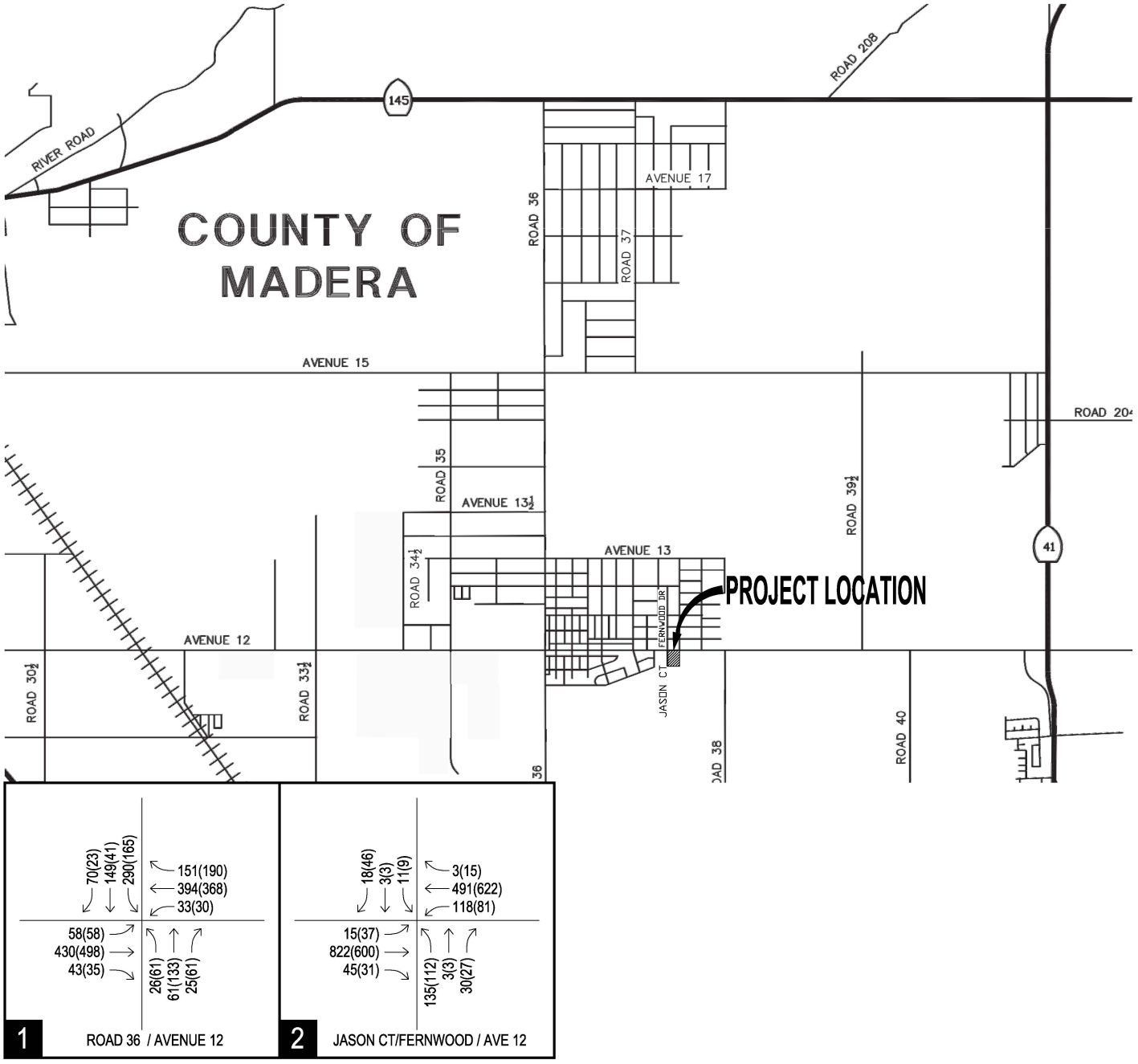
Not to Scale



Proposed Commercial Development
Madera County, California

PROJECT PEAK-HOUR PASS-BY/DIVERTED LINK TRIPS

Not to Scale



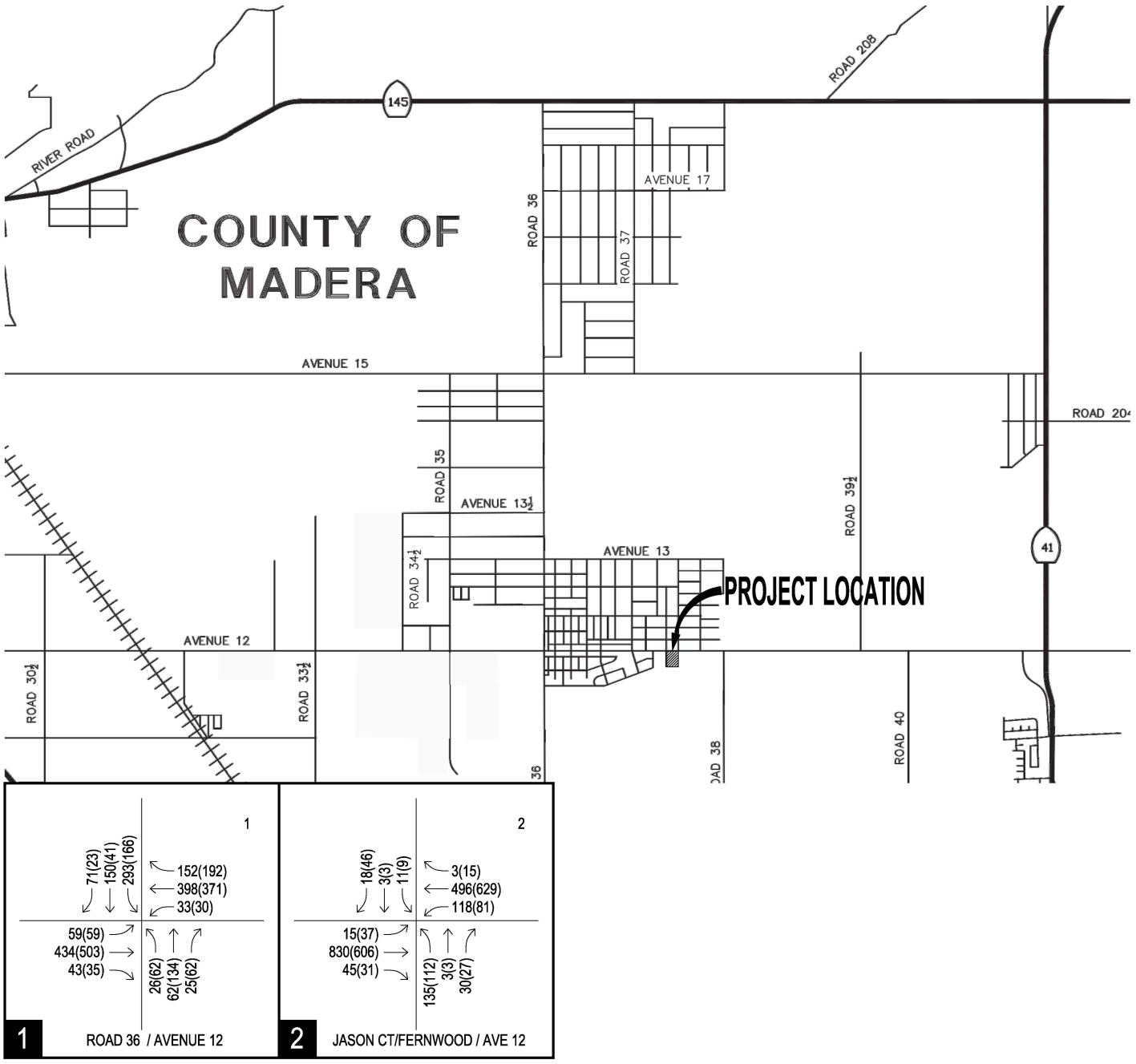
LEGEND

X	STUDY AREA INTERSECTIONS
XX (YY)	AM (PM) PEAK HOUR VOLUMES
	PROJECT SITE

Proposed Commercial Development
Madera County, California

EXISTING-PLUS-PROJECT PEAK-HOUR TRAFFIC VOLUMES

Not to Scale



LEGEND

X	STUDY AREA INTERSECTIONS
XX (YY)	AM (PM) PEAK HOUR VOLUMES
	PROJECT SITE

Proposed Commercial Development
Madera County, California

NEAR-TERM WITH-PROJECT PEAK-HOUR TRAFFIC VOLUMES

Not to Scale

APPENDIX A

TRAFFIC COUNT DATA SHEETS

PETERS ENGINEERING GROUP
A CALIFORNIA CORPORATION

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

Peters Engineering Group
862 Pollasky Avenue
Clovis, CA 93612

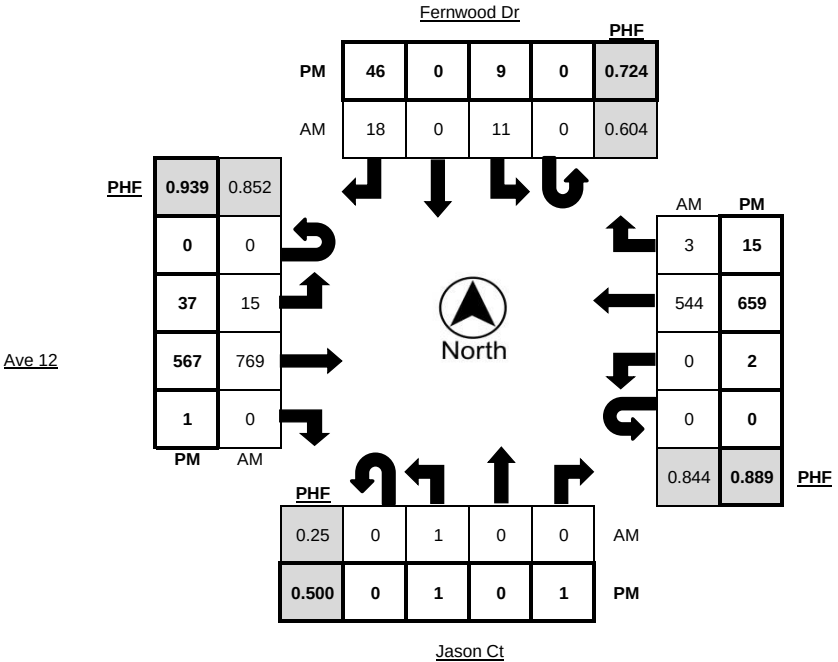
LOCATION Ave 12 @ Fernwood Dr / Jason Ct
LATITUDE 36.9231
COUNTY Madera
LONGITUDE -119.8694
COLLECTION DATE Thursday, May 18, 2023
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	0	0	1	1	0	0	2	0	4	0	0	1	126	0	6	0	0	82	2	3
7:15 AM - 7:30 AM	0	0	0	0	0	0	5	0	7	0	0	2	140	0	6	0	0	138	1	3
7:30 AM - 7:45 AM	0	1	0	0	0	0	3	0	4	1	0	5	225	0	6	0	0	152	1	3
7:45 AM - 8:00 AM	0	0	0	0	0	0	2	0	2	0	0	5	186	0	6	0	0	161	1	4
8:00 AM - 8:15 AM	0	0	0	0	0	0	1	0	5	1	0	3	218	0	3	0	0	93	0	2
8:15 AM - 8:30 AM	0	0	0	0	0	0	2	0	10	0	0	2	160	1	5	0	1	85	0	3
8:30 AM - 8:45 AM	0	0	0	2	0	0	1	0	10	0	0	5	162	0	3	0	1	76	1	3
8:45 AM - 9:00 AM	0	1	0	0	0	0	5	0	7	0	0	6	131	0	3	0	1	84	4	2
TOTAL	**0**	**2**	**1**	**3**	**0**	**0**	**21**	**0**	**49**	**2**	**0**	**29**	**1348**	**1**	**38**	**0**	**3**	**871**	**10**	**23**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	0	0	0	0	0	2	0	15	0	0	11	136	0	3	0	0	161	1	2
4:15 PM - 4:30 PM	0	0	0	0	0	0	2	0	16	1	0	7	157	0	1	0	1	151	3	2
4:30 PM - 4:45 PM	0	0	0	0	0	0	3	0	8	0	0	3	131	1	2	0	0	152	1	2
4:45 PM - 5:00 PM	0	0	0	0	0	0	2	0	8	0	0	10	142	1	1	0	1	146	4	0
5:00 PM - 5:15 PM	0	1	0	0	0	0	1	0	12	0	0	16	145	0	2	0	0	167	3	2
5:15 PM - 5:30 PM	0	0	0	1	0	0	1	0	18	1	0	4	157	0	4	0	1	161	3	2
5:30 PM - 5:45 PM	0	0	0	0	0	0	5	0	8	0	0	7	123	0	1	0	0	185	5	0
5:45 PM - 6:00 PM	0	1	0	0	0	0	0	0	13	0	0	8	110	1	1	0	1	158	5	2
TOTAL	**0**	**2**	**0**	**1**	**0**	**0**	**16**	**0**	**98**	**2**	**0**	**66**	**1101**	**3**	**15**	**0**	**4**	**1281**	**25**	**12**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:15 AM - 8:15 AM	0	1	0	0	0	0	11	0	18	2	0	15	769	0	21	0	0	544	3	12
4:45 PM - 5:45 PM	0	1	0	1	0	0	9	0	46	1	0	37	567	1	8	0	2	659	15	4

	PHF	Trucks
AM	0.870	2.6%
PM	0.967	1.0%



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

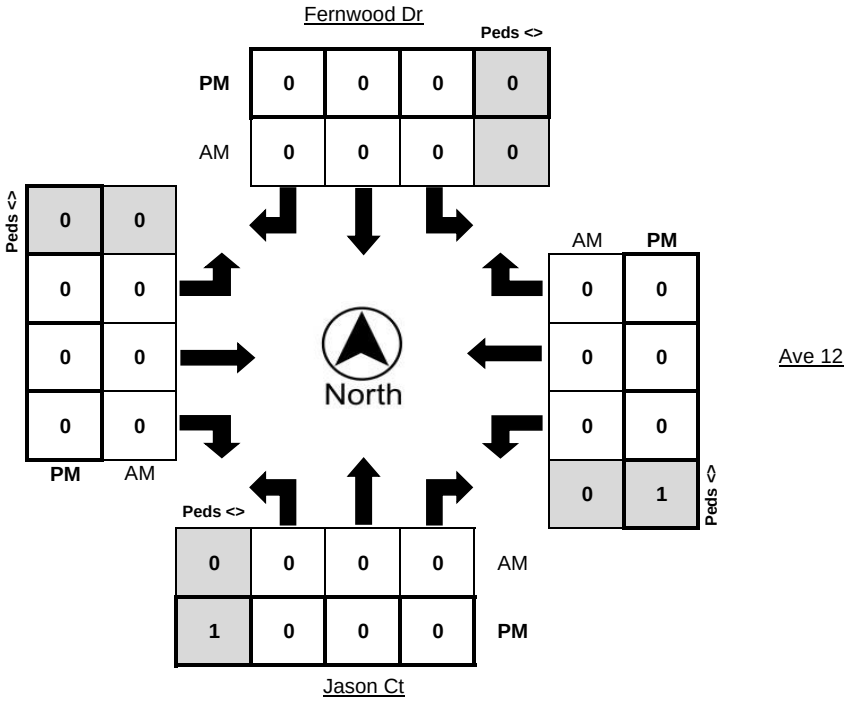
LOCATION Ave 12 @ Fernwood Dr / Jason Ct
LATITUDE 36.9231
COUNTY Madera
LONGITUDE -119.8694
COLLECTION DATE Thursday, May 18, 2023
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
7:15 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0

	Bikes	Peds
AM Peak Total	0	0
PM Peak Total	**0**	**2**



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

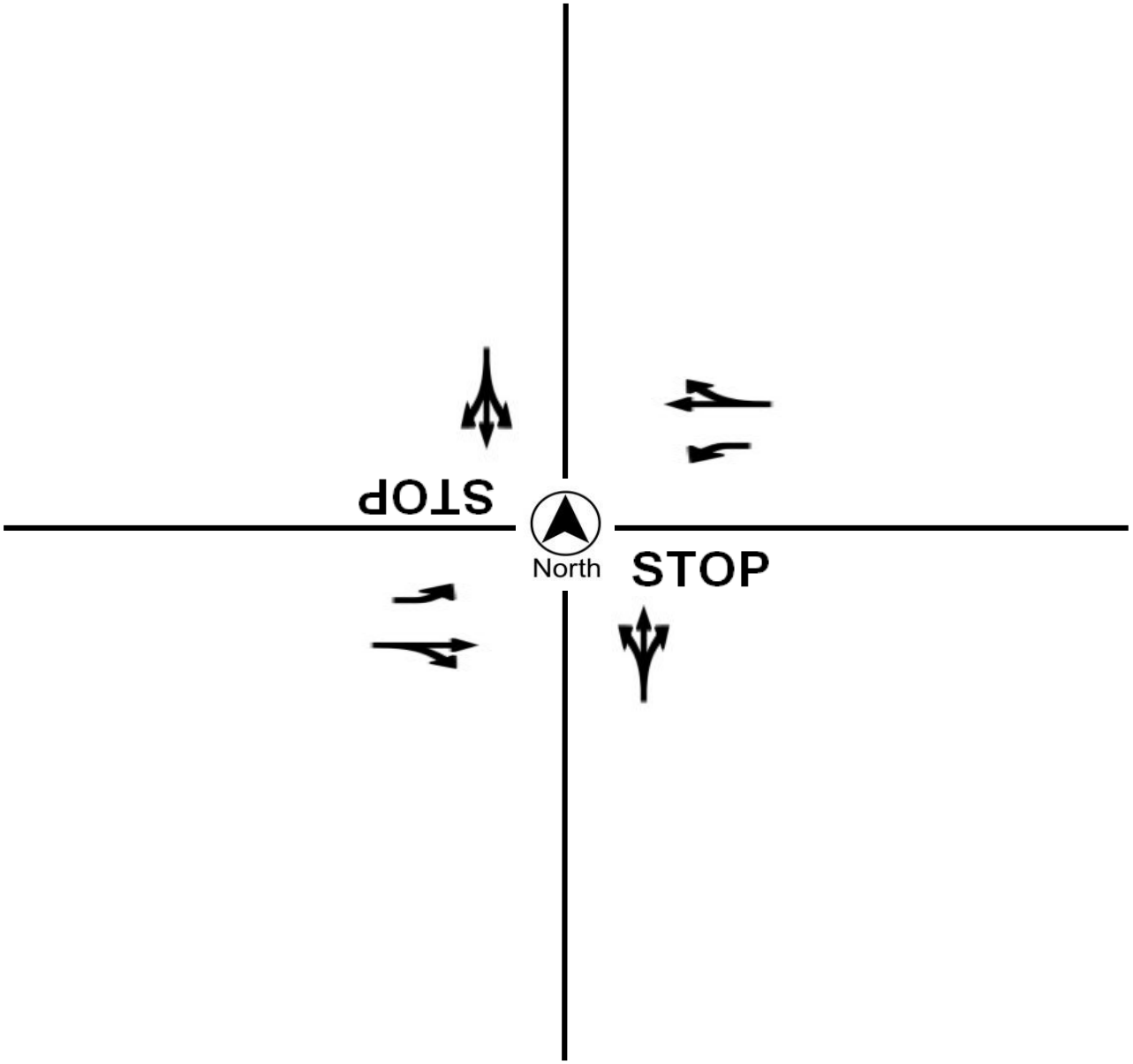
Turning Movement Report

Prepared For:

Peters Engineering Group
862 Pollasky Avenue
Clovis, CA 93612

LOCATION	Ave 12 @ Fernwood Dr / Jason Ct	**N/S STREET**	Fernwood Dr
COUNTY	Madera	**E/W STREET**	Ave 12
COLLECTION DATE	Thursday, May 18, 2023	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	Two-Way Stop

COMMENTS



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www.metrotrafficdata.com

Turning Movement Report

Prepared For:
Peters Engineering Group
862 Pollasky Ave
Clovis, CA 93612

LOCATION Ave 12 @ Rd 36 **LATITUDE** 36.9230

COUNTY Madera **LONGITUDE** -119.8943

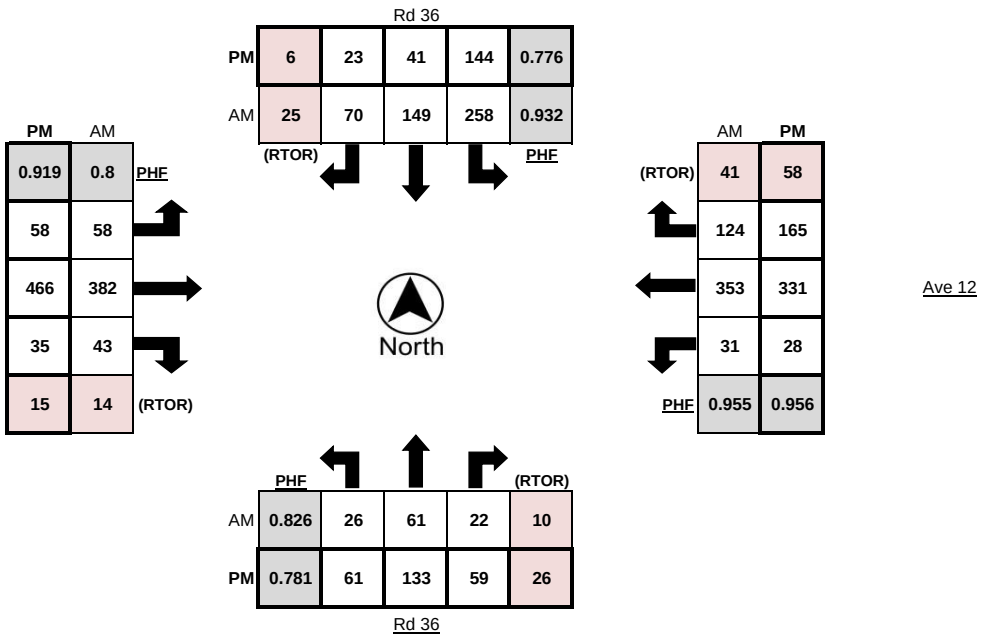
COLLECTION DATE Thursday, May 18, 2023 **WEATHER** Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**Left**	**Thru**	**Right**	**(RTOR)**	**Trucks**	**Left**	**Thru**	**Right**	**(RTOR)**	**Trucks**	**Left**	**Thru**	**Right**	**(RTOR)**	**Trucks**	**Left**	**Thru**	**Right**	**(RTOR)**	**Trucks**
7:00 AM - 7:15 AM	2	3	2	1	1	36	22	8	4	1	4	56	2	1	3	10	53	15	6	2
7:15 AM - 7:30 AM	4	11	6	4	1	52	35	19	12	3	9	81	5	4	3	11	100	21	6	5
7:30 AM - 7:45 AM	6	22	5	2	4	66	41	10	3	2	19	99	12	2	7	4	94	30	11	2
7:45 AM - 8:00 AM	9	19	5	1	1	67	36	23	8	4	19	117	15	4	4	14	81	38	9	2
8:00 AM - 8:15 AM	7	9	6	3	1	73	37	18	2	4	11	85	11	4	4	2	78	35	15	6
8:15 AM - 8:30 AM	4	15	4	2	0	49	25	9	0	2	4	88	6	1	4	2	54	44	15	2
8:30 AM - 8:45 AM	2	18	5	4	2	95	18	23	6	0	15	89	5	2	4	6	79	84	37	2
8:45 AM - 9:00 AM	7	14	5	2	2	77	22	8	3	1	5	72	9	4	3	7	45	43	25	3
TOTAL	**41**	**111**	**38**	**19**	**12**	**515**	**236**	**118**	**38**	**17**	**86**	**687**	**65**	**22**	**32**	**56**	**584**	**310**	**124**	**24**

	Northbound					Southbound					Eastbound					Westbound				
Time	**Left**	**Thru**	**Right**	**(RTOR)**	**Trucks**	**Left**	**Thru**	**Right**	**(RTOR)**	**Trucks**	**Left**	**Thru**	**Right**	**(RTOR)**	**Trucks**	**Left**	**Thru**	**Right**	**(RTOR)**	**Trucks**
4:00 PM - 4:15 PM	4	25	9	7	0	31	9	6	0	1	7	142	5	3	3	3	78	43	11	3
4:15 PM - 4:30 PM	11	23	8	7	1	29	11	4	1	1	14	123	9	3	0	4	84	45	11	5
4:30 PM - 4:45 PM	11	16	12	4	2	34	9	3	3	1	11	136	10	4	2	6	82	49	13	2
4:45 PM - 5:00 PM	8	34	16	7	1	32	11	5	1	1	11	113	9	3	0	2	87	35	11	1
5:00 PM - 5:15 PM	14	27	23	9	0	25	8	3	2	0	8	109	9	3	2	14	85	38	8	2
5:15 PM - 5:30 PM	24	43	14	8	1	38	11	8	1	0	22	117	13	6	1	4	70	56	22	1
5:30 PM - 5:45 PM	15	29	6	2	1	49	11	7	2	0	17	127	4	3	0	8	89	36	17	0
5:45 PM - 6:00 PM	10	27	4	0	0	35	8	2	1	0	11	80	2	1	2	0	83	32	21	2
TOTAL	**97**	**224**	**92**	**44**	**6**	**273**	**78**	**38**	**11**	**4**	**101**	**947**	**61**	**26**	**10**	**41**	**658**	**334**	**114**	**16**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**Left**	**Thru**	**Right**	**(RTOR)**	**Trucks**	**Left**	**Thru**	**Right**	**(RTOR)**	**Trucks**	**Left**	**Thru**	**Right**	**(RTOR)**	**Trucks**	**Left**	**Thru**	**Right**	**(RTOR)**	**Trucks**
7:15 AM - 8:15 AM	26	61	22	10	7	258	149	70	25	13	58	382	43	14	18	31	353	124	41	15
4:45 PM - 5:45 PM	61	133	59	26	3	144	41	23	6	1	58	466	35	15	3	28	331	165	58	4

	PHF	Trucks
AM	0.890	3.4%
PM	0.919	0.7%



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Turning Movement Report

Prepared For:

Peters Engineering Group
862 Pollasky Ave
Clovis, CA 93612

LOCATION Ave 12 @ Rd 36 **LATITUDE** 36.9230

COUNTY Madera **LONGITUDE** -119.8943

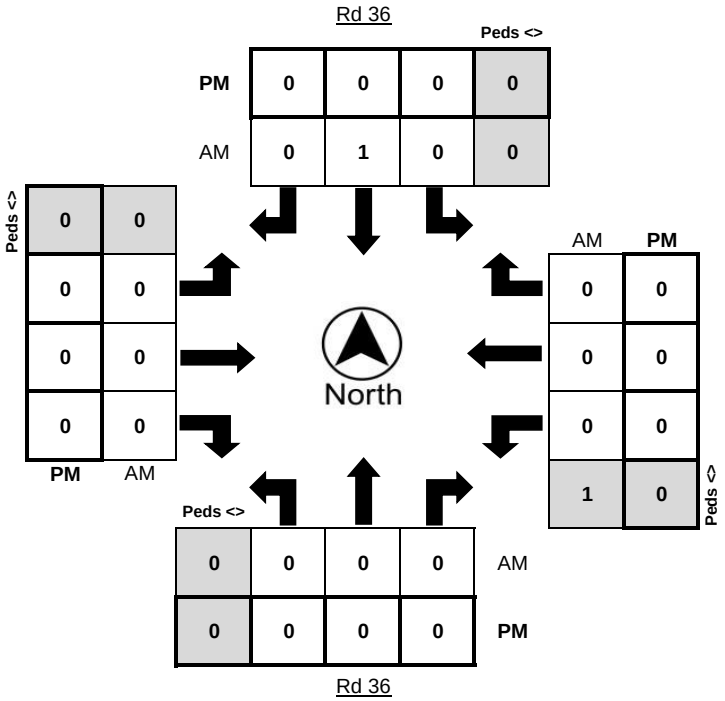
COLLECTION DATE Thursday, May 18, 2023 **WEATHER** Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
7:15 AM - 8:15 AM	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
4:45 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	1	1
PM Peak Total	**0**	**0**



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

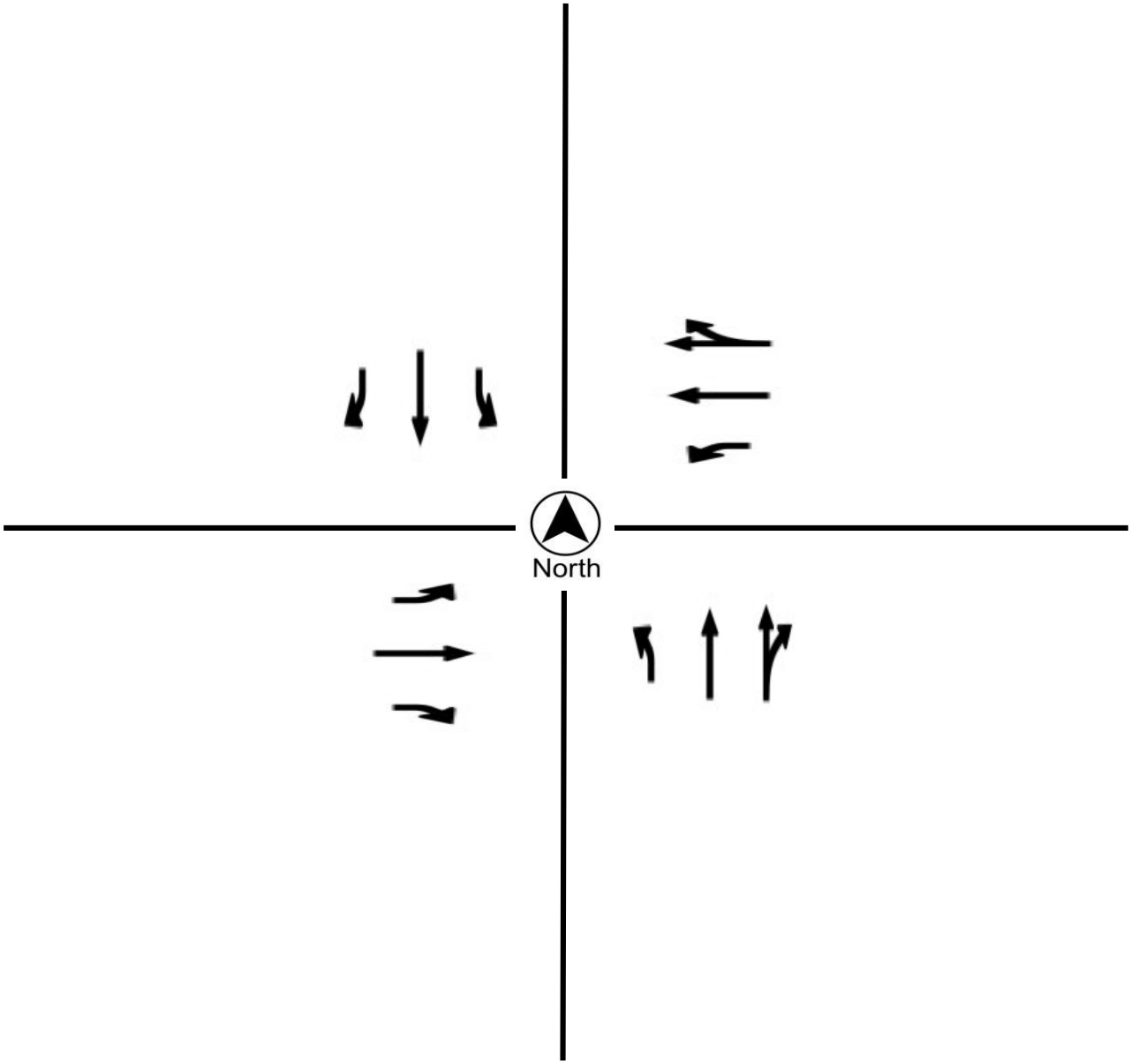
Turning Movement Report

Prepared For:

Peters Engineering Group
862 Pollasky Ave
Clovis, CA 93612

LOCATION	Ave 12 @ Rd 36	**N/S STREET**	Rd 36
COUNTY	Madera	**E/W STREET**	Ave 12
COLLECTION DATE	Thursday, May 18, 2023	**WEATHER**	Clear
CYCLE TIME	79 Seconds	**CONTROL TYPE**	Signal

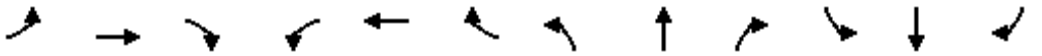
COMMENTS All approaches have protected left turns.



APPENDIX B

INTERSECTION ANALYSES

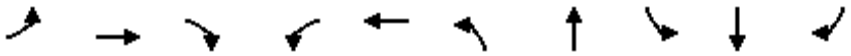
PETERS ENGINEERING GROUP
A CALIFORNIA CORPORATION



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	382	43	31	353	124	26	61	22	258	149	70
Future Volume (veh/h)	58	382	43	31	353	124	26	61	22	258	149	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.93	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	65	429	32	35	397	93	29	69	17	290	167	51
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	103	538	436	67	761	176	58	364	85	353	551	455
Arrive On Green	0.06	0.29	0.29	0.04	0.27	0.27	0.03	0.13	0.13	0.20	0.30	0.30
Sat Flow, veh/h	1767	1856	1505	1767	2825	654	1767	2789	653	1767	1856	1532
Grp Volume(v), veh/h	65	429	32	35	246	244	29	42	44	290	167	51
Grp Sat Flow(s),veh/h/ln	1767	1856	1505	1767	1763	1716	1767	1763	1679	1767	1856	1532
Q Serve(g_s), s	1.9	11.1	0.8	1.0	6.2	6.3	0.8	1.1	1.2	8.2	3.6	1.3
Cycle Q Clear(g_c), s	1.9	11.1	0.8	1.0	6.2	6.3	0.8	1.1	1.2	8.2	3.6	1.3
Prop In Lane	1.00		1.00	1.00		0.38	1.00		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	103	538	436	67	475	462	58	230	219	353	551	455
V/C Ratio(X)	0.63	0.80	0.07	0.52	0.52	0.53	0.50	0.18	0.20	0.82	0.30	0.11
Avail Cap(c_a), veh/h	245	753	610	200	671	653	200	651	620	510	1009	834
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	17.1	13.4	24.6	16.1	16.2	24.7	20.2	20.2	19.9	14.1	13.3
Incr Delay (d2), s/veh	6.1	4.1	0.1	6.1	0.9	0.9	6.5	0.4	0.4	7.0	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.2	0.2	0.5	2.2	2.2	0.4	0.4	0.4	3.5	1.3	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	21.2	13.5	30.6	17.0	17.1	31.2	20.5	20.6	27.0	14.4	13.4
LnGrp LOS	C	C	B	C	B	B	C	C	C	C	B	B
Approach Vol, veh/h		526			525			115			508	
Approach Delay, s/veh		21.8			18.0			23.3			21.5	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.4	11.7	6.0	20.0	5.7	20.4	7.0	18.9
Change Period (Y+Rc), s	4.0	4.9	4.0	4.9	4.0	4.9	4.0	4.9
Max Green Setting (Gmax), s	15.0	19.2	5.9	21.1	5.9	28.3	7.2	19.8
Max Q Clear Time (g_c+I1), s	10.2	3.2	3.0	13.1	2.8	5.6	3.9	8.3
Green Ext Time (p_c), s	0.4	0.3	0.0	1.5	0.0	0.9	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	20.6
HCM 6th LOS	C



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	65	429	48	35	536	29	94	290	167	79
v/c Ratio	0.32	0.70	0.08	0.20	0.53	0.16	0.23	0.68	0.24	0.12
Control Delay	31.5	25.8	0.2	30.9	18.7	30.4	21.9	32.3	18.2	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	25.8	0.2	30.9	18.7	30.4	21.9	32.3	18.2	1.6
Queue Length 50th (ft)	23	115	0	12	83	10	12	98	38	0
Queue Length 95th (ft)	60	#283	0	39	130	34	33	#220	105	9
Internal Link Dist (ft)		1534			1683		1265		1044	
Turn Bay Length (ft)	350		290	190		180		305		
Base Capacity (vph)	223	717	697	182	1208	182	1144	464	923	831
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.60	0.07	0.19	0.44	0.16	0.08	0.63	0.18	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

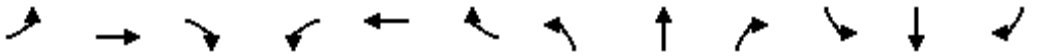
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	769	1	1	544	3	1	1	1	11	1	18
Future Vol, veh/h	15	769	1	1	544	3	1	1	1	11	1	18
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	490	-	-	350	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	17	884	1	1	625	3	1	1	1	13	1	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	633	0	0	890	0	0	1569	1559	895	1559	1558	637
Stage 1	-	-	-	-	-	-	924	924	-	634	634	-
Stage 2	-	-	-	-	-	-	645	635	-	925	924	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	945	-	-	757	-	-	89	112	338	91	112	475
Stage 1	-	-	-	-	-	-	322	347	-	466	471	-
Stage 2	-	-	-	-	-	-	459	471	-	321	347	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	941	-	-	753	-	-	82	109	335	88	109	470
Mov Cap-2 Maneuver	-	-	-	-	-	-	82	109	-	88	109	-
Stage 1	-	-	-	-	-	-	315	339	-	455	468	-
Stage 2	-	-	-	-	-	-	435	468	-	312	339	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	35.1	30.7
HCM LOS			E	D

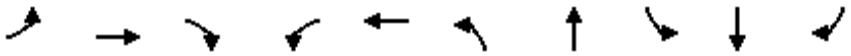
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	123	941	-	-	753	-	-	174
HCM Lane V/C Ratio	0.028	0.018	-	-	0.002	-	-	0.198
HCM Control Delay (s)	35.1	8.9	-	-	9.8	-	-	30.7
HCM Lane LOS	E	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.7



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	466	35	28	331	165	61	133	59	144	41	23
Future Volume (veh/h)	58	466	35	28	331	165	61	133	59	144	41	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.93	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	63	507	22	30	360	116	66	145	36	157	45	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	107	639	520	62	835	265	110	394	94	204	362	297
Arrive On Green	0.06	0.34	0.34	0.03	0.31	0.31	0.06	0.14	0.14	0.11	0.19	0.19
Sat Flow, veh/h	1795	1885	1534	1795	2657	842	1795	2824	673	1795	1885	1545
Grp Volume(v), veh/h	63	507	22	30	241	235	66	90	91	157	45	18
Grp Sat Flow(s),veh/h/ln	1795	1885	1534	1795	1791	1708	1795	1791	1706	1795	1885	1545
Q Serve(g_s), s	1.6	11.6	0.5	0.8	5.1	5.2	1.7	2.2	2.3	4.0	0.9	0.5
Cycle Q Clear(g_c), s	1.6	11.6	0.5	0.8	5.1	5.2	1.7	2.2	2.3	4.0	0.9	0.5
Prop In Lane	1.00		1.00	1.00		0.49	1.00		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	107	639	520	62	563	537	110	250	238	204	362	297
V/C Ratio(X)	0.59	0.79	0.04	0.49	0.43	0.44	0.60	0.36	0.38	0.77	0.12	0.06
Avail Cap(c_a), veh/h	264	1032	840	222	939	896	267	721	687	377	874	716
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.9	14.2	10.6	22.6	13.0	13.0	21.8	18.6	18.6	20.5	15.9	15.7
Incr Delay (d2), s/veh	5.1	2.3	0.0	5.8	0.5	0.6	5.2	0.9	1.0	6.1	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.9	0.1	0.4	1.7	1.7	0.8	0.8	0.8	1.8	0.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.0	16.5	10.6	28.4	13.5	13.6	27.0	19.4	19.6	26.6	16.1	15.8
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		592			506			247			220	
Approach Delay, s/veh		17.4			14.4			21.5			23.6	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	11.6	5.6	21.1	6.9	14.1	6.8	19.9
Change Period (Y+Rc), s	4.0	4.9	4.0	4.9	4.0	4.9	4.0	4.9
Max Green Setting (Gmax), s	10.0	19.2	5.9	26.1	7.1	22.1	7.0	25.0
Max Q Clear Time (g_c+I1), s	6.0	4.3	2.8	13.6	3.7	2.9	3.6	7.2
Green Ext Time (p_c), s	0.1	0.7	0.0	2.3	0.0	0.2	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	63	507	38	30	539	66	209	157	45	25
v/c Ratio	0.29	0.73	0.06	0.16	0.46	0.30	0.38	0.52	0.08	0.05
Control Delay	31.1	23.6	0.2	30.5	14.0	31.2	19.8	32.9	22.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.1	23.6	0.2	30.5	14.0	31.2	19.8	32.9	22.5	0.2
Queue Length 50th (ft)	20	124	0	9	65	20	23	48	13	0
Queue Length 95th (ft)	61	#296	0	37	111	63	59	#137	42	0
Internal Link Dist (ft)		1534			1683		1265		1044	
Turn Bay Length (ft)	350		290	190		180		305		
Base Capacity (vph)	234	920	816	197	1637	238	1250	335	779	724
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.55	0.05	0.15	0.33	0.28	0.17	0.47	0.06	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

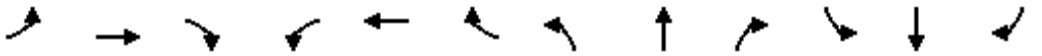
Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	567	1	2	659	15	1	1	1	9	1	46
Future Vol, veh/h	37	567	1	2	659	15	1	1	1	9	1	46
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	490	-	-	350	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	43	652	1	2	757	17	1	1	1	10	1	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	779	0	0	658	0	0	1546	1527	663	1520	1519	776
Stage 1	-	-	-	-	-	-	744	744	-	775	775	-
Stage 2	-	-	-	-	-	-	802	783	-	745	744	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	834	-	-	925	-	-	93	117	459	97	118	396
Stage 1	-	-	-	-	-	-	405	420	-	389	406	-
Stage 2	-	-	-	-	-	-	376	403	-	404	420	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	830	-	-	921	-	-	76	110	455	91	111	392
Mov Cap-2 Maneuver	-	-	-	-	-	-	76	110	-	91	111	-
Stage 1	-	-	-	-	-	-	382	396	-	367	403	-
Stage 2	-	-	-	-	-	-	322	400	-	379	396	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	35.1	24.4
HCM LOS			E	C

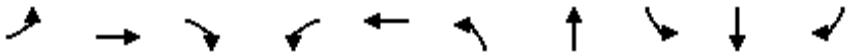
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	123	830	-	-	921	-	-	249
HCM Lane V/C Ratio	0.028	0.051	-	-	0.002	-	-	0.259
HCM Control Delay (s)	35.1	9.6	-	-	8.9	-	-	24.4
HCM Lane LOS	E	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	430	43	33	394	151	26	61	25	290	149	70
Future Volume (veh/h)	58	430	43	33	394	151	26	61	25	290	149	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.93	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	65	483	32	37	443	124	29	69	20	326	167	51
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	100	567	460	69	780	216	57	330	90	383	570	471
Arrive On Green	0.06	0.31	0.31	0.04	0.29	0.29	0.03	0.12	0.12	0.22	0.31	0.31
Sat Flow, veh/h	1767	1856	1506	1767	2709	751	1767	2685	732	1767	1856	1533
Grp Volume(v), veh/h	65	483	32	37	287	280	29	44	45	326	167	51
Grp Sat Flow(s),veh/h/ln	1767	1856	1506	1767	1763	1697	1767	1763	1654	1767	1856	1533
Q Serve(g_s), s	2.0	13.8	0.8	1.2	7.8	7.9	0.9	1.3	1.4	10.0	3.9	1.3
Cycle Q Clear(g_c), s	2.0	13.8	0.8	1.2	7.8	7.9	0.9	1.3	1.4	10.0	3.9	1.3
Prop In Lane	1.00		1.00	1.00		0.44	1.00		0.44	1.00		1.00
Lane Grp Cap(c), veh/h	100	567	460	69	507	488	57	216	203	383	570	471
V/C Ratio(X)	0.65	0.85	0.07	0.54	0.57	0.57	0.51	0.20	0.22	0.85	0.29	0.11
Avail Cap(c_a), veh/h	226	695	564	185	620	596	185	601	564	471	932	770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	18.4	13.9	26.6	17.1	17.1	26.8	22.2	22.3	21.2	14.9	14.0
Incr Delay (d2), s/veh	6.9	8.5	0.1	6.3	1.0	1.1	6.8	0.5	0.5	11.8	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	6.0	0.3	0.6	2.9	2.8	0.4	0.5	0.5	4.7	1.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.9	26.8	13.9	32.9	18.1	18.2	33.6	22.7	22.8	33.0	15.1	14.1
LnGrp LOS	C	C	B	C	B	B	C	C	C	C	B	B
Approach Vol, veh/h		580			604			118			544	
Approach Delay, s/veh		26.8			19.0			25.4			25.8	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	11.8	6.2	22.1	5.8	22.2	7.2	21.1
Change Period (Y+Rc), s	4.0	4.9	4.0	4.9	4.0	4.9	4.0	4.9
Max Green Setting (Gmax), s	15.0	19.2	5.9	21.1	5.9	28.3	7.2	19.8
Max Q Clear Time (g_c+I1), s	12.0	3.4	3.2	15.8	2.9	5.9	4.0	9.9
Green Ext Time (p_c), s	0.3	0.3	0.0	1.3	0.0	0.9	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	23.9
HCM 6th LOS	C



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	65	483	48	37	613	29	97	326	167	79
v/c Ratio	0.34	0.73	0.07	0.22	0.55	0.18	0.25	0.76	0.25	0.12
Control Delay	32.6	27.2	0.2	31.8	18.9	31.0	22.0	37.7	18.5	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	27.2	0.2	31.8	18.9	31.0	22.0	37.7	18.5	1.6
Queue Length 50th (ft)	23	135	0	13	97	11	13	117	40	0
Queue Length 95th (ft)	60	#338	0	41	150	34	33	#259	105	9
Internal Link Dist (ft)		1534			1683		1265		1044	
Turn Bay Length (ft)	350		290	190		180		305		
Base Capacity (vph)	205	672	665	168	1141	168	1054	428	851	777
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.72	0.07	0.22	0.54	0.17	0.09	0.76	0.20	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Int Delay, s/veh	146.6

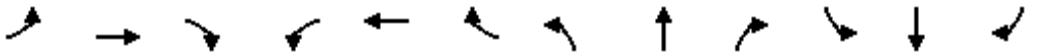
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	822	45	118	491	3	135	3	30	11	3	18
Future Vol, veh/h	15	822	45	118	491	3	135	3	30	11	3	18
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	490	-	-	350	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	17	945	52	136	564	3	155	3	34	13	3	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	572	0	0	1002	0	0	1865	1854	981	1872	1879	576
Stage 1	-	-	-	-	-	-	1010	1010	-	843	843	-
Stage 2	-	-	-	-	-	-	855	844	-	1029	1036	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	996	-	-	687	-	-	~ 55	73	301	55	71	515
Stage 1	-	-	-	-	-	-	288	316	-	357	378	-
Stage 2	-	-	-	-	-	-	351	378	-	281	307	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	991	-	-	684	-	-	~ 42	57	298	39	55	510
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 42	57	-	39	55	-
Stage 1	-	-	-	-	-	-	282	309	-	349	301	-
Stage 2	-	-	-	-	-	-	265	301	-	240	300	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	2.2	$ 1455.7	75.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	50	991	-	-	684	-	-	86
HCM Lane V/C Ratio	3.862	0.017	-	-	0.198	-	-	0.428
HCM Control Delay (s)	$ 1455.7	8.7	-	-	11.6	-	-	75.1
HCM Lane LOS	F	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	21.3	0.1	-	-	0.7	-	-	1.7

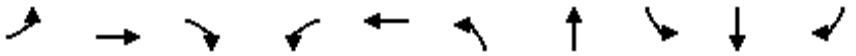
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	498	35	30	368	190	61	133	61	165	41	23
Future Volume (veh/h)	58	498	35	30	368	190	61	133	61	165	41	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.93	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	63	541	22	33	400	144	66	145	38	179	45	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	104	657	535	66	841	299	107	381	96	229	385	316
Arrive On Green	0.06	0.35	0.35	0.04	0.33	0.33	0.06	0.14	0.14	0.13	0.20	0.20
Sat Flow, veh/h	1795	1885	1535	1795	2572	913	1795	2789	700	1795	1885	1547
Grp Volume(v), veh/h	63	541	22	33	277	267	66	91	92	179	45	18
Grp Sat Flow(s),veh/h/ln	1795	1885	1535	1795	1791	1694	1795	1791	1698	1795	1885	1547
Q Serve(g_s), s	1.7	13.3	0.5	0.9	6.2	6.4	1.8	2.3	2.5	4.9	1.0	0.5
Cycle Q Clear(g_c), s	1.7	13.3	0.5	0.9	6.2	6.4	1.8	2.3	2.5	4.9	1.0	0.5
Prop In Lane	1.00		1.00	1.00		0.54	1.00		0.41	1.00		1.00
Lane Grp Cap(c), veh/h	104	657	535	66	586	554	107	245	232	229	385	316
V/C Ratio(X)	0.61	0.82	0.04	0.50	0.47	0.48	0.62	0.37	0.40	0.78	0.12	0.06
Avail Cap(c_a), veh/h	248	970	790	209	882	835	251	678	643	354	821	674
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	15.1	10.9	24.0	13.6	13.6	23.3	19.9	20.0	21.5	16.4	16.2
Incr Delay (d2), s/veh	5.5	3.7	0.0	5.8	0.6	0.7	5.6	0.9	1.1	6.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.8	0.1	0.5	2.2	2.1	0.8	0.9	0.9	2.1	0.4	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.9	18.9	11.0	29.8	14.2	14.3	28.9	20.9	21.1	27.4	16.6	16.3
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	B	B
Approach Vol, veh/h		626			577			249			242	
Approach Delay, s/veh		19.6			15.1			23.1			24.6	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	11.8	5.9	22.6	7.0	15.3	6.9	21.5
Change Period (Y+Rc), s	4.0	4.9	4.0	4.9	4.0	4.9	4.0	4.9
Max Green Setting (Gmax), s	10.0	19.2	5.9	26.1	7.1	22.1	7.0	25.0
Max Q Clear Time (g_c+I1), s	6.9	4.5	2.9	15.3	3.8	3.0	3.7	8.4
Green Ext Time (p_c), s	0.1	0.7	0.0	2.3	0.0	0.2	0.0	3.0

Intersection Summary	
HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	63	541	38	33	607	66	211	179	45	25
v/c Ratio	0.30	0.75	0.06	0.18	0.50	0.31	0.40	0.59	0.08	0.05
Control Delay	31.6	24.9	0.2	31.0	14.4	31.7	20.0	35.6	22.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.6	24.9	0.2	31.0	14.4	31.7	20.0	35.6	22.6	0.2
Queue Length 50th (ft)	20	135	0	11	76	21	24	57	13	0
Queue Length 95th (ft)	61	#359	0	39	127	63	59	#163	42	0
Internal Link Dist (ft)		1534			1683		1265		1044	
Turn Bay Length (ft)	350		290	190		180		305		
Base Capacity (vph)	225	885	789	190	1581	228	1204	322	749	701
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.61	0.05	0.17	0.38	0.29	0.18	0.56	0.06	0.04

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Int Delay, s/veh	82.8

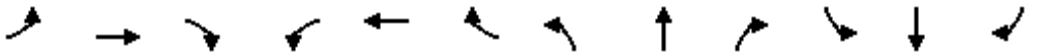
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	600	31	81	622	15	112	3	27	9	3	46
Future Vol, veh/h	37	600	31	81	622	15	112	3	27	9	3	46
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	490	-	-	350	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	43	690	36	93	715	17	129	3	31	10	3	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	737	0	0	731	0	0	1742	1722	718	1731	1732	734
Stage 1	-	-	-	-	-	-	799	799	-	915	915	-
Stage 2	-	-	-	-	-	-	943	923	-	816	817	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	864	-	-	869	-	-	~ 68	89	427	69	87	418
Stage 1	-	-	-	-	-	-	378	396	-	325	350	-
Stage 2	-	-	-	-	-	-	314	347	-	369	389	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	860	-	-	865	-	-	~ 50	75	423	54	73	414
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 50	75	-	54	73	-
Stage 1	-	-	-	-	-	-	357	374	-	307	311	-
Stage 2	-	-	-	-	-	-	241	308	-	320	368	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.1	$ 902.8	35.8
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	61	860	-	-	865	-	-	182
HCM Lane V/C Ratio	2.676	0.049	-	-	0.108	-	-	0.366
HCM Control Delay (s)	$ 902.8	9.4	-	-	9.7	-	-	35.8
HCM Lane LOS	F	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	16.5	0.2	-	-	0.4	-	-	1.6

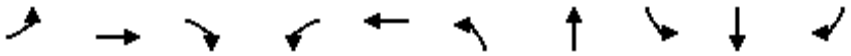
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	434	43	33	398	152	26	62	25	293	150	71
Future Volume (veh/h)	59	434	43	33	398	152	26	62	25	293	150	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.93	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	66	488	32	37	447	125	29	70	20	329	169	52
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	101	569	462	69	782	217	57	329	89	385	571	472
Arrive On Green	0.06	0.31	0.31	0.04	0.29	0.29	0.03	0.12	0.12	0.22	0.31	0.31
Sat Flow, veh/h	1767	1856	1507	1767	2709	750	1767	2694	725	1767	1856	1533
Grp Volume(v), veh/h	66	488	32	37	289	283	29	44	46	329	169	52
Grp Sat Flow(s),veh/h/ln	1767	1856	1507	1767	1763	1697	1767	1763	1656	1767	1856	1533
Q Serve(g_s), s	2.1	14.0	0.9	1.2	7.9	8.1	0.9	1.3	1.4	10.1	3.9	1.4
Cycle Q Clear(g_c), s	2.1	14.0	0.9	1.2	7.9	8.1	0.9	1.3	1.4	10.1	3.9	1.4
Prop In Lane	1.00		1.00	1.00		0.44	1.00		0.44	1.00		1.00
Lane Grp Cap(c), veh/h	101	569	462	69	509	490	57	215	202	385	571	472
V/C Ratio(X)	0.66	0.86	0.07	0.54	0.57	0.58	0.51	0.21	0.23	0.85	0.30	0.11
Avail Cap(c_a), veh/h	224	690	561	184	616	593	184	597	561	468	926	765
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	18.5	13.9	26.7	17.2	17.2	27.0	22.4	22.5	21.3	14.9	14.1
Incr Delay (d2), s/veh	7.0	9.0	0.1	6.4	1.0	1.1	6.8	0.5	0.6	12.3	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	6.2	0.3	0.6	2.9	2.9	0.5	0.5	0.5	4.9	1.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.2	27.5	14.0	33.1	18.2	18.3	33.8	22.9	23.0	33.6	15.2	14.2
LnGrp LOS	C	C	B	C	B	B	C	C	C	C	B	B
Approach Vol, veh/h		586			609			119			550	
Approach Delay, s/veh		27.4			19.1			25.6			26.1	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.4	11.8	6.2	22.3	5.8	22.4	7.2	21.3
Change Period (Y+Rc), s	4.0	4.9	4.0	4.9	4.0	4.9	4.0	4.9
Max Green Setting (Gmax), s	15.0	19.2	5.9	21.1	5.9	28.3	7.2	19.8
Max Q Clear Time (g_c+I1), s	12.1	3.4	3.2	16.0	2.9	5.9	4.1	10.1
Green Ext Time (p_c), s	0.3	0.3	0.0	1.3	0.0	0.9	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	66	488	48	37	618	29	98	329	169	80
v/c Ratio	0.35	0.73	0.07	0.22	0.56	0.18	0.25	0.77	0.25	0.13
Control Delay	32.8	27.3	0.2	31.8	18.9	31.0	22.0	38.6	18.6	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.8	27.3	0.2	31.8	18.9	31.0	22.0	38.6	18.6	1.6
Queue Length 50th (ft)	24	137	0	14	98	11	13	119	41	0
Queue Length 95th (ft)	61	#344	0	41	152	34	34	#262	106	9
Internal Link Dist (ft)		1534			1683		1265		1044	
Turn Bay Length (ft)	350		290	190		180		305		
Base Capacity (vph)	204	670	664	167	1147	167	1050	426	848	774
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.73	0.07	0.22	0.54	0.17	0.09	0.77	0.20	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Int Delay, s/veh	149.4

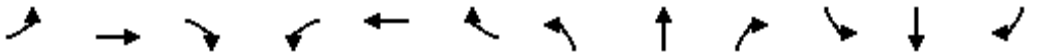
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	830	45	118	496	3	135	3	30	11	3	18
Future Vol, veh/h	15	830	45	118	496	3	135	3	30	11	3	18
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	490	-	-	350	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	17	954	52	136	570	3	155	3	34	13	3	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	578	0	0	1011	0	0	1880	1869	990	1887	1894	582
Stage 1	-	-	-	-	-	-	1019	1019	-	849	849	-
Stage 2	-	-	-	-	-	-	861	850	-	1038	1045	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	991	-	-	682	-	-	~ 54	72	298	53	69	511
Stage 1	-	-	-	-	-	-	285	313	-	354	376	-
Stage 2	-	-	-	-	-	-	349	375	-	278	304	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	986	-	-	679	-	-	~ 41	56	295	37	54	506
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 41	56	-	37	54	-
Stage 1	-	-	-	-	-	-	279	306	-	346	299	-
Stage 2	-	-	-	-	-	-	263	299	-	237	297	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	2.2	$ 1493.9	80.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	49	986	-	-	679	-	-	82
HCM Lane V/C Ratio	3.941	0.017	-	-	0.2	-	-	0.449
HCM Control Delay (s)	$ 1493.9	8.7	-	-	11.6	-	-	80.6
HCM Lane LOS	F	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	21.4	0.1	-	-	0.7	-	-	1.8

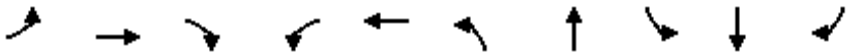
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	503	35	30	371	192	62	134	62	166	41	23
Future Volume (veh/h)	59	503	35	30	371	192	62	134	62	166	41	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.93	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	64	547	22	33	403	146	67	146	39	180	45	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	105	660	538	66	843	301	108	380	97	230	386	317
Arrive On Green	0.06	0.35	0.35	0.04	0.33	0.33	0.06	0.14	0.14	0.13	0.20	0.20
Sat Flow, veh/h	1795	1885	1535	1795	2567	917	1795	2776	710	1795	1885	1547
Grp Volume(v), veh/h	64	547	22	33	280	269	67	92	93	180	45	18
Grp Sat Flow(s),veh/h/ln	1795	1885	1535	1795	1791	1693	1795	1791	1695	1795	1885	1547
Q Serve(g_s), s	1.8	13.6	0.5	0.9	6.3	6.5	1.9	2.4	2.6	5.0	1.0	0.5
Cycle Q Clear(g_c), s	1.8	13.6	0.5	0.9	6.3	6.5	1.9	2.4	2.6	5.0	1.0	0.5
Prop In Lane	1.00		1.00	1.00		0.54	1.00		0.42	1.00		1.00
Lane Grp Cap(c), veh/h	105	660	538	66	588	556	108	245	232	230	386	317
V/C Ratio(X)	0.61	0.83	0.04	0.50	0.48	0.48	0.62	0.37	0.40	0.78	0.12	0.06
Avail Cap(c_a), veh/h	246	962	784	207	876	828	249	673	637	351	815	669
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	15.2	10.9	24.2	13.7	13.7	23.5	20.1	20.2	21.6	16.6	16.4
Incr Delay (d2), s/veh	5.6	4.0	0.0	5.8	0.6	0.7	5.7	0.9	1.1	6.3	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.9	0.1	0.5	2.2	2.2	0.9	0.9	0.9	2.2	0.4	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	19.2	11.0	30.0	14.3	14.4	29.2	21.0	21.3	27.9	16.7	16.4
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	B	B
Approach Vol, veh/h		633			582			252			243	
Approach Delay, s/veh		19.9			15.2			23.3			25.0	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	11.9	5.9	22.8	7.1	15.4	7.0	21.7
Change Period (Y+Rc), s	4.0	4.9	4.0	4.9	4.0	4.9	4.0	4.9
Max Green Setting (Gmax), s	10.0	19.2	5.9	26.1	7.1	22.1	7.0	25.0
Max Q Clear Time (g_c+I1), s	7.0	4.6	2.9	15.6	3.9	3.0	3.8	8.5
Green Ext Time (p_c), s	0.1	0.7	0.0	2.3	0.0	0.2	0.0	3.0

Intersection Summary	
HCM 6th Ctrl Delay	19.5
HCM 6th LOS	B



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	64	547	38	33	612	67	213	180	45	25
v/c Ratio	0.31	0.76	0.06	0.18	0.50	0.32	0.40	0.59	0.09	0.05
Control Delay	31.8	25.2	0.2	31.1	14.5	31.9	19.9	35.9	22.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.8	25.2	0.2	31.1	14.5	31.9	19.9	35.9	22.6	0.2
Queue Length 50th (ft)	20	139	0	11	77	21	24	58	13	0
Queue Length 95th (ft)	62	#365	0	39	128	64	60	#165	42	0
Internal Link Dist (ft)		1534			1683		1265		1044	
Turn Bay Length (ft)	350		290	190		180		305		
Base Capacity (vph)	224	880	785	188	1573	227	1198	320	745	698
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.62	0.05	0.18	0.39	0.30	0.18	0.56	0.06	0.04

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Int Delay, s/veh	88.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	606	31	81	629	15	112	3	27	9	3	46
Future Vol, veh/h	37	606	31	81	629	15	112	3	27	9	3	46
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	490	-	-	350	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	43	697	36	93	723	17	129	3	31	10	3	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	745	0	0	738	0	0	1757	1737	725	1746	1747	742
Stage 1	-	-	-	-	-	-	806	806	-	923	923	-
Stage 2	-	-	-	-	-	-	951	931	-	823	824	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	858	-	-	863	-	-	~ 66	87	423	67	86	414
Stage 1	-	-	-	-	-	-	374	393	-	322	347	-
Stage 2	-	-	-	-	-	-	311	344	-	366	386	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	854	-	-	859	-	-	~ 48	73	419	52	72	410
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 48	73	-	52	72	-
Stage 1	-	-	-	-	-	-	353	371	-	304	308	-
Stage 2	-	-	-	-	-	-	238	305	-	317	365	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.1	$ 970.4	37.1
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	58	854	-	-	859	-	-	177
HCM Lane V/C Ratio	2.814	0.05	-	-	0.108	-	-	0.377
HCM Control Delay (s)	$ 970.4	9.4	-	-	9.7	-	-	37.1
HCM Lane LOS	F	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	16.8	0.2	-	-	0.4	-	-	1.6

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

APPENDIX C

TRAFFIC SIGNAL WARRANT ANALYSES

PETERS ENGINEERING GROUP
A CALIFORNIA CORPORATION

Warrant 3: Peak Hour

Existing

2: Jason Ct & Fernwood Dr

Intersection Information:

	Major Street	Minor Street
Street Name	Avenue 12	Fernwood Dr
Direction	EB/WB	NB/SB
Number of Lanes	2	1
Approach Speed	35	30

Warrant 3 Met? **No**

Details

Low Population? Yes

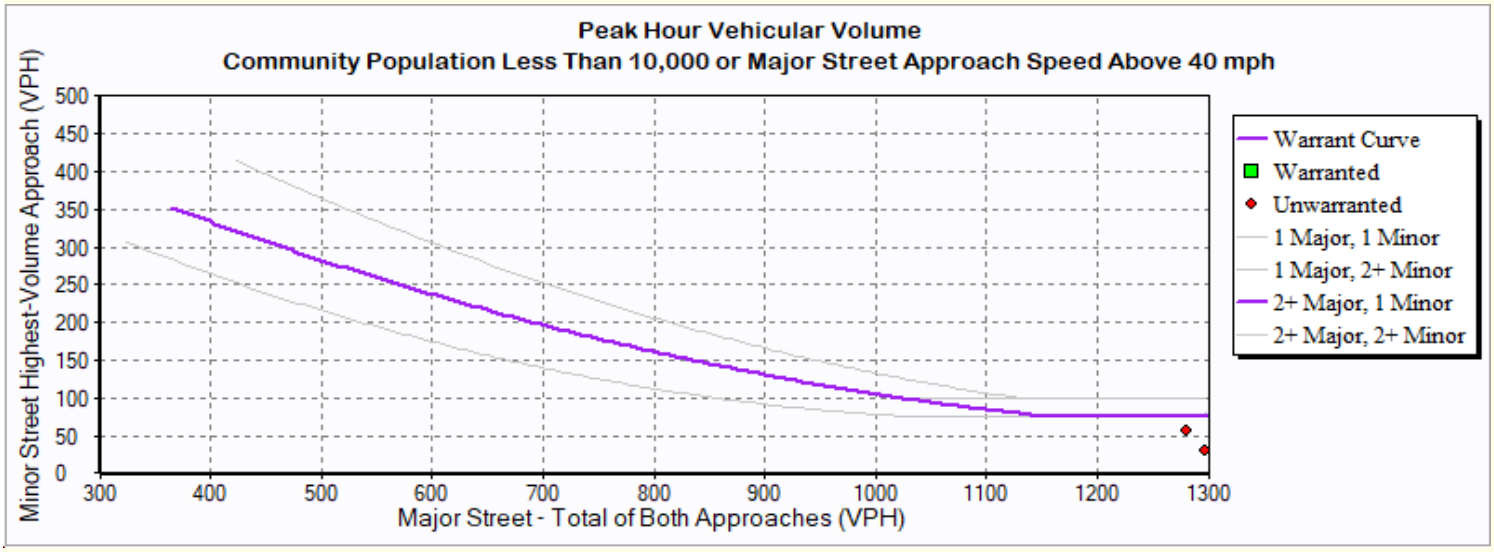
Condition A Met? No

Notes 0 Hours met (1 required)

Condition B Met? No

Notes 0 Hours met (1 required)

Minor Approach Time Delay Condition Met?	Not Met
Minor Approach Volume Condition Met?	Met
Total Entering Intersection Volume Condition Met?	Not Met



Warrant 3: Peak Hour

2: Jason Ct & Fernwood Dr

Hour	Major Street Total All Approaches (vph)	Minor Street Highest Volume Approach (vph)
7:30	1,333	30
17:00	1,281	56

Warrant 3: Peak Hour

Existing Plus Project

2: Jason Ct & Fernwood Dr

Intersection Information:

	Major Street	Minor Street
Street Name	Avenue 12	Fernwood Dr
Direction	EB/WB	NB/SB
Number of Lanes	2	1
Approach Speed	35	30

Warrant 3 Met? **Yes**

Details

Low Population? Yes

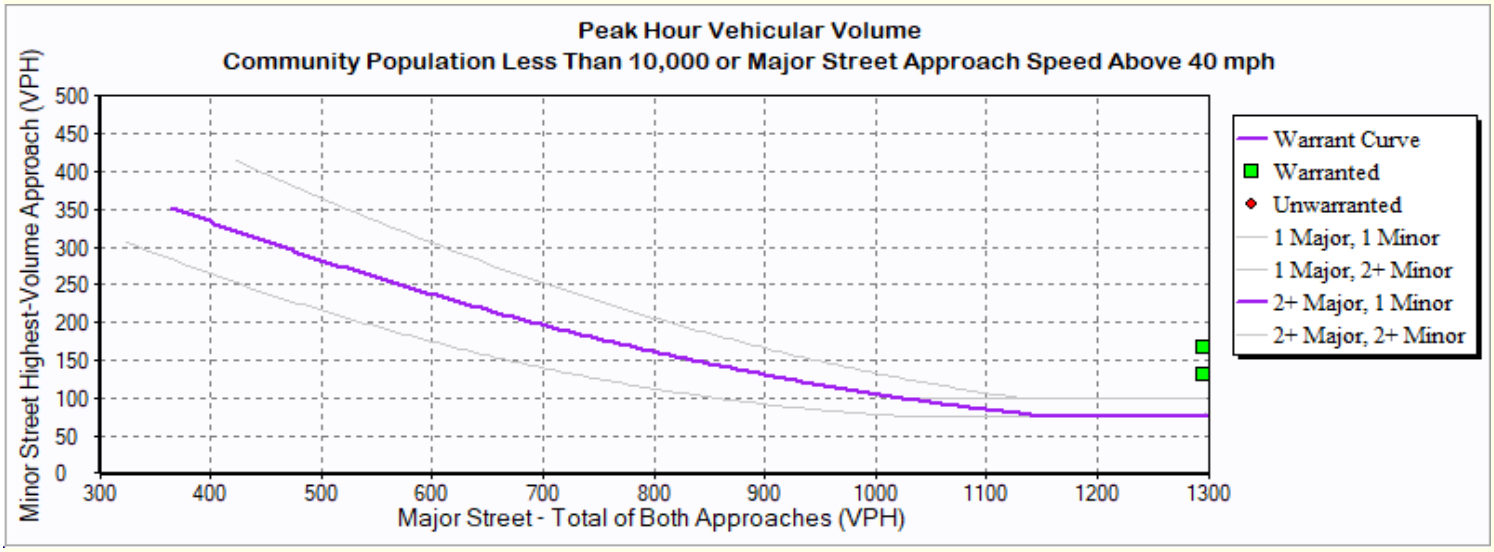
Condition A Met? No

Notes 0 Hours met (1 required)

Condition B Met? Yes

Notes 2 Hours met (1 required)

Minor Approach Time Delay Condition Met?	Not Met
Minor Approach Volume Condition Met?	Met
Total Entering Intersection Volume Condition Met?	Not Met



Warrant 3: Peak Hour

2: Jason Ct & Fernwood Dr

Hour	Major Street Total All Approaches (vph)	Minor Street Highest Volume Approach (vph)
7:30	1,494	167
17:00	1,386	130

Warrant 3: Peak Hour

Opening Year With Project

2: Jason Ct & Fernwood Dr

Intersection Information:

	Major Street	Minor Street
Street Name	Avenue 12	Fernwood Dr
Direction	EB/WB	NB/SB
Number of Lanes	2	1
Approach Speed	35	30

Warrant 3 Met? **Yes**

Details

Low Population? Yes

Condition A Met? No

Notes 0 Hours met (1 required)

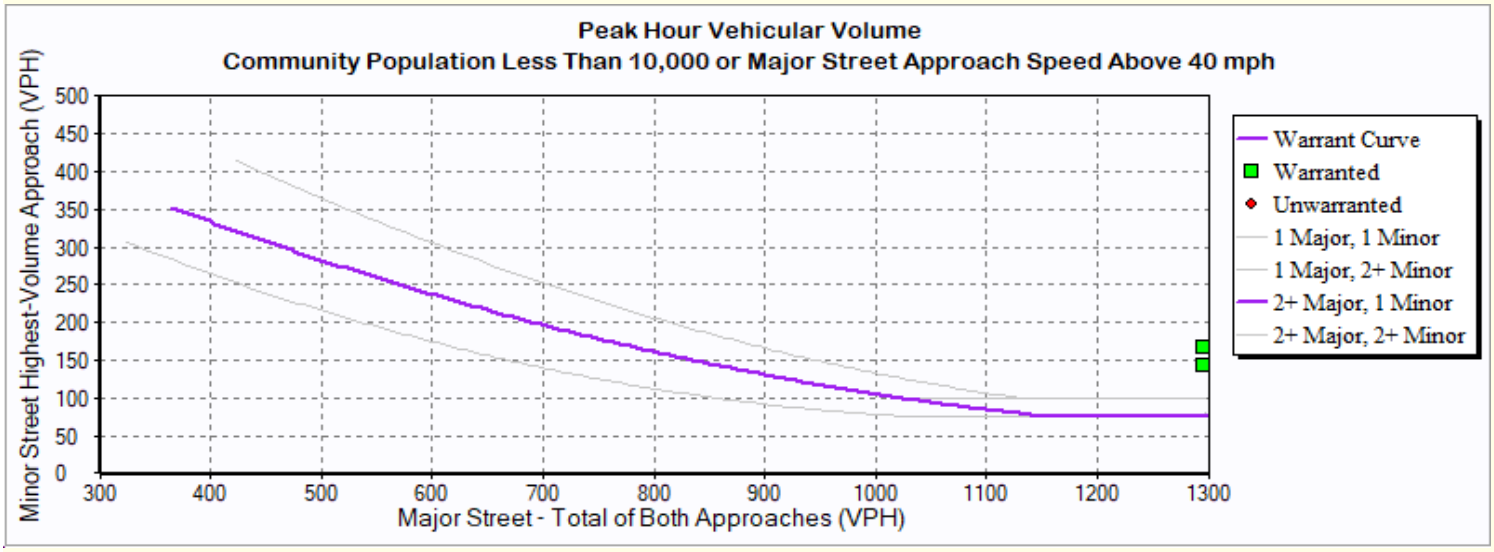
Condition B Met? Yes

Notes 2 Hours met (1 required)

Minor Approach Time Delay Condition Met? Not Met

Minor Approach Volume Condition Met? Met

Total Entering Intersection Volume Condition Met? Not Met



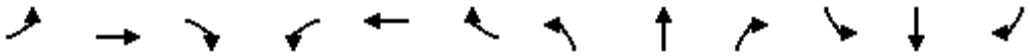
2: Jason Ct & Fernwood Dr

Hour	Major Street Total All Approaches (vph)	Minor Street Highest Volume Approach (vph)
7:30	1,507	168
17:00	1,399	142

APPENDIX D

IMPROVED INTERSECTION ANALYSIS SHEETS

PETERS ENGINEERING GROUP
A CALIFORNIA CORPORATION



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	822	45	118	491	3	135	3	30	11	3	18
Future Volume (veh/h)	15	822	45	118	491	3	135	3	30	11	3	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.95	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	17	945	49	136	564	3	155	3	31	13	3	16
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	35	1000	52	169	1196	6	271	4	38	148	49	135
Arrive On Green	0.02	0.57	0.57	0.10	0.65	0.65	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1767	1746	91	1767	1844	10	1170	23	234	527	297	824
Grp Volume(v), veh/h	17	0	994	136	0	567	189	0	0	32	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	1836	1767	0	1853	1427	0	0	1648	0	0
Q Serve(g_s), s	0.8	0.0	41.3	6.2	0.0	12.7	9.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.8	0.0	41.3	6.2	0.0	12.7	10.4	0.0	0.0	1.3	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.01	0.82		0.16	0.41		0.50
Lane Grp Cap(c), veh/h	35	0	1052	169	0	1202	313	0	0	331	0	0
V/C Ratio(X)	0.49	0.00	0.95	0.81	0.00	0.47	0.60	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	129	0	1109	181	0	1202	396	0	0	418	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	39.8	0.0	16.3	36.3	0.0	7.3	32.9	0.0	0.0	29.2	0.0	0.0
Incr Delay (d2), s/veh	10.4	0.0	15.3	21.8	0.0	0.3	1.9	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	18.8	3.6	0.0	4.1	3.7	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.2	0.0	31.6	58.1	0.0	7.6	34.7	0.0	0.0	29.4	0.0	0.0
LnGrp LOS	D	A	C	E	A	A	C	A	A	C	A	A
Approach Vol, veh/h		1011			703			189			32	
Approach Delay, s/veh		31.9			17.4			34.7			29.4	
Approach LOS		C			B			C			C	

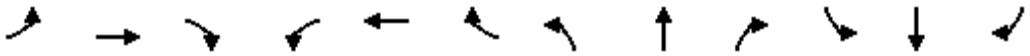
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.3	11.8	51.9		18.3	5.6	58.1				
Change Period (Y+Rc), s		4.9	4.0	4.9		4.9	4.0	4.9				
Max Green Setting (Gmax), s		18.3	8.4	49.5		18.3	6.0	51.9				
Max Q Clear Time (g_c+I1), s		12.4	8.2	43.3		3.3	2.8	14.7				
Green Ext Time (p_c), s		0.5	0.0	3.6		0.1	0.0	4.0				

Intersection Summary												
HCM 6th Ctrl Delay			26.9									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	17	997	136	567	192	37
v/c Ratio	0.15	0.96	0.81	0.46	0.78	0.13
Control Delay	42.6	40.9	74.7	10.2	54.9	18.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.6	40.9	74.7	10.2	54.9	18.6
Queue Length 50th (ft)	9	519	77	124	96	7
Queue Length 95th (ft)	29	#780	#170	257	#179	32
Internal Link Dist (ft)		642		645	400	558
Turn Bay Length (ft)	490		350			
Base Capacity (vph)	120	1038	168	1221	283	329
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.96	0.81	0.46	0.68	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



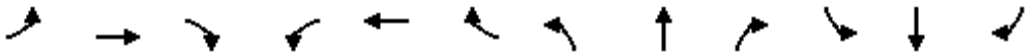
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	600	31	81	622	15	112	3	27	9	3	46
Future Volume (veh/h)	37	600	31	81	622	15	112	3	27	9	3	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.95	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	43	690	33	93	715	14	129	3	28	10	3	43
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	79	848	41	128	927	18	313	17	42	106	39	200
Arrive On Green	0.04	0.48	0.48	0.07	0.51	0.51	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1767	1754	84	1767	1812	35	1089	100	252	125	235	1192
Grp Volume(v), veh/h	43	0	723	93	0	729	160	0	0	56	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	1838	1767	0	1848	1440	0	0	1552	0	0
Q Serve(g_s), s	1.2	0.0	16.7	2.6	0.0	15.9	3.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.2	0.0	16.7	2.6	0.0	15.9	5.0	0.0	0.0	1.5	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.02	0.81		0.17	0.18		0.77
Lane Grp Cap(c), veh/h	79	0	889	128	0	945	372	0	0	345	0	0
V/C Ratio(X)	0.54	0.00	0.81	0.73	0.00	0.77	0.43	0.00	0.00	0.16	0.00	0.00
Avail Cap(c_a), veh/h	226	0	1658	389	0	1838	692	0	0	694	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.4	0.0	11.0	22.7	0.0	9.9	19.3	0.0	0.0	17.9	0.0	0.0
Incr Delay (d2), s/veh	5.6	0.0	1.9	7.6	0.0	1.4	0.8	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	5.3	1.2	0.0	4.8	1.6	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.0	0.0	12.9	30.2	0.0	11.2	20.0	0.0	0.0	18.2	0.0	0.0
LnGrp LOS	C	A	B	C	A	B	C	A	A	B	A	A
Approach Vol, veh/h		766			822			160			56	
Approach Delay, s/veh		13.8			13.4			20.0			18.2	
Approach LOS		B			B			C			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		13.3	7.6	29.1		13.3	6.2	30.4				
Change Period (Y+Rc), s		4.9	4.0	4.9		4.9	4.0	4.9				
Max Green Setting (Gmax), s		20.1	11.0	45.1		20.1	6.4	49.7				
Max Q Clear Time (g_c+I1), s		7.0	4.6	18.7		3.5	3.2	17.9				
Green Ext Time (p_c), s		0.7	0.1	5.4		0.2	0.0	5.7				

Intersection Summary												
HCM 6th Ctrl Delay			14.3									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	43	726	93	732	163	66
v/c Ratio	0.24	0.82	0.38	0.72	0.61	0.19
Control Delay	40.0	25.2	38.0	17.2	37.6	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	25.2	38.0	17.2	37.6	12.7
Queue Length 50th (ft)	18	257	38	235	62	5
Queue Length 95th (ft)	55	451	94	403	136	37
Internal Link Dist (ft)		642		645	400	558
Turn Bay Length (ft)	490		350			
Base Capacity (vph)	192	1255	330	1352	450	553
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.58	0.28	0.54	0.36	0.12

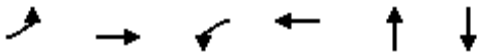
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	830	45	118	496	3	135	3	30	11	3	18
Future Volume (veh/h)	15	830	45	118	496	3	135	3	30	11	3	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.95	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	17	954	49	136	570	3	155	3	31	13	3	16
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	35	998	51	170	1194	6	272	4	38	148	49	135
Arrive On Green	0.02	0.57	0.57	0.10	0.65	0.65	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1767	1747	90	1767	1844	10	1169	23	234	526	297	824
Grp Volume(v), veh/h	17	0	1003	136	0	573	189	0	0	32	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	1836	1767	0	1853	1427	0	0	1648	0	0
Q Serve(g_s), s	0.8	0.0	42.1	6.2	0.0	12.9	9.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.8	0.0	42.1	6.2	0.0	12.9	10.3	0.0	0.0	1.3	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.01	0.82		0.16	0.41		0.50
Lane Grp Cap(c), veh/h	35	0	1049	170	0	1200	314	0	0	332	0	0
V/C Ratio(X)	0.49	0.00	0.96	0.80	0.00	0.48	0.60	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	130	0	1082	214	0	1200	396	0	0	418	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	39.6	0.0	16.5	36.1	0.0	7.3	32.7	0.0	0.0	29.1	0.0	0.0
Incr Delay (d2), s/veh	10.4	0.0	17.5	15.7	0.0	0.3	1.9	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	19.7	3.3	0.0	4.1	3.7	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.0	0.0	34.1	51.8	0.0	7.6	34.6	0.0	0.0	29.2	0.0	0.0
LnGrp LOS	D	A	C	D	A	A	C	A	A	C	A	A
Approach Vol, veh/h		1020			709			189			32	
Approach Delay, s/veh		34.3			16.1			34.6			29.2	
Approach LOS		C			B			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.3	11.8	51.5		18.3	5.6	57.8				
Change Period (Y+Rc), s		4.9	4.0	4.9		4.9	4.0	4.9				
Max Green Setting (Gmax), s		18.2	9.9	48.1		18.2	6.0	52.0				
Max Q Clear Time (g_c+I1), s		12.3	8.2	44.1		3.3	2.8	14.9				
Green Ext Time (p_c), s		0.5	0.1	2.5		0.1	0.0	4.1				

Intersection Summary												
HCM 6th Ctrl Delay			27.6									
HCM 6th LOS			C									

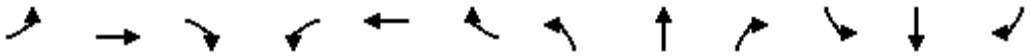


Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	17	1006	136	573	192	37
v/c Ratio	0.15	0.99	0.72	0.47	0.78	0.13
Control Delay	42.6	48.9	60.5	10.3	55.0	18.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.6	48.9	60.5	10.3	55.0	18.6
Queue Length 50th (ft)	9	~614	76	126	96	7
Queue Length 95th (ft)	29	#808	#153	260	#180	32
Internal Link Dist (ft)		642		645	400	558
Turn Bay Length (ft)	490		350			
Base Capacity (vph)	120	1012	199	1221	283	329
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.99	0.68	0.47	0.68	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

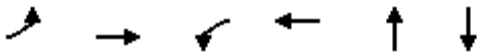
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	606	31	81	629	15	112	3	27	9	3	46
Future Volume (veh/h)	37	606	31	81	629	15	112	3	27	9	3	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.95	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	43	697	33	93	723	14	129	3	28	10	3	43
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	79	854	40	128	932	18	311	16	42	105	39	199
Arrive On Green	0.04	0.49	0.49	0.07	0.51	0.51	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1767	1755	83	1767	1813	35	1090	99	252	125	235	1192
Grp Volume(v), veh/h	43	0	730	93	0	737	160	0	0	56	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	1838	1767	0	1848	1440	0	0	1552	0	0
Q Serve(g_s), s	1.2	0.0	17.0	2.6	0.0	16.2	3.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.2	0.0	17.0	2.6	0.0	16.2	5.0	0.0	0.0	1.6	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.02	0.81		0.17	0.18		0.77
Lane Grp Cap(c), veh/h	79	0	895	128	0	950	370	0	0	344	0	0
V/C Ratio(X)	0.54	0.00	0.82	0.73	0.00	0.78	0.43	0.00	0.00	0.16	0.00	0.00
Avail Cap(c_a), veh/h	224	0	1644	386	0	1822	686	0	0	688	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.6	0.0	11.0	22.9	0.0	9.9	19.4	0.0	0.0	18.1	0.0	0.0
Incr Delay (d2), s/veh	5.7	0.0	1.9	7.7	0.0	1.4	0.8	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	5.4	1.2	0.0	4.9	1.6	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	0.0	12.9	30.6	0.0	11.3	20.2	0.0	0.0	18.3	0.0	0.0
LnGrp LOS	C	A	B	C	A	B	C	A	A	B	A	A
Approach Vol, veh/h		773			830			160			56	
Approach Delay, s/veh		13.8			13.5			20.2			18.3	
Approach LOS		B			B			C			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		13.3	7.6	29.4		13.3	6.3	30.8				
Change Period (Y+Rc), s		4.9	4.0	4.9		4.9	4.0	4.9				
Max Green Setting (Gmax), s		20.1	11.0	45.1		20.1	6.4	49.7				
Max Q Clear Time (g_c+I1), s		7.0	4.6	19.0		3.6	3.2	18.2				
Green Ext Time (p_c), s		0.7	0.1	5.5		0.2	0.0	5.8				

Intersection Summary												
HCM 6th Ctrl Delay			14.4									
HCM 6th LOS			B									



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	43	733	93	740	163	66
v/c Ratio	0.24	0.82	0.38	0.72	0.61	0.19
Control Delay	40.2	25.3	38.4	17.3	37.9	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.2	25.3	38.4	17.3	37.9	12.7
Queue Length 50th (ft)	18	262	39	240	63	5
Queue Length 95th (ft)	55	460	94	411	136	37
Internal Link Dist (ft)		642		645	400	558
Turn Bay Length (ft)	490		350			
Base Capacity (vph)	190	1249	328	1344	447	549
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.59	0.28	0.55	0.36	0.12

Intersection Summary