CITY OF MERCED
PLANNING & PERMITTING DIVISION

TYPE OF PROPOSAL: General Plan Amendment #22-05, Fahrens Specific Plan Amendment #5, Zone Change #432, Residential Planned Development Establishment #78, and Tentative Subdivision Map #1326

INITIAL STUDY: #22-50

DATE RECEIVED: December 8, 2022 (date application determined to be complete)

LOCATION: 1250 Cardella Road

ASSESSOR'S PARCEL NUMBERS: 206-030-017

(SEE ATTACHED MAP AT ATTACHMENTS A)

Please forward any written comments by April 5, 2023 to:

Francisco Mendoza-Gonzalez, Associate Planner
City of Merced Planning & Permitting Division
678 West 18th Street
Merced, CA 95340
209-385-6929
mendozaf@cityofmerced.org

Applicant Contact Information:

Attn: ISEA International, LLC
42260 Vargard Road
Fremont, CA 94593
(510) 378-3950
svpmarketing@yahoo.com

PROJECT DESCRIPTION

The Project site consists of an approximate 10.76-acre parcel (APN: 206-030-017located at 1250 Cardella Road (Attachment B), generally located on the south side of Cardella Road, between El Redondo Drive and Horizons Avenue. The subject site has a Zoning classification of Planned Development (P-D) #50 and General Plan designations of Office Commercial (CO) and Neighborhood Commercial (CN). The subject site is generally surrounded by undeveloped land.

The applicant would like to develop a single-family subdivision, for a total of 53 residential lots. The current zoning classification of Planned Development (P-D) #50 and General Plan designations of Office Commercial (CO) and Neighborhood Commercial (CN) are intended for commercial type uses which include, but are not limited to, professional services, personal services, retail, restaurants, etc. The existing land use designation also allows for multi-family residential at a density up to 36 dwelling units per acre. The proposed subdivision would be accessible from the new Gaucho Drive which connects with two collector roads, El Redondo Drive

and Horizons Avenue (both north/southbound lanes) out to the nearest arterial roads north to Cardella Road and south to Yosemite Avenue.

Project Location

The subject site is located within the northwestern quadrant of Merced. The subject site is surrounded by residential uses to the south, east, and west (either recently entitled or under construction). South of the subject site is a subdivision that has been approved for single-family homes, to the east is an undeveloped 15.5 acre parcel that was recently entitled for an apartment complex, to the southwest is undeveloped land that was entitled for single-family homes, and to the north across Cardella Road is agricultural land in Merced County jurisdiction (with a General Plan designation of Office Commercial). The table below identifies the surrounding uses:

Table 1 Surrounding Uses (Refer to Attachment A)

Surrounding Land	Existing Use of Land	Zoning Designation	City General Plan Land Use Designation
North	Undeveloped/Agriculture (across from Cardella Road)	Merced County Jurisdiction	Office Commercial (CO)
South	Single-Family Homes (across from Gaucho Drive)	Planned Development (P-D) #50	Village Residential (VR)
East	Undeveloped Land (across from Horizons Avenue)	Planned Development (P-D) #50	Village Residential (VR)
West	Undeveloped Land (across from El Redondo Drive)	Planned Development (P-D) #57	Village Residential (VR)

1. INITIAL FINDINGS

A. The proposal is a project as defined by CEQA Guidelines Section 15378.

B. The Project is not a ministerial or emergency project as defined under CEQA Guidelines (Sections 15369 and 15369).

C. The Project is therefore discretionary and subject to CEQA (Section 15357).

D. The Project is not Categorically Exempt.

E. The Project is not Statutorily Exempt.

F. Therefore, an Environmental Checklist has been required and filed.

2. CHECKLIST FINDINGS

A. An on-site inspection was made by this reviewer on February 27, 2023.

B. This checklist was prepared on March 15, 2023.

C. The *Merced Vision 2030 General Plan* and its associated Environmental Impact Report [EIR (SCH# 2008071069)] were certified in January 2012. The document

comprehensively examined the potential environmental impacts that may occur as a result of build-out of the 28,576-acre Merced (SUDP/SOI). For those significant environmental impacts (Loss of Agricultural Soils and Air Quality) for which no mitigation measures were available, the City adopted a Statement of Overriding Considerations (City Council Resolution #2011-63). This document herein incorporates by reference the *Merced Vision 2030 General Plan, the General Plan Program EIR* (SCH# 2008071069)*,* and Resolution #2011-63.

As a subsequent development project within the SUDP/SOI, many potential environmental effects of the Project have been previously considered at the program level and addressed within the General Plan and associated EIR. (Copies of the General Plan and its EIR are available for review at the City of Merced Planning and Permitting Division, 678 West 18th Street, Merced, CA 95340.) As a second tier environmental document, Initial Study #22-50 plans to incorporate goals and policies to implement actions of the *Merced Vision 2030 General Plan*, along with mitigation measures from the General Plan EIR, as mitigation for potential impacts of the Project.

Project-level environmental impacts and mitigation measures (if applicable) have been identified through site-specific review by City staff. This study also utilizes existing technical information contained in prior documents and incorporates this information into this study.

3. ENVIRONMENTAL IMPACTS:

Will the proposed project result in significant impacts in any of the listed categories? Significant impacts are those that are substantial, or potentially substantial, changes that may adversely affect the physical conditions within the area affected by the Project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant. (Section 15372, State CEQA Guidelines. Appendix G of the Guidelines contains examples of possible significant effects.)

A narrative description of all "potentially significant," "negative declaration: potentially significant unless mitigation incorporated," and "less than significant impact" answers are provided within this Initial Study.

A. Aesthetics

SETTING AND DESCRIPTION

The project site is located in northwest Merced, approximately three miles northwest of Downtown and two and a half a mile northeast of Highway 99. The project site consists of an undeveloped totaling approximately 10.76 acres. The terrain is generally flat. The site is surrounded by residential uses to the south (single-family homes under construction) and undeveloped land designated Village Core Residential to the east and west.

The proposed project would include one single-family home on each newly created lot, for a total of 53 single-family homes. The site plans, floor plans, or elevations for this subdivision have not

been submitted. Even though the applicant is proposing a Residential Planned Development, the applicant is not proposing a unique set of development standards that would set standards for maximum building height, maximum lot coverage, minimum setback requirements, minimum parking requirements, etc. The applicant is proposing to utilize the existing development standards for the Low Density Residential (R-1-5) Zone already contained within the City's Zoning Ordinance. Similarly, for the building elevations, the applicant is not proposing any specific architectural standards for this subdivision. The exterior elevations shall be evaluated at a later time when building permit applications are submitted to ensure compliance with the City's general design requirements for single-family homes as shown under MMC 20.46.020 – Design Standards for Single-Family Dwellings and Mobile Homes.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
A. <u>Aesthetics.</u> Will the Project:				
1) Have a substantial adverse effect on a scenic vista?				✓
2) Substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				✓
3) Substantially degrade the existing visual character or quality of the site and its surroundings?			✓	
4) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			✓	

1) **No Impact**

No designated scenic vistas exist on the project site or in the project area. Therefore, no impacts in this regard would occur with this development.

2) **No Impact**

There are no officially designated State Scenic Highways or Routes in the project vicinity. Therefore, the Project would have no impact on scenic resources, such as rock outcroppings, trees, or historic buildings within a scenic highway.

3) **Less-Than-Significant Impact**

The proposed Project would transform the site from a mostly undeveloped site to a fully developed site. Undeveloped lots tend lead to concerns regarding weed abatement, waste drop-off, and general dilapidation. The proposed homes, parking, and streets would fully develop the site. The units would add architectural interest with the use of siding, stucco, and stone veneers or as otherwise meeting the City's minimum single-family design standards. Based on these factors, this impact is considered to be less than significant.

4) **Less Than Significant**

Construction of the proposed project and off-site improvements include new lighting on the buildings and throughout the new streets for this subdivision. This new lighting could be a source of light or glare that would affect the views in the area. However, the City of Merced has adopted the California Green Building Standards Code as Section 17.07 of the Merced Municipal Code. As administered by the City, the Green Building Standards Code prohibits the spillage of light from one lot to another. This would prevent new glare effects on the existing buildings surrounding the project site.

B. Agriculture Resources

SETTING AND DESCRIPTION

Merced County is among the largest agriculture producing Counties in California (ranked fifth), with a gross income of more than $4.4 billion. The County's leading agriculture commodities include milk, almonds, cattle and calves, chickens, sweet potatoes, and tomatoes.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
B. <u>Agriculture Resources.</u> Will the Project:				
1) 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-agriculture?			✓	
2) Conflict with existing zoning for agricultural use or a Williamson Act contract?				✓
3) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?				✓
4) Cause development of non-agricultural uses within 1,000 feet of agriculturally zoned property (Right-to-Farm)?				✓

1) **Less Than Impact**

The project site is located within the City Limits of Merced. The California Department of Conservation prepares Important Farmland Maps through its Farmlands Mapping and Monitoring Program (FMMP). The system of classifying areas is based on soil type and use. According to the latest Merced County Important Farmlands Map, the project site is classified as "Farmland of Local Importance". The conversion of this land from a mostly undeveloped lot (not being used for agricultural purposes), zoned for commercial development, to a developed urban parcel was analyzed as part of the Environmental Impact Report for the *Merced Vision 2030 General Plan*. The development of single-

family homes on "Farmland of Local Importance" that is not being used for agricultural purposes is considered to have less-than-significant impact. Therefore, CEQA requires no further review across an arterial roadway.

2) **No Impact**

There are no Williamson Act contract lands in this area and the land is not being used for agricultural uses. Therefore, there is no impact.

3) **Less-Than-Significant Impact**

Refer to Item #1 above.

4) **No Impact**

The nearest land being used for farming is located north of the subject site, across Cardella Road. The proposed development would not affect farming operations as the farm site is located on a separate parcel.

C. Air Quality

SETTING AND DESCRIPTION

For additional information, see Appendix A at Attachment C for combined studies on Air Quality, Green House Gas Emissions, and Vehicle Miles Traveled.

The project site is in the San Joaquin Valley Air Basin (SJVAB), which includes the southern half of the Central Valley and is approximately 250 miles long and an average of 35 miles wide. The Coast Ranges, which have an average height of 3,000 feet, serve as the western border of the SJVAB. The San Emigdio Mountains, part of the Coast Ranges, and the Tehachapi Mountains, part of the Sierra Nevada, are both south of the SJVAB. The Sierra Nevada extends in a northwesterly direction and forms the air basin's eastern boundary. The SJVAB is mostly flat with a downward gradient to the northwest.

The climate of the SJVAB is heavily influenced by the presence of these mountain ranges. The mountain ranges to the west and south induce winter storms from the Pacific Ocean to release precipitation on the western slopes, producing a partial rain shadow over the valley. A rain shadow is defined as the region on the leeward side of a mountain where noticeably less precipitation occurs because clouds and precipitation on the windward side remove moisture from the air. In addition, the mountain ranges block the free circulation of air to the east and entrap stable air in the Central Valley for extended periods during the cooler months.

Winters in the SJVAB are mild and fairly humid, and summers are hot, dry, and typically cloudless. During the summer, a high-pressure cell is centered over the northeastern Pacific, resulting in stable meteorological conditions and steady northwesterly winds.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
C. <u>Air Quality.</u> Would the project:				
1) Conflict with or obstruct implementation of the applicable air quality plan?			✓	
2) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			✓	
3) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for O_3 precursors)?			✓	
4) Expose sensitive receptors to substantial pollutant concentrations?			✓	
5) Create objectionable odors affecting a substantial number of people?			✓	

Impacts are evaluated below on the basis of both State CEQA Guidelines Appendix G criteria and SJVAPCD significance criteria.

SJVAPCD's thresholds for determining environmental significance separate a project's short-term emissions from long-term emissions. The short-term emissions are related mainly to the construction phase of a project. For this project, the long-term emissions are related primarily to household trips.

1) **Less-than-Significant Impact**

   As part of the building permit review process, the applicant is required to consult with the San Joaquin Valley Air Pollution Control District (SJVAPCD) and is classified as nonattainment for ozone, PM10, and PM2.5. The SJVAPCD have applicable SIPs to address these nonattainment issues. The SJVAPCD has provided significance criteria (Table 2), which if a project's emissions are below these the significance criteria, the project is considered to not conflict with or obstruct implementation of the applicable air quality plan. As shown in Appendix A at Attachment C, the project's emissions do not exceed the SJVAPCD significance criteria.

2) **Less-than-Significant Impact**

   Construction of the project would require demolition, site preparation, grading, building/infrastructure, paving and architectural coating. As shown in Table 3, construction criteria emission would not exceed the SJVAPCD significance criteria

TABLE 3
MAXIMUM ANNUAL CONSTRUCTION EMISSIONS

Pollutant/Precursor	Construction Emissions	Significant Criteria	Exceed Significant
	Tons/Year		
co	1.66	100	No
l x	1.53	10	No
l OG	0.96	10	No
sox	0.003	27	No
Total PM10	0.27	15	Nc
Total PM2.5	0.16	15	Nc

Operation of the project would emit criteria pollution from area, energy, mobile, stationary, waste, and water sources. Table 4 on Appendix A at Attachment C shows the emissions from the operation of the project with 53 single-family homes. As shown in Table 4 project emissions would not exceed the SJVAPCD significance threshold. Therefore, operation of the project would not adversely impact regional air quality.

3) **Less-than-Significant Impact**

Although SJVAPCD does not have any quantitative cumulative significant criteria, air quality is cumulative in nature. CAAQS are predicated on past, present, and future emissions; therefore, if project-related emissions are found to have a less-than-significant impact in the near-term conditions, then cumulative impacts would also be less-than-significant. Project-related air quality impacts were found to be less- than-significant in the near-term conditions. The project would not adversely affect regional air quality in the future. Therefore, this impact would be less than significant.

4) **Less-than-Significant Impact**

The shortest distance between a project site and the nearest sensitive receptor (single family homes) is approximately 630 feet. Construction activities would be short term and intermittent. Although used during construction, heavy construction equipment would be the main source of pollutants during construction of the project. Given that heavy equipment would be used intermittently and during the day time hours, and given the short duration of construction activities in a given area and distance to the nearest sensitive receptor, exposure of sensitive receptors to substantial pollutant concentrations would not occur. Operation of the project would not result in substantial pollutant concentrations. This impact would be less than significant.

5) **Less-than-Significant Impact**

Given the use of heavy equipment during construction, the time of day heavy equipment would be operated, and the distance to the nearest sensitive receptor, the project would not emit objectionable odors that would be adversely affect a substantial number of people. Operation of the project would not emit odors. Therefore, construction and operation of the project would have a less-than-significant impact associated with odors. This impact would be less than significant.

D. Biological Resources

SETTING AND DESCRIPTION

The project site is located in northwest Merced, approximately three miles northwest of Downtown and a two and a half mile northeast of Highway 99. The development is surrounded by sites that are considered undeveloped (east, and west), with a single-family home subdivision (under construction) to the south, and agricultural uses to the north across Cardella Road outside City limits. The project site does not contain any creeks or other wetland areas.

The general project area is located in the Central California Valley eco-region (Omernik 1987). This eco-region is characterized by flat, intensively farmed plains with long, hot, dry summers and cool, wet winters (14-20 inches of precipitation per year). The Central California Valley eco-region includes the Sacramento Valley to the north, the San Joaquin Valley to the south, and ranges between the Sierra Nevada Foothills to the east and the Coastal Range foothills to the west. Nearly half of the eco-region is actively farmed, and about three-fourths of that farmed land is irrigated.

The biological resources evaluation, prepared as part of the *Merced Vision 2030 General Plan Program Environmental Impact Report* (EIR), does not identify the project area as containing any seasonal or non-seasonal wetland or vernal pool areas. Given the adjacent, built-up, urban land uses/agricultural uses and major roadways, no form of unique, rare or endangered species of plant and/or animal life could be sustained on the subject site.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
D. <u>Biological Resources.</u> Would the Project:				
1) Have a substantial adverse effect, either directly or through habitat modification, 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?				✓
2) 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?			✓	
3) 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?				✓
4) 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?				✓
5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			✓	
6) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				✓

1) **No Impact**

The proposed project would not have any direct effects on animal life by changing the diversity of species, number of species, reducing the range of any rare or endangered species, introducing any new species, or leading to deterioration of existing fish or wildlife habitat. Although the *Merced Vision 2030 General Plan* identifies several species of plant and animal life that exist within the City's urban boundaries, the subject site does not contain any rare or endangered species of plant or animal life.

2) **Less-than -Significant Impact**

The proposed project would not have any direct effects on riparian habitat or any other sensitive natural community. The City General Plan identifies Bear, Black Rascal, Cottonwood, Miles, Fahrens, and Owens Creeks within the City's growth area. The subject site is approximately 2.15 miles from Bear Creek, and approximately 0.33 miles for Fahrens Creek which are Waters of the U.S. under the jurisdiction of the U.S. Army Corps of Engineers (ACOE), the California Department of Fish and Wildlife (CDFW), and the Regional Water Quality Control Board. Any proposed "fill" of that waterway would be subject to permits from ACOE, CDFW, and the Regional Water Quality Control Board. No such "fill" or disturbance of the waterway is proposed as part of this development. The City's General Plan requires the preservation of the creek in its natural state. No riparian habitat identified in CDFW or USFW plans are present on the project site. Therefore, the Project would have a less-than-significant impact on riparian habitat.

3) **No Impact**

The project site would not have any direct effect on wetlands as no wetlands have been identified in the project area.

4) **No Impact**

The Project would not have any adverse effects on any resident or migratory fish or wildlife species or with established native resident migratory wildlife corridor, or impede the use of native wildlife nursery sites.

5) **Less Than Significant Impact**

The Project would not interfere with any local policies or ordinances protecting biological resources such as tree preservation policy or ordinance. The City requires the planting and maintenance of street trees along all streets and parking lot trees in parking lots but has no other tree preservation ordinances.

6) **No Impact**

The proposed project would not conflict with the provisions of a habitat conservation plan. There are no adopted Habitat Conservation Plans, Natural Conservation Community Plan, or other approved local, regional, or state Habitat Conservation Plan for the City of Merced or Merced County.

E. Cultural Resources

SETTING AND DESCRIPTION

The City of Merced area lies within the ethnographic territory of the Yokuts people. The Yokuts were members of the Penutian language family which held all of the Central Valley, San Francisco Bay Area, and the Pacific Coast from Marin County to near Point Sur.

Merced County was first explored by Gabriel Moraga in 1806, when he named the Merced River, "El Rio de Nuestra Senra de la Merced." Moraga's explorations were designed to locate appropriate sites for an inland chain of missions. Moraga explored the region again in 1808 and 1810.

Archaeology

Archaeological sites are defined as locations containing significant levels of resources that identify human activity. Very little archaeological survey work has been conducted within the City or its surrounding areas. Creeks, drainage, and sloughs exist in the northern expansion area of the City, and Bear Creek and Cottonwood Creek pass through the developed area. Archaeological sites in the Central Valley are commonly located adjacent to waterways and represent potential for significant archaeological resources.

Paleontological sites are those that show evidence of pre-human existence. They are small outcroppings visible on the earth's surface. While the surface outcroppings are important indications of paleontological resources, it is the geological formations that are the most important. There are no known sites within the project area known to contain paleontological resources of significance.

Historic Resources

In 1985, in response to community concerns over the loss of some of the City's historic resources, and the perceived threats to many remaining resources, a survey of historic buildings was undertaken in the City. The survey focused on pre-1941 districts, buildings, structures, and objects of historical, architectural, and cultural significance. The survey area included a roughly four square-mile area of the central portion of the City.

The National Register of Historic Places, the California Historical Landmarks List, and the California Inventory of Historic Resources identify several sites within the City of Merced. These sites are listed on the Merced Historical Site Survey and are maintained by the Merced Historical Society. There are no listed historical sites on the project site.

According to the environmental review conducted for the General Plan, there are no listed historical sites and no known locations within the project area that contain sites of paleontologic or archeological significance. The General Plan (Implementation Action SD-2.1.a) requires that the City utilize standard practices for preserving archeological materials that are unearthed during construction, as prescribed by the State Office of Historic Preservation.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
E. <u>Cultural Resources.</u> Would the Project:				
1) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?			✓	
2) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?			✓	
3) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			✓	
4) Disturb any human remains, including those interred outside of formal cemeteries?			✓	

1) **Less-than-Significant Impact**

The Project would not alter or destroy any known historic or archaeological site, building, structure, or object; nor would it alter or affect unique ethnic cultural values or restrict religious or sacred uses. According to the environmental review conducted for the General Plan, there are no listed historical sites and no known locations within the project area that contain sites of historical or archeological significance. The General Plan (Implementation Action SD-2.1.a) requires that the City utilize standard practices for preserving archeological materials that are unearthed during construction, as prescribed by the State Office of Historic Preservation.

2) **Less-than-Significant Impact**

The Project would not alter or destroy any known prehistoric or archaeological site, building, structure, or object; nor would it alter or affect unique ethnic cultural values or restrict religious or sacred uses. According to the environmental review conducted for the General Plan, there are no listed historical sites and no known locations within the project area that contain sites of historical or archeological significance. The General Plan (Implementation Action SD-2.1.a) requires that the City utilize standard practices for preserving archeological materials that are unearthed during construction, as prescribed by the State Office of Historic Preservation.

3) **Less-than-Significant Impact**

The Project would not alter or destroy any paleontological resource, site, or unique geological feature. According to the environmental review conducted for the General Plan, there are no listed historical sites and no known locations within the project area that contain sites of paleontological significance. The General Plan (Implementation Action SD-2.1.a) requires that the City utilize standard practices for preserving archeological materials that are unearthed during construction, as prescribed by the State Office of Historic Preservation.

4) **Less-than-Significant Impact**

The proposed project would not disturb any known human remains, including those interred outside of formal cemeteries; nor would it alter or affect unique ethnic cultural values or restrict religious or sacred uses. There are no known cemeteries in the project area. Excavation of the site would be needed to construct the proposed project, so it is possible that human remains would be discovered. However, Section 7050.5 of the California Health and Safety Code requires that if human remains are discovered during the construction phase of a development, all work must stop in the immediate vicinity of the find and the County Coroner must be notified. If the remains are determined to be Native American, the Coroner will notify the Native American Heritage Commission, which in turn will inform a most likely descendant. The descendant will then recommend to the landowner the appropriate method for the disposition of the remains and any associated grave goods. Additionally, the City's General Plan (Implementation Action SD-2.1.a) requires that the City utilize standard practices for preserving archeological materials that are unearthed during construction, as prescribed by the State Office of Historic Preservation. By following the requirements of the Health and Safety Code and

Compliance with the City's General Plan, this potential impact would be less than significant.

F. Geology and Soils

SETTING AND DESCRIPTION

The City of Merced is located approximately 150 miles southeast of San Francisco along the east side of the southern portion of the Great Valley Geomorphic Province, more commonly referred to as the San Joaquin Valley. The valley is a broad lowland bounded by the Sierra Nevada to the east and Coastal Ranges to the west. The San Joaquin Valley has been filled with a thick sequence of sedimentary deposits from Jurassic to recent age. A review of the geological map indicates that the area around Merced is primarily underlain by the Pleistocene Modesto and Riverbank Formations with Holocene alluvial deposits in the drainages. Miocene-Pliocene Mehrten and Pliocene Laguna Formation materials are present in outcrops on the east side of the SUDP/SOI. Modesto and Riverbank Formation deposits are characterized by sand and silt alluvium derived from weathering of rocks deposited east of the SUDP/SOI. The Laguna Formation is made up of consolidated gravel sand and silt alluvium, and the Mehrten Formation is generally a well consolidated andesitic mudflow breccia conglomerate.

Faults and Seismicity

A fault, or a fracture in the crust of the earth along which rocks on one side have moved relative to those on the other side, are an indication of past seismic activity. It is assumed that those that have been active recently are the most likely to be active in the future, although even inactive faults may not be "dead." "Potentially Active" faults are those that have been active during the past two million years or during the Quaternary Period. "Active" faults are those that have been active within the past 11,000 years. Earthquakes originate where movement or slippage occurs along an active fault. These movements generate shock waves that result in ground shaking.

Based on review of geologic maps and reports for the area, there are no known "active" or "potentially active" faults, or Alquist-Priolo Earthquake Fault Zones (formerly referred to as a Special Studies Zone) in the SUDP/SOI. In order to determine the distance of known active faults within 50 miles of the Site, the computer program EZ-FRISK was used in the General Plan update.

Soils

Soil properties can influence the development of building sites, including site selection, structural design, construction, performance after construction, and maintenance. Soil properties that affect the load-supporting capacity of an area include depth to groundwater, ponding, flooding, subsidence, shrink-swell potential, and compressibility.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
F. <u>Geology and Soils.</u> Would the Project:				
1) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
a) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?			✓	
b) Strong seismic ground shaking?			✓	
c) Seismic-related ground failure, including liquefaction?			✓	
d) Landslides?			✓	
2) Result in substantial soil erosion or loss of topsoil?			✓	
3) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?			✓	
4) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			✓	
5) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				✓

1) **Less than Significant Impact**

The project site is not located within a mapped fault hazard zone, and there is no record or evidence of faulting on the project site (City of Merced General Plan Figure 11.1). Because no faults underlie the project site, no people or structures would be exposed to substantial adverse effects related to earthquake rupture.

According to the City's *Merced Vision 2030 General Plan* EIR, the probability of soil liquefaction occurring within the City of Merced is considered to be a low to moderate hazard; however, a detailed geotechnical engineering investigation would be required for the project in compliance with the California Building Code (CBC).

There would be no exposure to any geological hazards in the project area.

Ground shaking of moderate severity may be expected to be experienced on the project site during a large seismic event. All building permits are reviewed to ensure compliance with the California Building Code (CBC). In addition, the City enforces the provisions of the Alquist Priolo Special Study Zones Act that limit development in areas identified as having special seismic hazards. All new structures shall be designed and built in accordance with the standards of the California Building Code.

APPLICABLE GENERAL PLAN GOALS AND POLICIES

The City's *Merced Vision 2030 General Plan* contains policies that address seismic safety.

Goal Area S-2: Seismic Safety:	
Goal: Reasonable Safety for City Residents from the Hazards of Earthquake and Other Geologic Activity	
Policies	
S-2.1	Restrict urban development in all areas with potential ground failure characteristics.

The Project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides.

Landslides generally occur on slopes of 15 percent or greater. The project site's topography is generally of slopes between 0 and 3 percent, which are considered insufficient to produce hazards other than minor sliding during seismic activity.

Therefore, no hazardous conditions related to seismic ground shaking would occur with the implementation of the Project. Additionally, the implementation of the project would not lead to offsite effects related to hazards related to seismic groundshaking, nor would any existing off-site hazards be exacerbated.

2) **Less-Than-Significant Impact**

Construction associated with the proposed project could result in temporary soil erosion and the loss of topsoil due to construction activities, including clearing, grading, site preparation activities, and installation of the proposed buildings and other improvements. The City of Merced enforces a Storm Water Management Program in compliance with the Federal Clean Water Act. All construction activities are required to comply with the City's Erosion and Sediment Control Ordinance (MMC §15.50.120.B), including the implementation of Best Management Practices (BMPs) to limit the discharge of sediment.

3) **Less Than Significant Impact**

The City of Merced is located in the Valley area of Merced County and is, therefore, less likely to experience landslides than other areas in the County. The probability of soil liquefaction actually taking place anywhere in the City of Merced is considered to be a low hazard. Soil types in the area are not conducive to liquefaction because they are either too

coarse or too high in clay content. According to the *Merced Vision 2030 General Plan* EIR, no significant free face failures were observed within this area and the potential for lurch cracking and lateral spreading is, therefore, very low within this area.

4) **Less-Than-Significant**

Expansive soils are those possessing clay particles that react to moisture changes by shrinking (when they dry) or swelling (when they become wet). Expansive soils can also consist of silty to sandy clay. The extent of shrinking and swelling is influenced by the environment, extent of wet or dry cycles, and by the amount of clay in the soil. This physical change in the soils can react unfavorably with building foundations, concrete walkways, swimming pools, roadways, and masonry walls.

Implementation of General Plan Policies, adherence to the Alquist-Priolo Act, and enforcement of the California Building Code (CBC) Standards would reduce the effect of this hazard on new buildings and infrastructure associated with the proposed development. This would reduce potential impacts to a less-than-significant level.

5) **No Impact**

The project site would not 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. However, the proposed project would be served by the City's sewer system. No new septic systems are allowed within the City Limits, and any existing systems will need to be removed upon demolition of the current home on the site.

G. Hazards and Hazardous Materials

SETTING AND DESCRIPTION

Hazardous Materials

A substance may be considered hazardous due to a number of criteria, including toxicity, ignitability, corrosivity, or reactivity. The term "hazardous material" is defined in law as any material that, because of quantity, concentration, or physical, or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment.

Wildland and Urban Fire Hazards

Both urban and wildland fire hazard potential exists in the City of Merced and surrounding areas, creating the potential for injury, loss of life, and property damage. Urban fires primarily involve the uncontrolled burning of residential, commercial, or industrial structures due to human activities. Wildland fires affect grassland, brush or woodlands, and any structures on or near these fires. Such fires can result from either human-made or natural causes.

Urban fires comprise the majority of fires in the City of Merced. The site is adjacent to undeveloped agricultural land, which could be a source for a wildland fire. However, the City of Merced Fire Department has procedures in place to address the issue of wildland fires, so no additional mitigation would be necessary.

Airport Safety

The City of Merced is impacted by the presence of two airports-Merced Regional Airport, which is in the southwest corner of the City, and Castle Airport (the former Castle Air Force Base), located approximately eleven miles northwest of the subject site.

The continued operation of the Merced Regional Airport involves various hazards to both flight (physical obstructions in the airspace or land use characteristics which affect flight safety) and safety on the ground (damage due to an aircraft accident). Growth is restricted around the Regional Airport in the southwest corner of the City due to the noise and safety hazards associated with the flight path.

Castle Airport also impacts the City. Portions of the northwest part of the City's SUDP/SOI and the incorporated City are within Castle's safety zones. The primary impact is due to noise (Zones C and D), though small areas have density restrictions (Zone B2). The military discontinued operations at Castle in 1995. One important criterion for determining the various zones is the noise factor. Military aircraft are designed solely for performance, whereas civilian aircraft have extensive design features to control noise.

Potential hazards to flight include physical obstructions and other land use characteristics that can affect flight safety, which include: visual hazards such as distracting lights, glare, and sources of smoke; electronic interference with aircraft instruments or radio communications; and uses which may attract flocks of birds. In order to safeguard an airport's long-term usability, preventing encroachment of objects into the surrounding airspace is imperative.

According to the Merced County Airport Land Use Compatibility Plan, the project site is not located in any restricted safety zones for either airport, and no aircraft overflight, air safety, or noise concerns are identified.

Railroad

Hazardous materials are regularly shipped on the BNSF and SP/UP Railroad lines that pass through the City. While unlikely, an incident involving the derailment of a train could result in the spillage of cargo from the train in transporting. The spillage of hazardous materials could have devastating results. The City has little to no control over the types of materials shipped via the rail lines. There is also a safety concern for pedestrians along the tracks and vehicles utilizing at-grade crossings. The design and operation of at-grade crossings allows the City some control over rail-related hazards. Ensuring proper gate operation at the crossings is the most effective strategy to avoid collision and possible derailments. The Burlington Northern Santa Fe Railroad is approximately 2 miles from the site and Union Pacific Railroad is approximately 3 miles away.

Public Protection and Disaster Planning

Hospitals, ambulance companies, and fire districts provide medical emergency services. Considerable thought and planning have gone into efforts to improve responses to day-to-day emergencies and planning for a general disaster response capability.

The City's Emergency Plan and the County Hazardous Waste Management Plan both deal with detailed emergency response procedures under various conditions for hazardous material spills. The City also works with the State Department of Health Services to establish cleanup plans and to monitor the cleanup of known hazardous waste sites within the City.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
G. <u>Hazards and Hazardous Materials.</u> Would the Project:				
1) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			✓	
2) 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?			✓	
3) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			✓	
4) 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?			✓	
5) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?			✓	
6) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?			✓	
7) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			✓	
8) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			✓	

1) **Less-Than-Significant Impact**

Construction activities associated with the proposed project would involve the use, storage, transport, and disposal of oil, gasoline, diesel fuel, paints, solvents, and other hazardous materials. The Project would be required to adhere to all applicable federal and state health

and safety standards. Construction activity must also be in compliance with the California Occupational Safety and Health Administration regulations (Occupational Safety and Health Act of 1970). Compliance with these requirements would reduce the risk of hazards to the public to a less-than-significant level.

2) **Less-Than-Significant Impact**

Construction on the project site would be reviewed for the use of hazardous materials at the building permit stage. Implementation of Fire Department and Building Code regulations for hazardous materials, as well as implementation of federal and state requirements, would reduce any risk caused by a future use on the site from hazardous materials to a less than significant level.

APPLICABLE GENERAL PLAN GOALS AND POLICIES

The City of Merced *Vision 2030 General Plan* contains policies that address hazardous materials.

Goal Area S-7: Hazardous Materials	
Goal: Hazardous Materials Safety for City Residents	
Policies	
S-2.1	Prevent injuries and environmental contamination due to the uncontrolled release of hazardous materials.
Implementing Actions:	
7.1.a	Support Merced County in carrying out and enforcing the Merced County Hazardous Waste Management Plan.
7.1.b	Continue to update and enforce local ordinances regulating the permitted use and storage of hazardous gases, liquids, and solids.
7.1.d	Provide continuing training for hazardous materials enforcement and response personnel.

3) **Less-Than-Significant Impact**

The nearest school is Rivera Elementary and Middle Schools, located on the northeast corner of Buena Vista and R Street. The subject site is within 1.2 miles of this school. There are no other existing or proposed schools within ¼ mile of the site. Given the California Building Code protective measures required during the construction process, this developments impacts would be less than significant. Post-construction, the site would be used for dwelling purposes only.

4) **Less-Than-Significant Impact**

No project actions or operations would result in the release of hazardous materials that could affect the public or the environment, and no significant hazard to the public or the environment would result with project implementation. This potential impact is less than significant.

5) **Less-Than-Significant Impact**

The project site is located over four miles from the Merced Regional Airport. The approximate 10-acre site is surrounded by existing residential uses or reserved for residential purposes, except for north across Cardella Road which is in County jurisdiction with a General Plan designation of Office Commercial. Given the land use designation and surrounding land use, the potential impact is less than significant.

6) **Less-Than-Significant Impact**

The closest private airstrip to the site is approximately 15 miles away. There would be no hazard to people living or working on the project site.

7) **Less-Than-Significant Impact**

The proposed project will not adversely affect any adopted emergency response plan or emergency evacuation plan. No additional impacts would result from the development of the project area over and above those already evaluated by the EIR prepared for the *Merced Vision 2030 General Plan.*

APPLICABLE GENERAL PLAN GOALS AND POLICIES:
The *Merced Vision 2030 General Plan* contains policies that address disaster preparedness.

Goal Area S-1: Disaster Preparedness	
Goal: General Disaster Preparedness	
Policies	
S-1.1	Develop and maintain emergency preparedness procedures for the City.
Implementing Actions:	
1.1.a	Keep up-to-date through annual review the City's existing Emergency Plan and coordinate with the countywide Emergency Plan.
1.1.b	Prepare route capacity studies and determine evacuation procedures and routes for different types of disasters, including means for notifying residents of a need to evacuate because of a severe hazard as soon as possible.
7.1.d	Provide continuing training for hazardous materials enforcement and response personnel.

8) **Less-Than-Significant Impact**

According to the EIR prepared for the *Merced Vision 2030 General Plan*, the risk for wildland fire within the City of Merced is minimal. According to the Cal Fire website, the Merced County Fire Hazard Severity Zone Map shows the project site is designated as a "Local Responsibility Area" (LRA) with a Hazard Classification of "LRA Unzoned."

The City of Merced Fire Department is the responsible agency for responding to fires at the subject site. The project site is served by Station #53 located on 800 Loughborough Drive (approximately 1.75 miles from the project site).

The site is not near agricultural land that could be susceptible to wildland fires. The City of Merced Fire Department has procedures in place to address the issue of wildland fires, so no additional mitigation would be necessary. This potential impact is less than significant.

H. Hydrology and Water Quality

SETTING AND DESCRIPTION

Water Supplies and Facilities

The City's water supply system consists of 22 wells and 14 pumping stations equipped with variable speed pumps that attempt to maintain 45 to 50 psi (pounds per square inch) nominal water pressure. The City is required to meet State Health pressure requirements, which call for a minimum of 20 psi at every service connection under the annual peak hour condition and maintenance of the annual average day demand plus fire flow, whichever is stricter. The project site could be serviced by the extensions of water lines in El Redondo Drive, Horizons Avenue, and new lines installed in Gaucho Drive.

Storm Drainage/Flooding

In accordance with the adopted *City of Merced Standard Designs of Common Engineering Structures*, percolation/detention basins are designed to temporarily collect runoff so that it can be metered at acceptable rates into canals and streams that have limited capacity. The project would be required to adhere to the Post Construction Standards for compliance with the City's Phase II MS4 permit issued by the state of California.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
H. <u>Hydrology and Water Quality.</u> Would the Project:				
1) Violate any water quality standards or waste discharge requirements?			✓	
2) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			✓	
3) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or offsite?			✓	

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
4) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite?			✓	
5) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?			✓	
6) Otherwise substantially degrade water quality?			✓	
7) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?			✓	
8) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?			✓	
9) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?			✓	
10) Inundation by seiche, tsunami, or mudflow?			✓	

1) **Less-Than-Significant Impact**

The Project is not expected to violate any water quality standards or waste discharge requirements during construction or operation. In addition to compliance with standard construction provisions, the Project shall be required to comply with the Merced Storm Water Master Plan and the Storm Water Management Plan, and obtain all required permits for water discharge. During project operations, the City has developed requirements to minimize the impact to storm water quality caused by development and redevelopment. The increase in impervious areas caused by development can cause an increase in the type and quantity of pollutants in storm water runoff. Prior planning and design to minimize pollutants in runoff from these areas is an important component to storm water quality management. These standards are set forth in the City's Post-Construction Standards Plan and provide guidance for post-construction design measures to ensure that storm water quality is maintained. Compliance with these requirements and permits would reduce the impact to a less than significant level.

APPLICABLE GENERAL PLAN GOALS AND POLICIES:
The *Merced Vision 2030 General Plan* contains policies that address Water Quality and Storm Drainage.

Goal Area P-5: Storm Drainage and Flood Control	
Goal: An Adequate Storm Drainage Collection and Disposal System in Merced	
Policies	
P-5.1	Provide effective storm drainage facilities for future development.
P-5.2	Integrate drainage facilities with bike paths, sidewalks, recreation facilities, agricultural activities, groundwater recharge, and landscaping.

Implementing Actions:	
5.1.a	Continue to implement the City's Storm Water Master Plan and the Storm Water Management Plan and its control measures.
5.1.c	Continue to require all development to comply with the Storm Water Master Plan and any subsequent updates.

2) **Less-Than-Significant Impact**

The City of Merced is primarily dependent on groundwater sources that draw from the San Joaquin aquifer. The City has 22 active well sites with one under construction, and 14 pumping stations, which provide service to meet peak hour urban level conditions and the average daily demand plus fire flows.

According to the City of Merced Water Master Plan, the estimated average peak water demand for the City is 23.1 mgd.

The proposed project is estimated to use approximately 3,000 gallons of water per day. This would represent 0.0080% of the estimated average daily water consumption. Although development of the site would restrict onsite recharge where new impervious surface areas are created, all alterations to groundwater flow would be captured and routed to the storm water percolation ponds or pervious surfaces with no substantial net loss in recharge potential anticipated. This reduces this impact to a less-than-significant level.

3) **Less-Than-Significant Impact**

The proposed project would result in modifications to the existing drainage pattern on the site. If required by the City's Engineering Department, the project will be designed to capture all surface water runoff onsite and then drain into the City's existing storm drainage system.

The project site is currently vacant and consists of pervious surfaces. The proposed project would create impervious surfaces over a large portion of the project site, thereby preventing precipitation from infiltrating and causing it to pond or runoff. However, stormwater flows would be contained onsite and piped or conveyed to the City's stormwater system, there would be no potential for increased erosion or sedimentation.

Developed storm drainage facilities in the area are adequate to handle this minor increase in flows. The Project would not result in a substantial alteration of drainage in the area, and no offsite uses would be affected by the proposed changes. All potential impacts are less than significant.

4) **Less-Than-Significant Impact**

The proposed project would alter the existing drainage pattern of the site, but not in a manner that would result in flooding. The site is currently mostly vacant and any construction on the site would alter the drainage pattern and reduce the absorption capability of the site. There are no streams or rivers that would be affected. All storm runoff would be captured onsite and conveyed through pipes to the City's stormwater system. Any changes to the site would drain into the City's existing storm drain system which would prevent any onsite or offsite flooding. This potential impact is less than significant.

5) **Less-Than-Significant Impact**

Construction on the site will drain into the City's existing storm drain system. The developer would be required to provide documentation showing the capacity exists within the existing lines and basin to serve this project.

6) **Less-Than-Significant Impact**

The proposed project would not substantially degrade water quality. The proposed project would be served by the City's water system and all water runoff will be contained onsite then directed out to the City's storm drain system. The construction of the project would not affect the water quality and would not degrade water quality in the area. This potential impact is less than significant.

7) **Less-Than-Significant Impact**

The project would be required to comply with flood-related regulations, including submitting a flood elevation certificate to the City's Building Department during the building permit process. This potential impact is less than significant.

8) **Less-Than-Significant Impact**

The Flood Insurance Rate Map shows the project within a Zone "X," limited flood hazard area. As required with all new construction, the project would be required to comply with all requirements of the California Building Code (CBC) to ensure construction of the buildings meets the minimum requirements set forth by the CBC and the requirements of Flood Zone "X." Therefore, there are no significant impacts.

9) **Less-Than-Significant Impact**

The proposed project would not expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam. According to Figure 11.3 of the *Merced Vision 2030 General Plan,* the project site is inside the inundation area of the Yosemite Lake Dam, but not the Bear Reservoir Dam. In the case of dam failure, the General Plan Safety Element addresses local hazard response procedures. This potential impact is less than significant.

10) **Less-Than-Significant Impact**

The proposed project is located approximately 80 miles from the Pacific Ocean, distant from any large lakes, and not within the inundation zones for Lake Yosemite or Bear Reservoir at an elevation ranging from approximately 173 feet above MSL. According to

the City's General Plan Safety Element, the City of Merced is not subject to inundation by tsnami, seiche, or mudflow. This potential impact is less than significant.

I. Land Use and Planning

SETTING AND DESCRIPTION

The project site is located within the City Limits of Merced and within its Specific Urban Development Plan and Sphere of Influence (SUDP/SOI).

SURROUNDING USES

Refer to Page 2 of this Initial Study and the map at Attachment A for the surrounding land uses.

Current Use

The project site is approximately 10 acres of mostly undeveloped land located on the south side of Cardella Road, between El Redondo Drive and Horizon Avenue.

The project site is currently within a Planned Development with General Plan designations of Office Commercial (CO) and Neighborhood Commercial (CN), which would allow commercial uses such as, but not limited to, retail, grocery stores, restaurants, personal services, medical, and professional services. The proposed land use amendment would convert the site from commercial to residential with a residential density of approximately 4.95 units per acre, which is within the allowable range of 2 to 6 dwelling units per acre for the proposed General Plan designation of Low Density Residential (LDR), a change from commercial.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. <u>Land Use and Planning.</u> Would the Project:				
1) Physically divide an established community?			✓	
2) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			✓	
3) Conflict with any applicable habitat conservation plan or natural community conservation plan?				✓

1) **Less-Than-Significant Impact**

The project site is within the boundaries of the Merced City Limits. It would not physically divide the community as it is already part of the City. The extension of El Redondo Drive

and Horizons Avenue would improve connectivity north to Cardella Road with a direct access to the northern portion of Merced instead of having to backtrack south to Yosemite Avenue to then travel north to access Cardella Road. This potential impact is less than significant.

2) **Less-Than-Significant Impact**

The project would change the zoning from commercial to residential, for a site that is surrounded by residential zones and an existing residential subdivision to the south. The current designation of commercial was implemented in order to provide an "Urban Village" in this area. Without the commercial, the surrounding Village Residential is no longer necessary. However, the proposal would be compatible with surrounding residential zones, therefore, the impact is less than significant.

3) **No Impact**

No Habitat Conservation Plans or Natural Community Conservation Plans have been adopted by the City of Merced. Therefore, there would be no impact.

J. Mineral Resources

SETTING AND DESCRIPTION

The City of Merced does not contain any mineral resources that require managed production according to the State Mining and Geology Board. Based on observed site conditions and review of geological maps for the area, economic deposits of precious or base metals are not expected to underlie the City of Merced or the project site. According to the California Geological Survey, Aggregate Availability in California - Map Sheet 52, minor aggregate production occurs west and north of the City of Merced, but economic deposits of aggregate minerals are not mined within the immediate vicinity of the SUDP/SOI. Commercial deposits of oil and gas are not known to occur within the SUDP/SOI or immediate vicinity.

According to the Merced County General Plan Background Report (June 21, 2007), very few traditional hard rock mines exist in the County. The County's mineral resources are almost all sand and gravel mining operations. Approximately 38 square miles of Merced County, in 10 aggregate resource areas (ARA), have been classified by the California Division of Mines and Geology for aggregate. The 10 identified resource areas contain an estimated 1.18 billion tons of concrete resources with approximately 574 million tons in Western Merced County and approximately 605 million tons in Eastern Merced County. Based on available production data and population projections, the Division of Mines and Geology estimated that 144 million tons of aggregate would be needed to satisfy the projected demand for construction aggregate in the County through the year 2049. The available supply of aggregate in Merced County substantially exceeds the current and projected demand.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
J. <u>Mineral Resources.</u> Would the Project:				
1) 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?				✓
2) 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?				✓

1) **No Impact**

No mineral resources occur within City Limits, SUDP/SOI, or within the project site, so no impact.

2) **Less-Than-Significant Impact**

See #1 above.

K. Noise

SETTING AND DESCRIPTION

Potential noise impacts of the proposed project can be categorized as those resulting from construction and those from operational activities. Construction noise would have a short-term effect; operational noise would continue throughout the lifetime of the project. Construction associated with the development of the project would increase noise levels temporarily during construction. Operational noise associated with the development would occur intermittently with the continued operation of the proposed project.

Some land uses are considered more sensitive to noise levels than other uses. Sensitive land uses can include residences, schools, nursing homes, hospitals, and some public facilities, such as libraries. The noise level experienced at the receptor depends on the distance between the source and the receptor, the presence or absence of noise barriers and other shielding devices, and the amount of noise attenuation (lessening) provided by the intervening terrain. For line sources such as motor or vehicular traffic, noise decreases by about 3.0 to 4.5A –weighted decibels (dBA) for every doubling of the distance from the roadway.

Noise from Other Existing Sources

Vehicular noise from Cardella Road, El Redondo Drive, and Horizon Avenue would be the primary existing noise source at the project site. The nearest railroad corridor is approximately 2.25 miles from the project site. The site is surrounded by various residential properties that

generate operational noise on a daily basis. The are no industrial uses located within 1,000 feet of the project site.

According to the *Merced Vision 2030 General Plan,* noise exposure not exceeding 45 dB is considered to be a "normally acceptable" noise level for residential uses.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
K. <u>Noise.</u> Would the Project result in:				
1) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			✓	
2) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			✓	
3) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			✓	
4) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			✓	
5) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			✓	
6) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?			✓	

1) **Less Than Significant**

<u>Construction Noise</u>

Construction of the Project would temporarily increase noise levels in the area during the construction period. Therefore, the noise from construction may be steady for a few months and then cease all together. Construction activities, including site preparation and grading, building construction, and sidewalk and street improvements would be considered an intermittent noise impact throughout the construction period. These activities could

result in various effects on sensitive receptors, depending on the presence of intervening barriers or other insulating materials. The effects will be short term and would result in a less than significant impact.

Operational Noise

Operational noise would be the main noise source expected from the proposed project. Traffic coming to and from the project site would generate the most noise. However, the site is surrounded by other residential uses, which are generally expected to generate similar amount of noise as the proposed development. Implementation of the Project would not lead to continued offsite effects related to noise generated by the Project. Given the noise from similar low impact zones near the subject site, this potential impact is less than significant.

2) **Less-Than-Significant Impact**

Implementation of the proposed project would not result in the generation of any ground borne vibration or noise. This is a less-than-significant impact.

3) **Less-Than-Significant Impact**

As noted above, limited operational noise would be expected from the proposed residential project. Any development on the site could be considered an increase in the ambient noise, given the fact that the site is currently vacant. However, as explained previously, the site is within a residential area and surrounded by residential properties. The potential impacts of this project in the vicinity are less than significant.

4) **Less-Than-Significant Impact**

The project construction will cause temporary and periodic increases in the ambient noise levels. However, because the construction noise will only be temporary and the increase in noise generated from the site would be minimal, the impacts are less than significant.

5) **Less-Than-Significant Impact**

The project site is located within 4 miles from active areas of the Merced Regional Airport and approximately 10 miles from the Castle Airport. The airport has a flight patterns that goes northwest/southeast, which most likely does not fly directly over the project site, however, given the distance between the project site and the airports, there should be less-than-significant impact. Therefore, no population working or living at the site would be exposed to excessive levels of aircraft noise. This potential impact is less than significant.

6) **Less-Than-Significant Impact**

See Section #5 above.

L. Population and Housing

SETTING AND DESCRIPTION

The Project includes the construction of 53 single-family residential units on 53 lots.

Expected Population and Employment Growth

According to the State Department of Finance population estimates for 2022, the City of Merced's population was estimated to be 89,058. Population projections estimate that the Merced SUDP area will have a significant population of 159,900 by the Year 2030.

According to the *Merced Vision 2030 General Plan*, the City of Merced is expected to experience significant population and employment growth by the Year 2030.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
L. <u>Population and Housing.</u> Would the Project:				
1) Induce substantial population growth in an area either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			✓	
2) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?			✓	
3) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?			✓	

1) **Less-Than-Significant Impact**

The project site has a General Plan designation of Office Commercial and Neighborhood Commercial which allows a residential density up to 36 dwelling units per acre with a conditional use permit. The proposed land use change of Low Density Residential which would allow between 2 and 6 dwelling units per acre, 16% of the number units that can be constructed with the current land use designations. Based on the reduced density, this potential impact would be less than significant.

2) **Less-Than-Significant Impact**

The project site is currently undeveloped and would be considered in-fill development for 53 single-family homes, resulting in less-than-significant impact.

3) **No Impact**

The project site is undeveloped on this approximate 10-acre site. No housing would be displaced as a result of this project. Therefore, the impact is less than significant.

M. Public Services

SETTING AND DESCRIPTION

Fire Protection

The City of Merced Fire Department provides fire protection, rescue, and emergency medical services from five fire stations throughout the urban area. Fire Station #53 is located at 800 Loughborough Drive, approximately 1.5 miles from the site. This Station would serve the proposed project.

Police Protection

The City of Merced Police Department provides police protection for the entire City. The Police Department employs a mixture of sworn officers, non-sworn officer positions (clerical, etc.), and unpaid volunteers (VIP). The service standard used for planning future police facilities is approximately 1.37 sworn officers per 1,000 population, per the Public Facilities Financing Plan.

Schools

The public school system in Merced is served by three districts: 1) Merced City School District (elementary and middle schools); 2) Merced Union High School District (MUHSD); and, 3) Weaver Union School District (serving a small area in the southeastern part of the City with elementary schools). The districts include various elementary schools, middle (junior high) schools, and high schools.

As the City grows, new schools will need to be built to serve our growing population. According to the Development Fee Justification Study for the MUHSD, Merced City Schools students are generated by new development at the following rate:

Table 6 Student Generation Rates

Commercial/Industrial Category	Elementary (K-8) (Students per 1,000 sq.ft.)	High School (9-12) (Students per 1,000 sq.ft.)
Retail	0.13	0.038
Restaurants	0.00	0.157
Offices	0.28	0.048
Services	0.06	0.022
Wholesale/Warehouse	0.19	0.016
Industrial	0.30	0.147
Multi-Family	0.559 (per unit)	0.109 (per unit)

Based on the table above, the 45 units would generate 30 K-8 students and 6 high school students.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
M. <u>Public Services.</u> Would the Project:				
1) 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 following public services:				
a) Fire Protection?			✓	
b) Police Protection?			✓	
c) Schools?			✓	
d) Parks?			✓	
e) Other Public Facilities?			✓	

1) **Less Than Significant**

a) Fire Protection

The project site would be served by Fire Station #53, located at 800 Loughborough Drive (approximately 1.5 mile from the project site). The response from this station would meet the desired response time of 4 to 6 minutes, citywide, 90 percent of the time, within the financial constraints of the City. The proposed change in land use designation would not affect fire protection services, and no new or modified fire facilities would be needed. Any changes to the building or site would be required to meet all requirements of the California Fire Code and the Merced Municipal Code. Compliance with these requirements would reduce any future impacts to a less than significant level.

At the time a building permit is issued, the developer would be required to pay Public Facility Impact Fees (PFIF). A portion of this fee goes to cover the city's costs for fire protection such as fire stations, etc. In addition, the developer would be required to annex into the City's Community Facilities District for Services. This would result in an assessment paid with property taxes in which a portion of the tax would go to pay for fire protection services. Compliance with all Fire, Building, and Municipal Code requirements as well as payment of the Public Facility Impact Fees, and annexation into the City's CFD for services would reduce any potential impacts to a less than significant level.

b) **Police Protection**

The site would be served by the City Police Department. The development of the vacant project site could result in more calls to the site. Implementation of the proposed project would not require any new or modified police facilities.

The same requirements for paying Public Facility Impact Fees and annexation into the City's Community Facilities District for Services would apply with a portion of the fees and taxes collected going toward the costs for police protection. Therefore, this potential impact is reduced to a less-than-significant level.

c) Schools

The project site is located within the boundaries of the Merced City School District and Merced Union High School District. Based on the table and discussion provided in the "Settings and Description" section above, the proposed development would likely generate additional students to the school system. As appropriate, the developer would be required to pay all fees due under the Leroy F. Greene School Facilities Act of 1988. Once these fees are paid, the satisfaction of the developer of his statutory fee under California Government Code §65995 is deemed "full and complete mitigation" of school impacts. This potential impact is less than significant**.**

d) Parks

Rudolph Joseph Merino Park is located 0.50 miles south of the site. This housing development would slightly increase the use of neighborhood or regional parks.

Payment of the fees required under the Public Facilities Financing Program (PFIF) as described above would be required at time of building permit issuance to help fund future parks and maintenance of existing parks would be required at the building permit stage. The proposed amenities onsite and the payment of fees would reduce this potential impact to less than significant.

e) Other Public Facilities

The development of the Project could impact the maintenance of public facilities and could generate impacts to other governmental services. Payment of the fees required under the Public Facilities Financing Program (PFIF) as described above would mitigate these impacts to a less than significant level.

N. Recreation

SETTING AND DESCRIPTION

The City of Merced has a well-developed network of parks and recreation facilities. Several City parks and recreation facilities are located within a one-mile radius of the project site.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
N. <u>Recreation.</u> Would the Project:				
1) Increase the use of neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			✓	
2) 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?				✓

1) **Less the Significant Impact**

Development of the Project may increase the use of neighborhood or regional parks. However, payment of the required development fees at the building permit stage along with the amenities on site would reduce the potential impacts to a less than significant level.

2) **No Impact**

The Project is not responsible for the construction or expansion of any recreational facilities.

O. Transportation/Traffic

SETTING AND DESCRIPTION

For additional information see Appendix A at Attachment C for combined studies on Air Quality, Green House Gas Emissions, and Vehicle Miles Traveled.

Roadway System

The project site is located in northwest Merced, approximately three miles north of Downtown and two miles north of Highway 99. The project site consists of an undeveloped lot totaling approximately 10.70 acres. The project site is bounded by collector roads (north-south bound), El Redondo Drive and Horizon Avenue, and the nearest east-west road in Cardella Road, being a Major Arterial Road designed to carry large volumes of traffic traversing through a large portion of the community. Yosemite Avenue connects with Highway 59 and R Street which link with Highway 99 that connects Merced with other regional communities throughout the State. Cardell Road will do so in the future.

Transit Service

The Transit Joint Powers Authority for Merced County has jurisdiction over public transit in Merced County and operates The Bus. The Bus provides transportation for residents traveling

within Merced and outside the City within neighboring communities such as Planada, Atwater, and Livingston.

Vehicle Miles Traveled

Senate Bill (SB) 743 directs the Governor's Office of Planning and Research (OPR) to develop new guidelines for assessing transportation-related impacts that "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Public Resources Code Section 21099[b][1]). These new guidelines will replace automobile delay, as described through level of service (LOS), with more appropriate criteria and metrics based on travel demand, such as "vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated" (Public Resources Code Section 21099[b][1]). The State CEQA Guidelines have been amended to include guidance for measuring travel demand and to recommend that delays related to congestion no longer be considered a significant impact under CEQA (OPR 2016).

Vehicle Miles Traveled Analysis

Calculation of VMT shown in the CalEEMod output files in Appendix A, Section 4.0 Operational Detail – Mobile, 4.2 Trip Summary Information shows that the project's annual VMT is 1,906,497 miles. This is unmitigated VMT and does not show reduction for location of the project to transportation, schools, connectivity, employment centers, and shopping.

The project is located within 0.7 mile of the R Street and Pacific Drive bus stop (M2, Merced R Street Route). The project site is located within 0.9 miles from the University of California Merced and 1.2 miles from Rivera Intermediate and Elementary Schools. Merino Park is located approximately 0.55 miles from the project site. The project is located within three miles of the city center where the majority of employers are located. Shopping centers and markets are located within two miles of the project site and throughout Merced.

The CalEEMod trip generation (Institute of Transportation Engineers (ITE), *Trip Generation Manual, 10th Edition)* provides for trip lengths of for home to work as 10.8-mile, home to shop as 7.3-miles, and home to other (schools, recreation) as 7.5-miles. As shown above the distance to from home to work, home to shopping, and home to schools is less than half these default distance provided by the ITE; therefore, given the location of the project, it is expected to reduce VMT by more 50 percent, resulting is a project VMT of 953,518 miles or a 50 percent reduction in the project's VMT.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
O. <u>Transportation/Traffic.</u> Would the project:				
1) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?			✓	
2) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3 subdivision (b)?			✓	
3) Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?			✓	
4) Result in inadequate emergency access?			✓	

1) **Less-than-Significant Impact**

The CalEEMod trip generation (Institute of Transportation Engineers (ITE), *Trip Generation Manual, 10th Edition)* provides for trip lengths of for home to work as 10.8-mile, home to shop as 7.3-miles, and home to other (schools, recreation) as 7.5-miles. As shown above the distance to from home to work, home to shopping, and home to schools is less than half these default distance provided by the ITE; therefore, given the location of the project, it is expected to reduce VMT by more 50 percent, resulting is a project VMT of 953,518 miles or a 50 percent reduction in the project's VMT. There are no specific planned transit, bicycle, or pedestrian facilities for this site – so the development would not be eliminating or impact any of the infrastructure required for those modes of transportation. This would result in a less than significant impact.

2) **Less-than-Significant Impact**

Per CEQA Guidelines Section 15064.3, alternative modes of transportation are being assessed. The Amtrak (passenger train service) is located within 3 miles south providing services to the greater California area and connections to travel across the county. The closest airport is Merced Regional Airport, located approximately 3 miles to the east. The project is located within 0.7 mile of the R Street and Pacific Drive bus stop (M2, Merced

R Street Route). The project site is located within 0.9 miles from the University of California Merced and 1.2 miles from Rivera Intermediate and Elementary Schools. Merino Park is located approximately 0.55 miles from the project site. The project is located within three miles of the city center where the majority of employers are located. Shopping centers and markets are located within two miles of the project site and throughout Merced.

The project would not result in a change in-air traffic patterns, including air traffic associated with any airports. The increase in density would result in slightly more vehicle miles traveled to surrounding uses.

3) **Less-than-Significant Impact**

The project site is surrounded by developed subdivisions that are missing road connections. The proposed subdivision would extend some of the existing roads in El Redondo Drive and Horizon Avenue installing missing infrastructure along these roads up to Cardella Road. The proposal does not require changes to the existing street network.

The project site is surrounded by a new single-family home subdivision to the south, and undeveloped but entitled parcels that are missing road connections. The proposed subdivision would extend some of the existing roads in El Redondo Drive and Horizon Avenue, and install missing infrastructure Cardella Road and the new Gaucho Drive. The proposal does not require significant changes to the existing street network. Therefore, less than significant impact would occur.

4) **Less-than-Significant Impact**

The subject site is an approximate 10.76-acre parcel on mostly undeveloped land in a neighborhood with a General Plan designation of Village Core Residential to the east and west of the subject site (minimum 10 dwelling units per acre) and to the south with the same designation with a housing subdivision currently under construction (Sage Creek). There is currently a gap missing infrastructure of roads and utilities between future developments to the east and west, and connectivity with various subdivisions immediately to the south up to Cardella Road where currently there is no direct vehicle access. This entire area has a General Plan designation of Office Commercial (CO)/Neighborhood Commercial (CN) which would allow multifamily with a conditional use permit at a density of 12 to 36 dwelling units pe acre. Approving this subdivision would connect the future east and west developments via road extensions and utility installation of Gaucho Drive, and connect the various subdivisions to the south up to Cardella Road where there is currently no access. These road connections would improve the street network within the neighborhood and improve emergency access to the site or surrounding uses. Therefore, project construction and operation would not pose a significant obstacle to emergency response vehicles. This impact on emergency access would be less than significant

P. PUBLIC UTILITIES AND FACILITIES

SETTING AND DESCRIPTION

Water

The City's water system is composed of 22 groundwater production wells located throughout the City, and approximately 350 miles of main lines. Well pump operators ensure reliability and adequate system pressure at all times to satisfy customer demand. Diesel powered generators help maintain uninterrupted operations during power outages. The City of Merced water system delivers more than 24 million gallons of drinking water per day to approximately 20,733 residential, commercial, and industrial customer locations. The City is required to meet State Health pressure requirements, which call for a minimum of 20 psi at every service connection under the annual peak hour condition and maintenance of the annual average daily demand plus fire flow, whichever is stricter. The City of Merced Water Division is operated by the Public Works Department.

The City of Merced's wells have an average depth of 414 feet and range in depth from 161 feet to 800 feet. The depth of these wells would suggest that the City of Merced is primarily drawing water from a deep aquifer associated with the Mehrten geological formation. Increasing urban demand and associated population growth, along with an increased shift by agricultural users from surface water to groundwater and prolonged drought have resulted in declining groundwater levels due to overdraft. This condition was recognized by the City of Merced and the Merced Irrigation District (MID) in 1993, at which time the two entities began a two-year planning process to ensure a safe and reliable water supply for Eastern Merced County through the year 2030. Integrated Regional Water Planning continues today through various efforts.

Wastewater

Wastewater (sanitary sewer) collection and treatment in the Merced urban area is provided by the City of Merced. The wastewater collection system handles wastewater generated by residential, commercial, and industrial uses in the City.

The City Wastewater Treatment Plant (WWTP), located in the southwest part of the City about two miles south of the airport, has been periodically expanded and upgraded to meet the needs of the City's growing population and new industry. The City's wastewater treatment facility has a capacity of 11.5 million gallons per day (mgd); with an average flow of 8.5 mgd. The City has recently completed an expansion project to increase capacity to 12 mgd and upgrade to tertiary treatment with the addition of filtration and ultraviolet disinfection. Future improvements would add another 8 mgd in capacity (in increments of 4 mgd), for a total of 20 mgd. This design capacity can support a population of approximately 174,000. The collection system will also need to be expanded as development occurs.

Treated effluent is disposed of in several ways depending on the time of year. Most of the treated effluent (75% average) is discharged to Hartley Slough throughout the year. The remaining treated effluent is delivered to a land application area and the on-site City-owned wetland area south of the treatment plant.

<u>Storm Drainage</u>

The *Draft City of Merced Storm Drainage Master Plan* addresses the collection and disposal of surface water runoff in the City's SUDP. The study addresses both the collection and disposal of

storm water. Systems of storm drain pipes and catch basins are laid out, sized, and costed in the plan to serve present and projected urban land uses.

It is the responsibility of the developer to ensure that utilities, including storm water and drainage facilities, are installed in compliance with City regulations and other applicable regulations. Necessary arrangements with the utility companies or other agencies will be made for such installation, according to the specifications of the governing agency and the City [(Ord. 1342 § 2 (part), 1980: prior code § 25.21(f)).] The disposal system is mainly composed of MID facilities, including water distribution canals and laterals, drains, and natural channels that traverse the area.

The City of Merced has been involved in developing a Storm Water Management Plan (SWMP) to fulfill requirements of storm water discharges from Small Municipal Separate Storm Sewer System (MS4) operators in accordance with Section 402(p) of the Federal Clean Water Act (CWA). The SWMP was developed to also comply with General Permit Number CAS000004, Water Quality Order No. 2003-0005-DWQ.

Solid Waste

The City of Merced is served by the Highway 59 Landfill and the Highway 59 Compost Facility, located at 6040 North Highway 59. The County of Merced is the contracting agency for landfill operations and maintenance, as the facilities are owned by the Merced County Association of Governments. The City of Merced provides services for all refuse pick-up within the City limits and franchise hauling companies collect in the unincorporated areas. In addition to these two landfill sites, there is one private disposal facility, the Flintkote County Disposal Site, at SR 59 and the Merced River. This site is restricted to concrete and earth material.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
P. <u>Utilities and Service Systems.</u> Would the Project:				
1) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			✓	
2) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			✓	
3) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			✓	

4) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			✓	
5) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			✓	
6) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			✓	
7) Comply with federal, state, and local statutes and regulations related to solid waste?			✓	

1) **Less-Than-Significant Impact**

The project site would be served by City sewer system. There is sufficient capacity for serving this project within the City of Merced. This potential impact is less than significant.

2) **Less-Than-Significant Impact**

The City's current water and wastewater system is capable of handling this project within the City of Merced. There are existing sewer and water lines along El Redondo Drive and Horizons Avenue, which would be extended to go through the project site. No significant environmental impacts would result from connecting to the line. This potential impact is less than significant.

3) **Less-Than-Significant Impact**

No new facilities or expansions of existing facilities are needed. This potential impact is less than significant.

4) **Less-Than-Significant Impact**

As explained above, no new water facilities are needed for this project. The existing water system is sufficient to serve the development. Potential impacts are less than significant.

5) **Less-Than-Significant Impact**

Refer to item 2 above.

6) **Less-Than-Significant Impact**

The City of Merced uses the Highway 59 Landfill. Sufficient capacity is available to serve the future project. According to the *Merced Vision 2030 General Plan* DEIR, the landfill has capacity to serve the City through 2030. Potential impacts are less than significant.

7) **Less-Than-Significant Impact**

All construction on the site would be required to comply with all local, state, and federal regulations regarding solid waste, including recycling. Potential impacts are less than significant.

Q. Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Q. <u>Mandatory Findings of Significance.</u> Would the Project:				
1) Have the potential to 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, 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?			✓	
2) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probably future projects?)			✓	
3) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			✓	

1) **Less-Than-Significant Impact**

As previously discussed in this document, the Project does not have the potential to adversely affect biological resources or cultural resources, because such resources are lacking on the project site, and any potential impacts would be avoided with implementation of the mitigation measures and other applicable codes identified in this report. Also, the Project would not significantly change the existing urban setting of the project area. Thus, this impact would be less than significant.

2) **Less-Than-Significant Impact**

The Program Environmental Impact Report conducted for the *Merced Vision 2030 General Plan, the General Plan Program EIR* (SCH# 2008071069), has recognized that future development and build-out of the SUDP/SOI will result in cumulative and unavoidable impacts in the areas of Air Quality and Loss of Agricultural Soils. In conjunction with this conclusion, the City has adopted a Statement of Overriding Considerations for these impacts (Resolution #2011-63) which is herein incorporated by reference.

The certified General Plan EIR addressed and analyzed cumulative impacts resulting from changing agricultural use to urban uses. No new or unaddressed cumulative impacts will result from the project that have not previously been considered by the certified General Plan EIR or by the Statement of Overriding Considerations, or mitigated by this Expanded Initial Study. This Initial Study does not disclose any new and/or feasible mitigation measures which would lessen the unavoidable and significant cumulative impacts.

The analysis of impacts associated with the development would contribute to the cumulative air quality and agricultural impacts identified in the General Plan EIR. In the case of air quality, emissions from the proposed project would be less than significant. The nature and extent of these impacts, however, falls within the parameters of impacts previously analyzed in the General Plan EIR. No individual or cumulative impacts will be created by the Project that have not previously been considered at the program level by the General Plan EIR or mitigated by this Initial Study.

3) **Less-Than-Significant Impact**

Development anticipated by the *Merced Vision 2030 General Plan* will have significant adverse effects on human beings. These include the incremental degradation of air quality in the San Joaquin Basin, the loss of unique farmland, the incremental increase in traffic, and the increased demand on natural resources, public services, and facilities. However, consistent with the provisions of CEQA previously identified, the analysis of the proposed project is limited to those impacts which are peculiar to the project site or which were not previously identified as significant effects in the prior EIR. The previously-certified General Plan EIR and the Statement of Overriding Considerations addressed those cumulative impacts; hence, there is no requirement to address them again as part of this project.

This previous EIR concluded that these significant adverse impacts are accounted for in the mitigation measures incorporated into the General Plan EIR. In addition, a Statement of Overriding Considerations was adopted by City Council Resolution #2011-63 that indicates that the significant impacts associated with development are offset by the benefits that will be realized in providing necessary jobs for residents of the City. The analysis and mitigation of impacts have been detailed in the Environmental Impact Report prepared for the *Merced Vision 2030 General Plan*, which is incorporated into this document by reference.

While this issue was addressed and resolved with the General Plan EIR in an abundance of caution, in order to fulfill CEQA's mandate to fully disclose potential environmental consequences of projects, this analysis is considered herein. However, as a full disclosure

document, this issue is repeated in abbreviated form for purposes of disclosure, even though it was resolved as a part of the General Plan.

Potential impacts associated with the Project's development have been described in this Initial Study. All impacts were determined to be less than significant.

R. Greenhouse Gas Emissions

For additional information see Appendix A at Attachment C for combined studies on Air Quality, Green House Gas Emissions, and Vehicle Miles Traveled.

SETTING AND DESCRIPTION

Certain gases in the earth's atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining the earth's surface temperature. A portion of the solar radiation that enters the atmosphere is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space. Infrared radiation is absorbed by GHGs; as a result, infrared radiation released from the earth that otherwise would have escaped back into space is instead trapped, resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on Earth.

GHGs are present in the atmosphere naturally, are released by natural sources and anthropogenic sources, and are formed from secondary reactions taking place in the atmosphere. The following GHGs are widely accepted as the principal contributors to human-induced global climate change and are relevant to the project: carbon dioxide (CO_2), methane, and nitrous oxide.

Emissions of CO_2 are byproducts of fossil fuel combustion. Methane is the main component of natural gas and is associated with agricultural practices and landfills. Nitrous oxide is a colorless GHG that results from industrial processes, vehicle emissions, and agricultural practices.

Global warming potential (GWP) is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to CO_2. The GWP of a GHG is based on several factors, including the relative effectiveness of a gas in absorbing infrared radiation and the length of time the gas remains in the atmosphere (i.e., its atmospheric lifetime). The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main GHGs that have been attributed to human activity include methane, which has a GWP of 28, and nitrous oxide, which has a GWP of 265 (IPCC 2013). For example, 1 ton of methane has the same contribution to the greenhouse effect as approximately 28 tons of CO_2. GHGs with lower emissions rates than CO_2 may still contribute to climate change, because they are more effective than CO_2 at absorbing outgoing infrared radiation (i.e., they have high GWPs). The concept of CO_2-equivalents (CO_2e) is used to account for the different GWP potentials of GHGs to absorb infrared radiation.

Climate Change

Global climate change is a change in the average weather of the Earth, which can be measured by wind patterns, storms, precipitation, and temperature. It is exacerbated by GHGs, which trap heat in the atmosphere (called the "greenhouse" effect). GHGs include carbon dioxide, methane, and nitrous oxide, and are emitted by natural processes and human activities. Potential adverse effects of global climate change include a reduction in

the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels, and changes to ecosystems and the natural environment.

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, city, and virtually every individual on Earth. A project's GHG emissions are at a micro-scale relative to global emissions, but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact.

Regulatory Context

The City of Merced has developed and approved a Climate Action Plan (October 1, 2012). The City of Merced Climate Action Plan provides strategies for reduction of GHG emissions. The SJVAPC Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (December 17, 2009) provides guidance for addressing GHG analysis and implements a 29 percent reduction in project GHG emissions.

Significance Criteria

The Climate Action Plan provides strategies and actions for new developments in Part 4: Climate Action Plan Strategies and Actions. Consistence with the Climate action Plan strategies and action would show the project would not significantly increase GHG emissions in the future. The SJVAPCD criteria is to reduce GHG emission by 29 percent over business-as-usual.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
R. <u>Greenhouse Gas Emissions.</u> Would the project:				
1) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			✓	
2) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			✓	

1) **Less -than-Significant Impact**

The San Joaquin Valley Air Pollution Control District (SJVAPCD) is responsible for protecting public health and welfare through the administration of federal and state air quality laws and policies. In December 2009, SJVAPCD adopted the *Final Staff Report Addressing Greenhouse Gas Emissions Impacts under the California Environmental Quality Act* (SJVAPCD 2009). SJVAPCD also developed guidance for land-use agencies to address GHG emission impacts for new development projects. Projects complying with an approved GHG emission reduction plan or GHG mitigation program would have a less-than-significant individual and cumulative impact related to GHG emissions. Projects implementing best performance standards and reducing project-specific GHG emissions by at least 29 percent compared to the business-as-usual condition would have a less-than-significant individual and cumulative impact on global climate change under this guidance. However, models used to estimate GHG emissions now include some of the statewide measures that previously would have been used to evaluate this 29 percent reduction performance standard, so this particular method of comparison is out of date.

To establish the context in which to consider the project's GHG emissions, this analysis used guidance from the adjacent Sacramento Metropolitan Air Quality Management District (SMAQMD) to determine significance. In 2014, SMAQMD adopted a significance threshold for GHG emissions consistent with the goals of Assembly Bill (AB) 32: 1,100 metric tons (MT) CO_2e per year for construction-related and operational emissions (SMAQMD 2014). This significance threshold was developed to assess the consistency of a project's emissions with the statewide framework for reducing GHG emissions.

The impacts associated with GHG emissions generated by the project are related to the emissions from short-term construction and operations. Off-road equipment, materials transport, and worker commutes during construction of the project would generate GHG emissions. Emissions generated by the project during operations are related to indirect GHG emissions associated with residential uses.

Project's GHG Emissions

The proposed project would result in the emission of GHGs during the construction and operational phases.

Construction GHG Emissions

Construction of the project would emit GHGs during the operation of heavy equipment. **Table 5** provides an estimate of project related GHG emissions per construction year.

Table 5

Construction Related GHG Emissions

Construction Year	**CO_2e Emissions**
	MT/year
2023	263.27
2024	110.15
Maximum Year Emissions	**263.27**

Operational GHG Emissions

Operation of the project would emit GHGs from area, energy, mobile, stationary, waste, and water sources. **Table 5** provides an estimate of project related GHG emissions per construction year. Detailed calculations are provided in Appendix A.

Table 5

Estimation of Project Related GHG Emissions

Operation	**CO_2e Emissions**
	MT/year
Total GHG Emissions	998.21

GHG emissions associated with construction of the project are short-term and will cease following completion of construction activity. Therefore, the project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. For additional information see Appendix A at Attachment C. This impact would be less than significant.

2) **Less-than-Significant Impact**

In 2006, California enacted AB 32, the California Global Warming Solutions Act of 2006 (California Health and Safety Code Section 38500 et seq.). AB 32 establishes regulatory, reporting, and market mechanisms to achieve reductions in GHG emissions and establishes

a cap on statewide GHG emissions. It requires that statewide GHG emissions be reduced to 1990 levels by 2020.

In 2008 and 2014, the California Air Resources Board (ARB) approved the Climate Change Scoping Plan (Scoping Plan) and the first update to the Climate Change Scoping Plan: Building on the Framework, respectively (ARB 2008; ARB 2014). In 2016, the state legislature passed Senate Bill SB 32, which established a 2030 GHG emissions reduction target of 40 percent below 1990 levels. In response to SB 32 and the companion legislation of AB 197, ARB approved the Final Proposed 2017 Scoping Plan Update: The Strategy for Achieving California's 2030 GHG Target in November 2017 (ARB 2017). The 2017 Scoping Plan draws from the previous plans to present strategies to reaching California's 2030 GHG reduction target. The project would comply with any mandate or standards set forth by an adopted Scoping Plan Update effecting construction activities and operations.

In 2012, the City of Merced adopted the *Merced Climate Action Plan* to address the reduction of major sources of GHG emissions. The climate action plan established an emissions target of 1990 levels by 2020, commensurate with the State of California's target (City of Merced 2012). To meet this goal, the City adopted values, goals, and strategies to reduce emissions. Goals of the plan include:

- enhanced mobility of all transportation modes;
- sustainable community design;
- water conservation and technology;
- protection of air resources;
- waste reduction;
- increased use of renewable energy sources;
- building energy conservation; and
- public outreach and involvement.

The project would be consistent with the goals of the *Merced Climate Action Plan*.

The greatest source of GHG emissions emitted from the project is from mobile sources (refer to Appendix A). It is important that the project be consistent with reduced VMT and strategy provided in the Climate Action Plan.

Due to the location of the project to schools, shopping, employment, and transportation, it is reasonable to assume that implementation of the project would reduce VMT and therefore, reduce GHG emissions (refer to Vehicle Miles Traveled Section below). It is anticipated that the location of the project would reduce residential VMT by greater than 50 percent; however, to be conservative a 50 percent reduction in VMTs was used in the CalEEMod (refer to Appendix A). A reduction is VMT of 50 percent will not result in a 50 percent reduction in GHG emissions because the overall project GHG emissions includes, not only mobile emission, but area, energy, waste, and water GHG emission sources. Table 6 shows GHG emissions based on the reduction of VMT estimated in Vehicle Miles Traveled Section, as shown emissions are reduced by 44 percent, CalEEMod output files are provided in Appendix A

Table 6

Reduced VMT Related GHG Emissions

Operation	CO_2e Emissions
	MT/year
Total GHG Emissions	555.60

The project is also consistent with the City's Climate Action Plan, Strategy EM 1.5 Mobility Development Review Polices due to the project's connectivity with the adjacent neighborhoods, nearby transit stops (Route M5 – Merced South-East), and schools which reduce mobile GHG emissions. The project would not create any significant new sources of GHG emissions and would comply with the City's Climate Action Plan and SJVAPCD emissions reduction requirements; therefore, the project would not contribute to adverse impacts associated with cumulative GHG emissions.

As mentioned above, the project would not exceed emissions thresholds adopted by SMAQMD and would be consistent with the applicable requirements of the *Merced Climate Action Plan*. Therefore, the project would not conflict with any applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions. For additional information see Appendix A at Attachment C. This impact would be less than significant.

4. ENVIRONMENTAL DETERMINATION

On the basis of this initial environmental evaluation:

X I find that the project could have a significant effect on the environment, and that a NEGATIVE DECLARATION HAS BEEN PREPARED for public review.

March 1, 2023

_____
Francisco Mendoza-Gonzalez, Associate Planner

_____
Kim Espinosa, Planning Manager
Environmental Coordinator
City of Merced

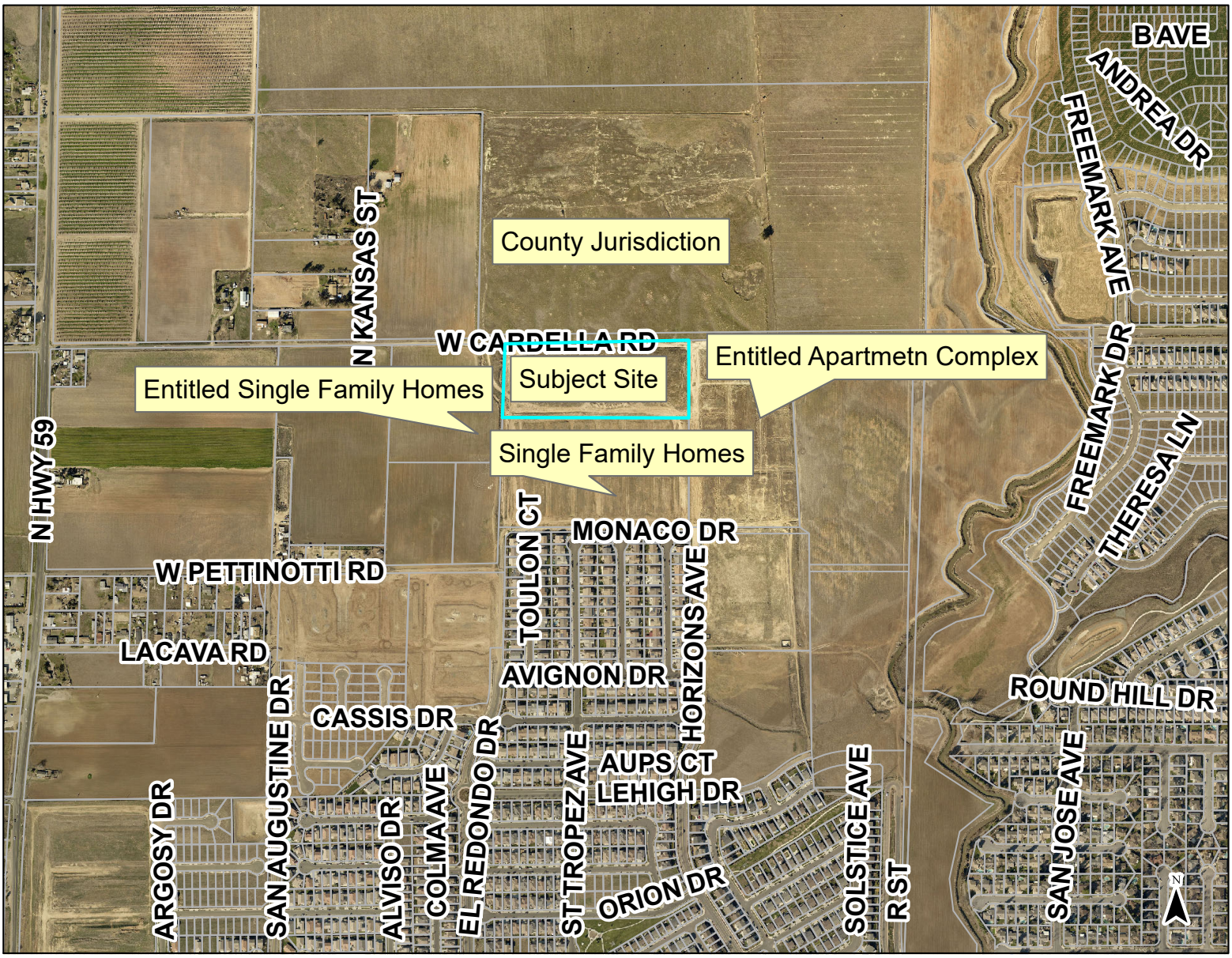
5. PREPARERS OF THE INITIAL STUDY

LEAD AGENCY

City of Merced
Planning & Permitting Division
678 West 18th Street
Merced, CA 95340
(209) 385-6929
Francisco Mendoza-Gonzalez, Associate Planner

ATTACHMENTS:

A) Location Map
B) Site Plan
C) Appendix A – Combined Studies for Air Quality, Green House Gas Emissions, and Vehicle Miles Traveled



ATTACHMENT A

TENTATIVE MAP NOTES:

INFORMATION REQUIRED PER MERCED MUNICIPAL CODE SECTION 18.16.080

1.) LOCATION MAP AS SHOWN HEREON.

2.) TRACT NAME, DATE, NORTH ARROW, SCALE AND LEGAL DESCRIPTION AS SHOWN HEREON.

3.) OWNER: Adrian Chen
42260 Vargad Road
Fremont, CA 94539
(510) 378-3950

4.) SUBDIVIDER: SAME AS ABOVE

5.) MAP PREPARED BY: GOLDEN VALLEY ENGINEERING & SURVEYING, Inc.
405 W. 19th STREET
MERCED, CA 95340
(209) 722-3200

6.) ACREAGE APPROXIMATELY 10.76± ACRES (GROSS)

7.) CONTOURS SHOWN. GROUND RELATIVELY FLAT

8.) LOCATIONS, NAMES, WIDTHS, RADII OF CURVES AND GRADES OF ALL EXISTING AND PROPOSED ROADS, STREETS IN AND ADJACENT TO THE PROPOSED SUBDIVISION AS SHOWN.

9.) NO PROTECTIVE COVENANTS PROPOSED AT THIS TIME. PROTECTIVE COVENANTS TO BE RECORDED WITH FINAL MAP, IF ANY.

10.) LOCATION AND DESCRIPTION OF ALL EASEMENTS AS SHOWN HEREON; EIGHT FOOT PUBLIC FACILITY EASEMENTS TO BE PROVIDED ALONG ALL LOT FRONTAGES.

11.) LOCATION AND SIZE OF ALL EXISTING AND PROPOSED PUBLIC UTILITIES AS SHOWN HEREON.

12.) SEWAGE DISPOSAL BY CITY OF MERCED FACILITIES. STORM WATER DISPOSAL BY EXISTING SYSTEM TO CITY OF MERCED FACILITIES ADJACENT TO PROJECT SITE.

13.) PUBLIC OPEN SPACE EXISTS WITHIN OR ADJACENT TO THE PROPOSED SUB-DIVISION.

14.) LOT LAYOUT, APPROXIMATE DIMENSIONS AND AREA OF EACH IRREGULAR LOT AND LOT NUMBERS AS SHOWN.

15.) CITY LIMIT LINES AS SHOWN

16.) INTENDED LAND USE: R1-5
SINGLE FAMILY RESIDENCE .....53 UNITS
NET ACREAGE .....6.50 ACRES
DENSITY: ..... (8.15 UNITS/NET ACRE)

17.) PROPOSED PUBLIC IMPROVEMENTS PER CITY OF MERCED STANDARDS.

18.) DEVELOPMENT PHASE: THE DEVELOPER RESERVES THE RIGHT TO PHASE THIS PROJECT IN ACCORDANCE WITH THE PROVISIONS OF THE STATE SUBDIVISION MAP ACT.

19.) EXISTING USE AND OWNERSHIP OF LAND IMMEDIATELY ADJACENT TO SUBDIVISION AS SHOWN HEREON.

20.) PRELIMINARY TITLE REPORT TO BE SUBMITTED WITH TENTATIVE MAP.

21.) EXISTING BUILDINGS WITHIN THE SUBDIVISION AS SHOWN.

22.) NO EXISTING TREES.

23.) AREA OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS TAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD. THE SITE IS WITHIN FLOOD ZONE "X" DEPTH 1' PER F.I.R.M. MAP NUMBER 06047C0426 EFFECTIVE DATE DECEMBER 2, 2008 PREPARED BY F.E.M.A.

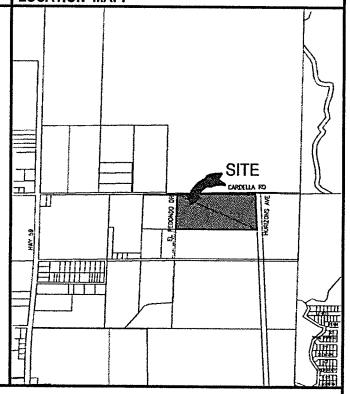
LEGEND:

- PROPOSED STREET LIGHT
- DRAINAGE FLOW DIRECTION
- + 132.55 EXISTING GROUND ELEVATION
- OR EXISTING CROWN OF ROAD
- SD STORM DRAIN
- SS SANITARY SEWER
- W WATERLINE
- 12" UTILITY PIPE DIAMETER SIZE IN INCHES
- STORMDRAIN MANHOLE
- STORMDRAIN CURB INLET
- SEWER MANHOLE
- FIRE HYDRANT
- WATER VALVE
- DIRECTION OF FLOW ARROW
- SD STORM DRAIN LINE LABEL
- SS SANITARY SEWER LINE LABEL
- W WATERLINE LABEL
- PROPOSED WHEEL CHAIR RAMP
- PROPERTY LINE
- ADJACENT PROPERTY LINE
- ADJACENT PROPERTY LINE (PROPOSED FUTURE SUBDIVISION)
- CENTERLINE OF ROAD
- PROPOSED SUBDIVISION PROPERTY LINE
- PROPOSED PUBLIC UTILITY EASEMENT LINE
- CMU BLOCK WALL

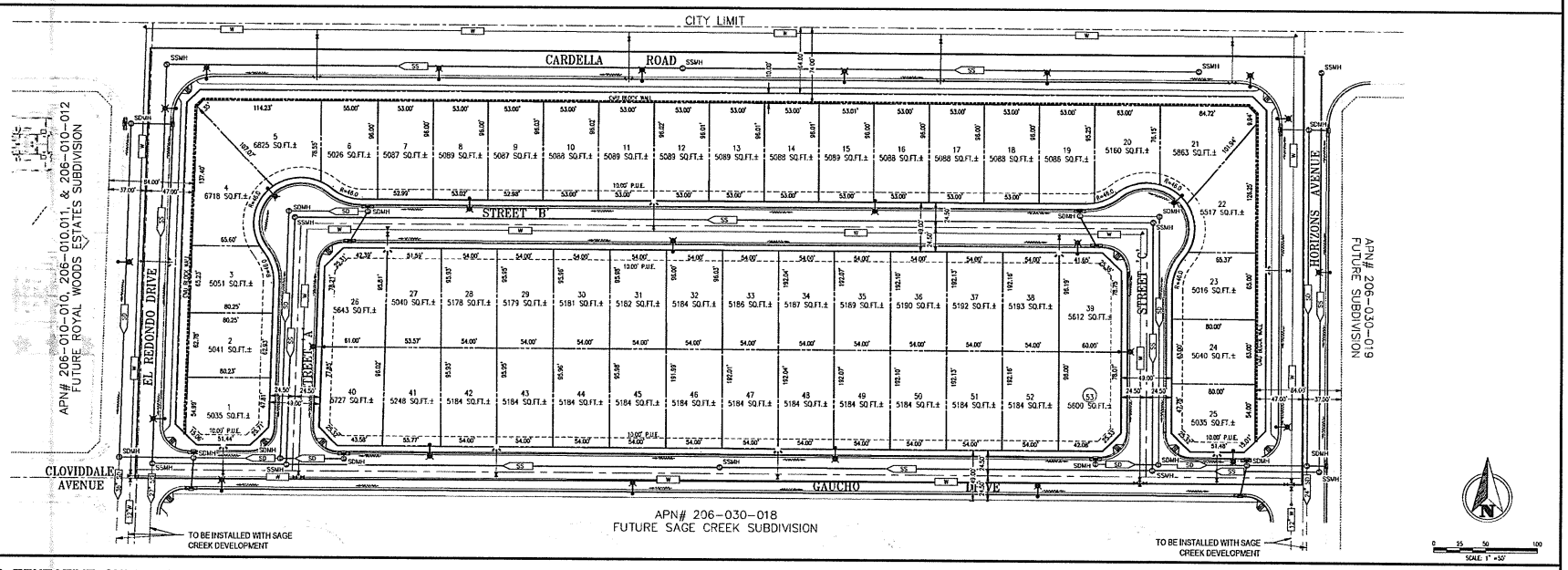
LEGAL DESCRIPTION:

LOT 3, AS SHOWN ON THE MAP ENTITLED, MAP OF BARNELL'S MERCED TRACT, FILED NOVEMBER 14, 1913 IN THE OFFICE OF THE COUNTY RECORDER OF MERCED COUNTY, VOLUME 6 OF OFFICIAL PLATS, PAGE14.

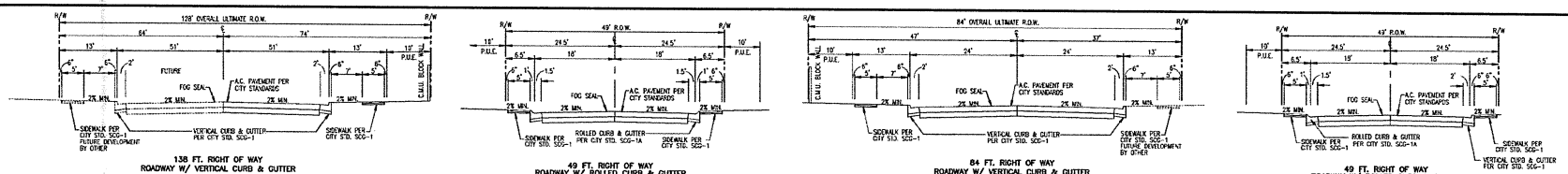
LOCATION MAP:



1 NOTES, LEGEND, LEGAL DESCRIPTION & VICINITY MAP



2. VESTING TENTATIVE SUBDIVISION MAP



138 FT. RIGHT OF WAY
ROADWAY W/ VERTICAL CURB & GUTTER
CARDELLA ROAD

49 FT. RIGHT OF WAY
ROADWAY W/ ROLLED CURB & GUTTER

84 FT. RIGHT OF WAY
ROADWAY W/ VERTICAL CURB & GUTTER
HORIZONS AVENUE & EL REDONDO DRIVE

49 FT. RIGHT OF WAY
ROADWAY W/ ROLLED CURB & GUTTER
GAUCHO DRIVE

3. STREET SECTIONS

PREPARED BY:

GOLDEN VALLEY
ENGINEERING & SURVEYING
405 West 19th Street
Merced, CA 95340
P.O. Box 349
Merced, CA 95341
Ph.: (209) 722-3200
Fax: (209) 722-3251

ATTACHMENT B

No.	Date	Description

VESTING TENTATIVE SUBDIVISION MAP

ISEA INTERNATIONAL LLC.

CARDELLA ROAD
APN: 206-030-017

STATE OF CALIFORNIA

CITY OF MERCED

SHEET CONTENTS:
- Vesting Tentative Subdivision Map

PREPARED FOR:

ISEA International Llc.
Attn: Adrian Chen
42260 Vargad Road
Fremont, CA 94539
Phone: 510-378-3950

PROJECT DATA

Date: Jun, 2022
Scale: As Shown
Drawn By: Teba B.
Job No.: 22053
SHEET NUMBER

1

W:\land projects\22053 Adrian Chen\DWG\22053 Tentative Map.dwg, 11/17/2022 1:32:26 PM, DWG To PDF.pc3

November 14, 2022
File No. 01222274.00

Adrian Chen
42260 Vargad Road
Fremont, CA 94539
510-378-3950

Subject: **Air Quality (AQ), Greenhouse Gas (GHG), and Vehicle Miles Traveled (VMT) Analyses for the Cardella Road Land Use Project Located in the City of Merced, Merced County, California**

Dear Mr. Chen:

Mr. Chen has requested **SCS Engineers (SCS)** to provide an AQ and GHG analyses for submittal to the City of Merced, California. It is our understanding that the Cardella Road Project (project) is required by the City of Merced (City) to analyze the project's impact on AQ, GHG, and VMT; therefore, SCS provides Cardella Road with the following letter.

PROJECT BACKGROUND

SCS understand Cardella Road is a 6.5-acre subdivision project located adjacent to Cardella Road to the north, Redondo Drive to the west, and Horizons Avenue to the east in the City of Merced, CA. The subdivision is approximately 53 lots, ranging between 5,035 to 6,825 square feet.

The proposed project will consist of a constructing a single-family residential subdivision. The City is requesting that AQ, GHG, and VMT analyses be performed.

AIR QUALITY

REGULATORY CONTEXT

Ambient Air Quality Standards

The California Clean Air Act (CAA) establishes maximum ambient concentrations for the criteria air pollutants (CAPs), known as the California Ambient Air Quality Standards (CAAQS). The CAPs are ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO), lead (Pb), particulate matter 10 and 2.5 microns in size (PM_{10} and $PM_{2.5}$), hydrogen sulfide, sulfates, visibility reducing particles, and vinyl chloride. Concentrations above these time-averaged limits are anticipated to cause adverse health effects to sensitive receptors. **Table 1** shows the standards for the various averaging times for criteria pollutants under the CAAQS. The San Juaquin Valley Air Basin (SJVAB) is in nonattainment for the following CAAQS criteria pollutants: ozone, PM_{10}, $PM_{2.5}$.

TABLE 1
STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	Standard parts per million or microgram per cubic meter CAAQS
Ozone	1 hour	0.09
	8 hour	0.070
CO	8 hour	9
	1 hour	20
NO_2	Annual Mean	0.03
	1 hour	0.18
SO_2	24 hour	0.04
	3 hour	N/A
	1 hour	0.25
PM_{10}	Annual Mean	(20)
	24 hour	(50)
$PM_{2.5}$	Annual arithmetic mean	(12)
	24 hour	N/A
Pb	Rolling 3-Moth Average	N/A
	30 Days	(1.5)
Hydrogen Sulfide	1 hour	0.03
Vinyl Chloride	24 hour	0.01
Sulfate	24 hour	(25)
Visibility Reducing Particles	8 hour	extinction of 0.23 per km

California State Implementation Plan (SIP)

California's SIP is comprised of the State's overall air quality attainment plans to meet the CAAQS as well as the individual air quality attainment plans of each Air Quality Management District (AQMD) and Air Pollution Control District (APCD). The items included in the California SIP are listed in 40 CFR Chapter I, Part 52, Subpart F §52.220. The California SIP is a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), AQMD and APCD rules, State regulations, and federal controls for each air basin and California's overall air quality. Many of the items within the California SIP rely on the same control strategies, such as emissions standards for cars and heavy trucks, fuel regulations, and limitations on emissions from consumer products. AQMDs and APCDs, as well as other agencies such as the Bureau of Automotive Repair, prepare draft California SIP elements and submit them to California Air Resource Board (CARB) for review and approval. The California CAA identifies CARB as the lead agency for compiling items for incorporation into the California SIP, and submitting the items to CARB and the United States Environmental Protection Agency (U.S. EPA) for

approval. San Juaquin Valley Air Basin (SJVAB) is in nonattainment for ozone, PM_{10}, $PM_{2.5}$ and have approved SIPs.

San Joaquin Valley Air Pollution Control District (SJVAPCD)

The SJVAPCD is a regional agency which regulates stationary sources of air pollution within the SJVAB whose boundaries are contiguous with the County's boundaries. Its primary purpose is to enforce local, state, and federal air quality regulations in order to satisfy ambient air quality standards and protect the public from harm due to poor air quality. The SJVAPCD regulates air quality through its permit authority over most types of stationary emission sources and through its planning and review activities. Additionally, the SJVAPCD regulates open and agricultural burning and is responsible for air quality monitoring, preparing clean air plans, and responding to citizen complaints regarding air quality.

All projects in Merced County and in the community of Merced are subject to applicable SJVAPCD rules and regulations in effect at the time of construction and operation. The SJVAPCD has adopted air quality thresholds for determination of impact significance for projects subject to California Environmental Quality Act (CEQA) review. Air quality significance criteria is provided in Table 2.

TABLE 2
AIR QUALITY THREHOLDS OF SIGNIFICANCE – CRITERIA POLLUTANTS

Pollutant/Precursor	Construction Emissions	Operational Emissions	
		Permitted Equipment and Activities	Permitted Equipment and Activities
	Tons/Year		
CO	100	100	100
NOx	10	10	10
ROG	10	10	10
SOx	27	27	27
PM10	15	15	15
PM2.5	15	15	15

SJVAPCD, AQ Thresholds of Significance – Criteria Pollutants (March 19, 2015)

Sensitive Receptors

Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality related health problems. Residential areas are considered sensitive to poor air quality, because people usually stay home for extended periods of time, increasing the potential exposure to ambient air quality. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system.

The land surrounding the project sites is primarily open space, there is a residential subdivision located approximately 630 feet to the south and agricultural land uses located approximately 1,375 feet to the north. Merced College is the nearest school to the project site at 0.82 miles and Rudolph Rivera Intermediate and Elementary School are approximately 1.30 miles from the project site. The nearest recreation facility, Merino Park is located 0.52 miles from the project site and the nearest hospital, Mercy Hospital is located 1.27 mile from the project site.

Methodology

The Proposed Project's short-term construction-related criteria pollutant emissions were estimated using California Emissions Estimator Model (CalEEMod) Version 2020.4.0. The CalEEMod used default values for construction and operational emissions estimate. Because the City does not provide criteria pollutant emission thresholds, estimated project-related criteria pollutant emissions were compared to the SJVAPCD CEQA construction and operational criteria pollutant significant criteria shown in Table 2.

Air Quality Analyses

The City of Merced is located in the SJVAB, which is under the jurisdiction of the SJVAPCD and is classified as nonattainment for ozone, PM_{10}, $PM_{2.5}$. The SJVAPCD have applicable SIPs to address these nonattainment issues. The SJVAPCD has provided significance criteria (Table 2), which if a project's emissions are below these the significance criteria the project is considered to not conflict with or obstruct implementation of the applicable air quality plan. As shown below the project's emissions do not exceed the SJVAPCD significance criteria. **No Impact.**

Construction

Construction of the project would require demolition, site preparation, grading, building/infrastructure, paving and architectural coating. As shown in Table 3, construction criteria emission would not exceed the SJVAPCD significance criteria. **Less than Significant.**

TABLE 3
MAXIMUM ANNUAL CONSTRUCTION EMISSIONS

Pollutant/Precursor	Construction Emissions	Significant Criteria	Exceed Significant
	Tons/Year		
CO	1.66	100	No
NOx	1.53	10	No
ROG	0.96	10	No
SOx	0.003	27	No
Total PM10	0.27	15	No
Total PM2.5	0.16	15	No

Operation

Operation of the project would emit criteria pollution from area, energy, mobile, stationary, waste, and water sources. Table 4, shows the emissions from the operation of the project with 53 single family homes. As shown in Table 4 project emission would not exceed the SJVAPCD significance threshold. Therefore, operation of the project would not adversely impact regional air quality**. Less than Significant.**

TABLE 4
MAXIMUM ANNUAL OPERATIONAL EMISSIONS

Pollutant/Precursor	Construction Emissions	Significant Criteria	Exceed Significant
	Tons/Year		
CO	3.51	100	No
NOx	0.83	10	No
ROG	0.78	10	No
SOx	0.01	27	No
Total PM10	0.73	15	No
Total PM2.5	0.21	15	No

Cumulative Impacts

Although SJVAPCD does not have any quantitative cumulative significant criteria, air quality is cumulative in nature. CAAQS are predicated on past, present, and future emissions; therefore, if project-related emission are found to have a less-than-significant impact in the near-term conditions, then cumulative impacts would also be less-than-significant. Project-related air quality impacts were found to be less-than-significant in the near-term conditions; therefore, the project would not adversely affect regional air quality in the future**. Less than Significant.**

The shortest distance between a project site and the nearest sensitive receptor is approximately 630 feet. Construction activities would be short term and intermittent. Although used during construction, heavy construction equipment would be the main source of pollutants during construction of the project. Given that heavy equipment would be used intermittently and during the day time hours, and given the short duration of construction activities in a given area and distance to the nearest sensitive receptor, exposure of sensitive receptors to substantial pollutant concentrations would not occur. Operation of the project would not result in substantial pollutant concentrations. **Less than Significant.**

Given the use of heavy equipment during construction, the time of day heavy equipment would be operated, and the distance to the nearest sensitive receptor, the project would not emit objectionable odors that would be adversely affect a substantial number of people. Operation of the project would not emit odors. Therefore, construction and operation of the project would have a less-than-significant impact associated with odors. **Less than Significant.**

GREENHOUSE GAS EMISSIONS

CLIMATE CHANGE

Global climate change is a change in the average weather of the Earth, which can be measured by wind patterns, storms, precipitation, and temperature. It is exacerbated by GHGs, which trap heat in the atmosphere (called the "greenhouse" effect). GHGs include carbon dioxide, methane, and nitrous oxide, and are emitted by natural processes and human activities. Potential adverse effects of global climate change include a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels, and changes to ecosystems and the natural environment.

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, city, and virtually every individual on Earth. A project's GHG emissions are at a micro-scale relative to global emissions, but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact.

REGULATORY CONTEXT

The City of Merced has developed and approved a Climate Action Plan (October 1, 2012). The City of Merced Climate Action Plan provides strategies for reduction of GHG emissions. The SJVAPCD Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (December 17, 2009) provides guidance for addressing GHG analysis and implements a 29 percent reduction in project GHG emissions.

METHODOLOGY

The Proposed Project's short-term construction-related GHG emissions were estimated using the California Emissions Estimator Model (CalEEMod) Version 2020.4.0. The CalEEMod used default values for construction and operational emissions estimate.

SIGNIFICANCE CRITERIA

The Climate Action Plan provides strategies and actions for new developments in Part 4: Climate Action Plan Strategies and Actions. Consistence with the Climate action Plan strategies and action would show the project would not significantly increase GHG emissions in the future. The SJVAPCD criteria is to reduce GHG emission by 29 percent over business-as-usual.

Project's GHG Emissions

The proposed project would result in the emission of GHGs during the construction and operational phases.

Construction GHG Emissions

Construction of the project would emit GHGs during the operation of heavy equipment. **Table 5** provides an estimate of project related GHG emissions per construction year. Detailed calculations are provided in **Appendix A**.

TABLE 5
CONSTRUCTION RELATED GHG EMISSIONS

Construction Year	CO_2e Emissions
	MT/year
2023	263.27
2024	110.15
Maximum Year Emissions	**263.27**

Operational GHG Emissions

Operation of the project would emit GHGs from area, energy, mobile, stationary, waste, and water sources. **Table 5** provides an estimate of project related GHG emissions per construction year. Detailed calculations are provided in **Appendix A**.

TABLE 5
ESTIMATION OF PROJECT RELATED GHG EMISSIONS

Operation	CO_2e Emissions
	MT/year
Total GHG Emissions	998.21

Project's Consistency with City's Climate Action Plan

The greatest source of GHG emissions emitted from the project is from mobile sources (refer to Appendix A). It is important that the project be consistent with reduced VMT and strategy provided in the Climate Action Plan.

Due to the location of the project to schools, shopping, employment, and transportation, it is reasonable to assume that implementation of the project would reduce VMT and therefore, reduce GHG emissions (refer to Vehicle Miles Traveled Section below). It is anticipated that the location of the project would reduce residential VMT by greater than 50 percent; however, to be conservative a 50 percent reduction in VMTs was used in the CalEEMod (refer to Appendix A). A reduction is VMT of 50 percent will not result in a 50 percent reduction in GHG emissions because the overall project GHG emissions includes, not only mobile emission, but area, energy, waste, and water GHG emission sources. Table 6 shows GHG emissions based on the reduction of VMT estimated in Vehicle Miles Traveled Section, as shown emissions are reduced by 44 percent, CalEEMod output files are provided in Appendix A.

TABLE 6
REDUCED VMT RELATED GHG EMISSIONS

Operation	CO_2e Emissions
	MT/year
Total GHG Emissions	555.60

The project is also consistent with the City's Climate Action Plan, Strategy EM 1.5 Mobility Development Review Polices due to the project's nearby transit stops on R Street (Route M2), and schools, shopping, employment centers, which would reduce mobile GHG emissions. The project would not create any significant new sources of GHG emissions and would comply with the City's Climate Action Plan and SJVAPCD emissions reduction requirements; therefore, the project would not contribute to adverse impacts associated with cumulative GHG emissions. **Less than Significant.**

VEHICLE MILES TRAVELED

Regulatory Context

Pursuant to Senate Bill 743 (passed in 2013), the metric for analyzing transportation impacts under the CEQA officially changed over on July 1, 2020 from level of service to VMT. The 2030 City of Merced General Plan identifies the improvement project and strategies that have and will assist the City of Merced in reducing it vehicles miles traveled.

Vehicle Miles Traveled Analysis

Calculation of VMT shown in the CalEEMod output files in Appendix A, Section 4.0 Operational Detail – Mobile, 4.2 Trip Summary Information shows that the project's annual VMT is 1,906,497 miles. This is unmitigated VMT and does not show reduction for proximity of the project to transportation, schools, employment centers, and shopping.

The project is located within 0.7 mile of the R Street and Pacific Drive bus stop (M2, Merced R Street Route). The project site is located within 0.9 miles from University of California at site and 1.2 miles from Rivera Intermediate and Elementary schools. Merino Park is located approximately 0.55 miles from the project site. The project is located within three miles of the city center where the majority of employers are located. Shopping centers and markets are located within two miles of the project site and throughout Merced.

The CalEEMod trip generation (Institute of Transportation Engineers (ITE), *Trip Generation Manual, 10th Edition*) provides for trip lengths of for home to work as 10.8-mile, home to shop as 7.3-miles, and home to other (schools, recreation) as 7.5-miles. As shown above the distance to from home to work, home to shopping, and home to schools is less than half these default distance provided by the ITE; therefore, given the location of the project, it is expected to reduce VMT by more 50 percent, resulting is a project VMT of 953,518 miles or a 50 percent reduction in the project's VMT. **Less than Significant.**

CONCLUSION

Implementation of the project would not result in result in a significant regional AQ impacts, a significant increase in GHG emissions, and would comply with VMT criteria within the City.

Sincerely,

Erin Quinn
Project Director
SCS Engineers

Patrick Sullivan
Senior Vice President
SCS Engineers

Attachments

ATTACHMENTS

CalEEMod Output Files

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

Cardella Road

Merced County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	53.00	Dwelling Unit	6.50	95,400.00	152

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	49
Climate Zone	3			**Operational Year**	2024
Utility Company	Merced Irrigation District				
CO2 Intensity (lb/MWhr)	290.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Per plans

Construction Phase -

Demolition -

Vehicle Trips - 50% Reduction due to location of schools, shopping, connetivity, and transportation.

Area Mitigation -

Stationary Sources - Process Boilers -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblLandUse	LotAcreage	17.21	6.50
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

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

tblWoodstoves	NumberCatalytic	6.50	10.76
tblWoodstoves	NumberNoncatalytic	6.50	10.76

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	0.1694	1.5312	1.6630	3.0000e-003	0.1945	0.0721	0.2666	0.0916	0.0675	0.1591	0.0000	261.2257	261.2257	0.0599	1.8600e-003	263.2763
2024	0.9587	0.5552	0.7239	1.2600e-003	0.0112	0.0253	0.0365	3.0000e-003	0.0238	0.0268	0.0000	109.3112	109.3112	0.0247	7.3000e-004	110.1454
Maximum	**0.9587**	**1.5312**	**1.6630**	**3.0000e-003**	**0.1945**	**0.0721**	**0.2666**	**0.0916**	**0.0675**	**0.1591**	**0.0000**	**261.2257**	**261.2257**	**0.0599**	**1.8600e-003**	**263.2763**

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	0.1694	1.5312	1.6630	3.0000e-003	0.1945	0.0721	0.2666	0.0916	0.0675	0.1591	0.0000	261.2254	261.2254	0.0599	1.8600e-003	263.2760
2024	0.9587	0.5552	0.7239	1.2600e-003	0.0112	0.0253	0.0365	3.0000e-003	0.0238	0.0268	0.0000	109.3111	109.3111	0.0247	7.3000e-004	110.1453
Maximum	**0.9587**	**1.5312**	**1.6630**	**3.0000e-003**	**0.1945**	**0.0721**	**0.2666**	**0.0916**	**0.0675**	**0.1591**	**0.0000**	**261.2254**	**261.2254**	**0.0599**	**1.8600e-003**	**263.2760**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-1-2023	6-30-2023	0.6361	0.6361
2	7-1-2023	9-30-2023	0.5380	0.5380
3	10-1-2023	12-31-2023	0.5387	0.5387
4	1-1-2024	3-31-2024	0.4951	0.4951
5	4-1-2024	6-30-2024	1.0085	1.0085
		Highest	1.0085	1.0085

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	0.6956	0.0568	2.3932	6.6400e-003		0.3287	0.3287		0.3287	0.3287	43.4997	23.6028	67.1025	0.2044	4.2000e-004	72.3382
Energy	6.8700e-003	0.0587	0.0250	3.7000e-004		4.7500e-003	4.7500e-003		4.7500e-003	4.7500e-003	0.0000	123.7650	123.7650	7.6300e-003	2.0100e-003	124.5557
Mobile	0.2975	0.7712	3.0953	8.0800e-003	0.7177	8.4200e-003	0.7261	0.1925	7.9400e-003	0.2004	0.0000	750.2519	750.2519	0.0337	0.0487	765.6010
Waste						0.0000	0.0000		0.0000	0.0000	11.1077	0.0000	11.1077	0.6564	0.0000	27.5188
Water						0.0000	0.0000		0.0000	0.0000	1.0955	3.4718	4.5674	0.1129	2.7000e-003	8.1962
Total	**1.0000**	**0.8867**	**5.5135**	**0.0151**	**0.7177**	**0.3418**	**1.0595**	**0.1925**	**0.3413**	**0.5338**	**55.7029**	**901.0915**	**956.7944**	**1.0151**	**0.0538**	**998.2099**

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	0.4740	4.5300e-003	0.3934	2.0000e-005		2.1800e-003	2.1800e-003		2.1800e-003	2.1800e-003	0.0000	0.6428	0.6428	6.2000e-004	0.0000	0.6583
Energy	6.8700e-003	0.0587	0.0250	3.7000e-004		4.7500e-003	4.7500e-003		4.7500e-003	4.7500e-003	0.0000	123.7650	123.7650	7.6300e-003	2.0100e-003	124.5557
Mobile	0.2975	0.7712	3.0953	8.0800e-003	0.7177	8.4200e-003	0.7261	0.1925	7.9400e-003	0.2004	0.0000	750.2519	750.2519	0.0337	0.0487	765.6010
Waste						0.0000	0.0000		0.0000	0.0000	11.1077	0.0000	11.1077	0.6564	0.0000	27.5188
Water						0.0000	0.0000		0.0000	0.0000	1.0955	3.4718	4.5674	0.1129	2.7000e-003	8.1962
Total	**0.7783**	**0.8344**	**3.5137**	**8.4700e-003**	**0.7177**	**0.0154**	**0.7330**	**0.1925**	**0.0149**	**0.2074**	**12.2032**	**878.1315**	**890.3347**	**0.8113**	**0.0534**	**926.5299**

	ROG	NOx	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	**22.16**	**5.90**	**36.27**	**43.87**	**0.00**	**95.51**	**30.81**	**0.00**	**95.64**	**61.16**	**78.09**	**2.55**	**6.95**	**20.08**	**0.78**	**7.18**

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	4/1/2023	4/14/2023	5	10	
2	Grading	Grading	4/15/2023	5/12/2023	5	20	
3	Building Construction	Building Construction	5/13/2023	3/29/2024	5	230	

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

4	Paving	Paving	3/30/2024	4/26/2024	5	20	
5	Architectural Coating	Architectural Coating	4/27/2024	5/24/2024	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 0

Residential Indoor: 193,185; Residential Outdoor: 64,395; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

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

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	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	19.00	6.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7254	16.7254	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0983**	**6.3300e-003**	**0.1046**	**0.0505**	**5.8200e-003**	**0.0563**	**0.0000**	**16.7254**	**16.7254**	**5.4100e-003**	**0.0000**	**16.8606**

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 Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	4.3000e-004	3.3000e-004	3.8400e-003	1.0000e-005	1.1200e-003	1.0000e-005	1.1200e-003	3.0000e-004	1.0000e-005	3.0000e-004	0.0000	0.9156	0.9156	3.0000e-005	3.0000e-005	0.9243
Total	**4.3000e-004**	**3.3000e-004**	**3.8400e-003**	**1.0000e-005**	**1.1200e-003**	**1.0000e-005**	**1.1200e-003**	**3.0000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9156**	**0.9156**	**3.0000e-005**	**3.0000e-005**	**0.9243**

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					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7253	16.7253	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0983**	**6.3300e-003**	**0.1046**	**0.0505**	**5.8200e-003**	**0.0563**	**0.0000**	**16.7253**	**16.7253**	**5.4100e-003**	**0.0000**	**16.8606**

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 Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	4.3000e-004	3.3000e-004	3.8400e-003	1.0000e-005	1.1200e-003	1.0000e-005	1.1200e-003	3.0000e-004	1.0000e-005	3.0000e-004	0.0000	0.9156	0.9156	3.0000e-005	3.0000e-005	0.9243
Total	**4.3000e-004**	**3.3000e-004**	**3.8400e-003**	**1.0000e-005**	**1.1200e-003**	**1.0000e-005**	**1.1200e-003**	**3.0000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9156**	**0.9156**	**3.0000e-005**	**3.0000e-005**	**0.9243**

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					0.0708	0.0000	0.0708	0.0343	0.0000	0.0343	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1794	0.1475	3.0000e-004		7.7500e-003	7.7500e-003		7.1300e-003	7.1300e-003	0.0000	26.0606	26.0606	8.4300e-003	0.0000	26.2713
Total	**0.0171**	**0.1794**	**0.1475**	**3.0000e-004**	**0.0708**	**7.7500e-003**	**0.0786**	**0.0343**	**7.1300e-003**	**0.0414**	**0.0000**	**26.0606**	**26.0606**	**8.4300e-003**	**0.0000**	**26.2713**

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 Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	7.2000e-004	5.6000e-004	6.4000e-003	2.0000e-005	1.8600e-003	1.0000e-005	1.8700e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.5260	1.5260	4.0000e-005	5.0000e-005	1.5406
Total	**7.2000e-004**	**5.6000e-004**	**6.4000e-003**	**2.0000e-005**	**1.8600e-003**	**1.0000e-005**	**1.8700e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.5260**	**1.5260**	**4.0000e-005**	**5.0000e-005**	**1.5406**

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					0.0708	0.0000	0.0708	0.0343	0.0000	0.0343	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1794	0.1475	3.0000e-004		7.7500e-003	7.7500e-003		7.1300e-003	7.1300e-003	0.0000	26.0606	26.0606	8.4300e-003	0.0000	26.2713
Total	**0.0171**	**0.1794**	**0.1475**	**3.0000e-004**	**0.0708**	**7.7500e-003**	**0.0786**	**0.0343**	**7.1300e-003**	**0.0414**	**0.0000**	**26.0606**	**26.0606**	**8.4300e-003**	**0.0000**	**26.2713**

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 Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	7.2000e-004	5.6000e-004	6.4000e-003	2.0000e-005	1.8600e-003	1.0000e-005	1.8700e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.5260	1.5260	4.0000e-005	5.0000e-005	1.5406
Total	**7.2000e-004**	**5.6000e-004**	**6.4000e-003**	**2.0000e-005**	**1.8600e-003**	**1.0000e-005**	**1.8700e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.5260**	**1.5260**	**4.0000e-005**	**5.0000e-005**	**1.5406**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1298	1.1868	1.3401	2.2200e-003		0.0577	0.0577		0.0543	0.0543	0.0000	191.2389	191.2389	0.0455	0.0000	192.3762
Total	**0.1298**	**1.1868**	**1.3401**	**2.2200e-003**		**0.0577**	**0.0577**		**0.0543**	**0.0543**	**0.0000**	**191.2389**	**191.2389**	**0.0455**	**0.0000**	**192.3762**

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

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.6000e-004	0.0208	7.0000e-003	9.0000e-005	2.9600e-003	1.3000e-004	3.1000e-003	8.6000e-004	1.3000e-004	9.8000e-004	0.0000	8.8131	8.8131	3.0000e-005	1.3100e-003	9.2045
Worker	7.5200e-003	5.8300e-003	0.0669	1.7000e-004	0.0194	1.1000e-004	0.0196	5.1700e-003	1.0000e-004	5.2700e-003	0.0000	15.9462	15.9462	4.7000e-004	4.7000e-004	16.0988
Total	**8.0800e-003**	**0.0266**	**0.0739**	**2.6000e-004**	**0.0224**	**2.4000e-004**	**0.0227**	**6.0300e-003**	**2.3000e-004**	**6.2500e-003**	**0.0000**	**24.7593**	**24.7593**	**5.0000e-004**	**1.7800e-003**	**25.3033**

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	0.1298	1.1868	1.3401	2.2200e-003		0.0577	0.0577		0.0543	0.0543	0.0000	191.2387	191.2387	0.0455	0.0000	192.3760
Total	**0.1298**	**1.1868**	**1.3401**	**2.2200e-003**		**0.0577**	**0.0577**		**0.0543**	**0.0543**	**0.0000**	**191.2387**	**191.2387**	**0.0455**	**0.0000**	**192.3760**

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

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.6000e-004	0.0208	7.0000e-003	9.0000e-005	2.9600e-003	1.3000e-004	3.1000e-003	8.6000e-004	1.3000e-004	9.8000e-004	0.0000	8.8131	8.8131	3.0000e-005	1.3100e-003	9.2045
Worker	7.5200e-003	5.8300e-003	0.0669	1.7000e-004	0.0194	1.1000e-004	0.0196	5.1700e-003	1.0000e-004	5.2700e-003	0.0000	15.9462	15.9462	4.7000e-004	4.7000e-004	16.0988
Total	**8.0800e-003**	**0.0266**	**0.0739**	**2.6000e-004**	**0.0224**	**2.4000e-004**	**0.0227**	**6.0300e-003**	**2.3000e-004**	**6.2500e-003**	**0.0000**	**24.7593**	**24.7593**	**5.0000e-004**	**1.7800e-003**	**25.3033**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0478	0.4369	0.5254	8.8000e-004		0.0199	0.0199		0.0188	0.0188	0.0000	75.3510	75.3510	0.0178	0.0000	75.7964
Total	**0.0478**	**0.4369**	**0.5254**	**8.8000e-004**		**0.0199**	**0.0199**		**0.0188**	**0.0188**	**0.0000**	**75.3510**	**75.3510**	**0.0178**	**0.0000**	**75.7964**

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

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1000e-004	8.1800e-003	2.6700e-003	4.0000e-005	1.1700e-003	5.0000e-005	1.2200e-003	3.4000e-004	5.0000e-005	3.9000e-004	0.0000	3.4173	3.4173	1.0000e-005	5.1000e-004	3.5689
Worker	2.7200e-003	2.0000e-003	0.0240	7.0000e-005	7.6600e-003	4.0000e-005	7.7000e-003	2.0400e-003	4.0000e-005	2.0700e-003	0.0000	6.0895	6.0895	1.6000e-004	1.7000e-004	6.1442
Total	**2.9300e-003**	**0.0102**	**0.0267**	**1.1000e-004**	**8.8300e-003**	**9.0000e-005**	**8.9200e-003**	**2.3800e-003**	**9.0000e-005**	**2.4600e-003**	**0.0000**	**9.5068**	**9.5068**	**1.7000e-004**	**6.8000e-004**	**9.7131**

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	0.0478	0.4369	0.5254	8.8000e-004		0.0199	0.0199		0.0188	0.0188	0.0000	75.3509	75.3509	0.0178	0.0000	75.7963
Total	**0.0478**	**0.4369**	**0.5254**	**8.8000e-004**		**0.0199**	**0.0199**		**0.0188**	**0.0188**	**0.0000**	**75.3509**	**75.3509**	**0.0178**	**0.0000**	**75.7963**

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

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1000e-004	8.1800e-003	2.6700e-003	4.0000e-005	1.1700e-003	5.0000e-005	1.2200e-003	3.4000e-004	5.0000e-005	3.9000e-004	0.0000	3.4173	3.4173	1.0000e-005	5.1000e-004	3.5689
Worker	2.7200e-003	2.0000e-003	0.0240	7.0000e-005	7.6600e-003	4.0000e-005	7.7000e-003	2.0400e-003	4.0000e-005	2.0700e-003	0.0000	6.0895	6.0895	1.6000e-004	1.7000e-004	6.1442
Total	**2.9300e-003**	**0.0102**	**0.0267**	**1.1000e-004**	**8.8300e-003**	**9.0000e-005**	**8.9200e-003**	**2.3800e-003**	**9.0000e-005**	**2.4600e-003**	**0.0000**	**9.5068**	**9.5068**	**1.7000e-004**	**6.8000e-004**	**9.7131**

3.5 Paving - 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	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1885
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8800e-003**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1885**

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

3.5 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	4.9000e-004	5.8300e-003	2.0000e-005	1.8600e-003	1.0000e-005	1.8700e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.4792	1.4792	4.0000e-005	4.0000e-005	1.4925
Total	**6.6000e-004**	**4.9000e-004**	**5.8300e-003**	**2.0000e-005**	**1.8600e-003**	**1.0000e-005**	**1.8700e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.4792**	**1.4792**	**4.0000e-005**	**4.0000e-005**	**1.4925**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1884
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8800e-003**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1884**

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

3.5 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	4.9000e-004	5.8300e-003	2.0000e-005	1.8600e-003	1.0000e-005	1.8700e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.4792	1.4792	4.0000e-005	4.0000e-005	1.4925
Total	**6.6000e-004**	**4.9000e-004**	**5.8300e-003**	**2.0000e-005**	**1.8600e-003**	**1.0000e-005**	**1.8700e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.4792**	**1.4792**	**4.0000e-005**	**4.0000e-005**	**1.4925**

3.6 Architectural Coating - 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	0.8954					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5569
Total	**0.8972**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5569**

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

3.6 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.3000e-004	1.5600e-003	0.0000	5.0000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3945	0.3945	1.0000e-005	1.0000e-005	0.3980
Total	**1.8000e-004**	**1.3000e-004**	**1.5600e-003**	**0.0000**	**5.0000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3945**	**0.3945**	**1.0000e-005**	**1.0000e-005**	**0.3980**

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	0.8954					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5568
Total	**0.8972**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5568**

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

3.6 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.3000e-004	1.5600e-003	0.0000	5.0000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3945	0.3945	1.0000e-005	1.0000e-005	0.3980
Total	**1.8000e-004**	**1.3000e-004**	**1.5600e-003**	**0.0000**	**5.0000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3945**	**0.3945**	**1.0000e-005**	**1.0000e-005**	**0.3980**

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	0.2975	0.7712	3.0953	8.0800e-003	0.7177	8.4200e-003	0.7261	0.1925	7.9400e-003	0.2004	0.0000	750.2519	750.2519	0.0337	0.0487	765.6010
Unmitigated	0.2975	0.7712	3.0953	8.0800e-003	0.7177	8.4200e-003	0.7261	0.1925	7.9400e-003	0.2004	0.0000	750.2519	750.2519	0.0337	0.0487	765.6010

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	500.32	505.62	453.15	1,906,497	1,906,497
Total	500.32	505.62	453.15	1,906,497	1,906,497

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
Single Family Housing	16.80	7.10	7.90	46.90	17.40	35.70	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.515533	0.047958	0.156749	0.151796	0.029800	0.007258	0.013970	0.049021	0.000803	0.000458	0.021477	0.002201	0.002977

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

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	55.7800	55.7800	6.3300e-003	7.7000e-004	56.1667
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	55.7800	55.7800	6.3300e-003	7.7000e-004	56.1667
NaturalGas Mitigated	6.8700e-003	0.0587	0.0250	3.7000e-004		4.7500e-003	4.7500e-003		4.7500e-003	4.7500e-003	0.0000	67.9850	67.9850	1.3000e-003	1.2500e-003	68.3890
NaturalGas Unmitigated	6.8700e-003	0.0587	0.0250	3.7000e-004		4.7500e-003	4.7500e-003		4.7500e-003	4.7500e-003	0.0000	67.9850	67.9850	1.3000e-003	1.2500e-003	68.3890

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					
Single Family Housing	1.27399e+006	6.8700e-003	0.0587	0.0250	3.7000e-004		4.7500e-003	4.7500e-003		4.7500e-003	4.7500e-003	0.0000	67.9850	67.9850	1.3000e-003	1.2500e-003	68.3890
Total		**6.8700e-003**	**0.0587**	**0.0250**	**3.7000e-004**		**4.7500e-003**	**4.7500e-003**		**4.7500e-003**	**4.7500e-003**	**0.0000**	**67.9850**	**67.9850**	**1.3000e-003**	**1.2500e-003**	**68.3890**

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					
Single Family Housing	1.27399e+006	6.8700e-003	0.0587	0.0250	3.7000e-004		4.7500e-003	4.7500e-003		4.7500e-003	4.7500e-003	0.0000	67.9850	67.9850	1.3000e-003	1.2500e-003	68.3890
Total		**6.8700e-003**	**0.0587**	**0.0250**	**3.7000e-004**		**4.7500e-003**	**4.7500e-003**		**4.7500e-003**	**4.7500e-003**	**0.0000**	**67.9850**	**67.9850**	**1.3000e-003**	**1.2500e-003**	**68.3890**

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			
Single Family Housing	422620	55.7800	6.3300e-003	7.7000e-004	56.1667
Total		**55.7800**	**6.3300e-003**	**7.7000e-004**	**56.1667**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	422620	55.7800	6.3300e-003	7.7000e-004	56.1667
Total		**55.7800**	**6.3300e-003**	**7.7000e-004**	**56.1667**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

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

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.4740	4.5300e-003	0.3934	2.0000e-005		2.1800e-003	2.1800e-003		2.1800e-003	2.1800e-003	0.0000	0.6428	0.6428	6.2000e-004	0.0000	0.6583
Unmitigated	0.6956	0.0568	2.3932	6.6400e-003		0.3287	0.3287		0.3287	0.3287	43.4997	23.6028	67.1025	0.2044	4.2000e-004	72.3382

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

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0895					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3726					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.2216	0.0523	1.9999	6.6200e-003		0.3265	0.3265		0.3265	0.3265	43.4997	22.9600	66.4597	0.2038	4.2000e-004	71.6799
Landscaping	0.0118	4.5300e-003	0.3934	2.0000e-005		2.1800e-003	2.1800e-003		2.1800e-003	2.1800e-003	0.0000	0.6428	0.6428	6.2000e-004	0.0000	0.6583
Total	**0.6956**	**0.0568**	**2.3932**	**6.6400e-003**		**0.3287**	**0.3287**		**0.3287**	**0.3287**	**43.4997**	**23.6028**	**67.1025**	**0.2044**	**4.2000e-004**	**72.3382**

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	0.0895					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3726					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0118	4.5300e-003	0.3934	2.0000e-005		2.1800e-003	2.1800e-003		2.1800e-003	2.1800e-003	0.0000	0.6428	0.6428	6.2000e-004	0.0000	0.6583
Total	**0.4740**	**4.5300e-003**	**0.3934**	**2.0000e-005**		**2.1800e-003**	**2.1800e-003**		**2.1800e-003**	**2.1800e-003**	**0.0000**	**0.6428**	**0.6428**	**6.2000e-004**	**0.0000**	**0.6583**

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	4.5674	0.1129	2.7000e-003	8.1962
Unmitigated	4.5674	0.1129	2.7000e-003	8.1962

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	3.45316 / 2.17699	4.5674	0.1129	2.7000e-003	8.1962
Total		**4.5674**	**0.1129**	**2.7000e-003**	**8.1962**

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			
Single Family Housing	3.45316 / 2.17699	4.5674	0.1129	2.7000e-003	8.1962
Total		**4.5674**	**0.1129**	**2.7000e-003**	**8.1962**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	11.1077	0.6564	0.0000	27.5188
Unmitigated	11.1077	0.6564	0.0000	27.5188

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

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	54.72	11.1077	0.6564	0.0000	27.5188
Total		**11.1077**	**0.6564**	**0.0000**	**27.5188**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	54.72	11.1077	0.6564	0.0000	27.5188
Total		**11.1077**	**0.6564**	**0.0000**	**27.5188**

9.0 Operational Offroad

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

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

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

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

Cardella Road

Merced County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	53.00	Dwelling Unit	6.50	95,400.00	152

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	49
Climate Zone	3			**Operational Year**	2024
Utility Company	Merced Irrigation District				
CO2 Intensity (lb/MWhr)	290.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Per plans

Construction Phase -

Demolition -

Vehicle Trips - 50% Reduction due to location of schools, shopping, connetivity, and transportation.

Woodstoves -

Area Mitigation -

Stationary Sources - Process Boilers -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblLandUse	LotAcreage	17.21	6.50

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

tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	HO_TL	7.90	3.95
tblVehicleTrips	HS_TL	7.10	3.55
tblVehicleTrips	HW_TL	16.80	8.40
tblWoodstoves	NumberCatalytic	6.50	0.00
tblWoodstoves	NumberNoncatalytic	6.50	0.00

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	0.1694	1.5312	1.6630	3.0000e-003	0.1945	0.0721	0.2666	0.0916	0.0675	0.1591	0.0000	261.2257	261.2257	0.0599	1.8600e-003	263.2763
2024	0.9587	0.5552	0.7239	1.2600e-003	0.0112	0.0253	0.0365	3.0000e-003	0.0238	0.0268	0.0000	109.3112	109.3112	0.0247	7.3000e-004	110.1454
Maximum	**0.9587**	**1.5312**	**1.6630**	**3.0000e-003**	**0.1945**	**0.0721**	**0.2666**	**0.0916**	**0.0675**	**0.1591**	**0.0000**	**261.2257**	**261.2257**	**0.0599**	**1.8600e-003**	**263.2763**

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	0.1694	1.5312	1.6630	3.0000e-003	0.1945	0.0721	0.2666	0.0916	0.0675	0.1591	0.0000	261.2254	261.2254	0.0599	1.8600e-003	263.2760
2024	0.9587	0.5552	0.7239	1.2600e-003	0.0112	0.0253	0.0365	3.0000e-003	0.0238	0.0268	0.0000	109.3111	109.3111	0.0247	7.3000e-004	110.1453
Maximum	**0.9587**	**1.5312**	**1.6630**	**3.0000e-003**	**0.1945**	**0.0721**	**0.2666**	**0.0916**	**0.0675**	**0.1591**	**0.0000**	**261.2254**	**261.2254**	**0.0599**	**1.8600e-003**	**263.2760**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-1-2023	6-30-2023	0.6361	0.6361
2	7-1-2023	9-30-2023	0.5380	0.5380
3	10-1-2023	12-31-2023	0.5387	0.5387
4	1-1-2024	3-31-2024	0.4951	0.4951
5	4-1-2024	6-30-2024	1.0085	1.0085
		Highest	1.0085	1.0085

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	0.4763	0.0244	0.4018	1.5000e-004		3.7800e-003	3.7800e-003		3.7800e-003	3.7800e-003	0.0000	23.6028	23.6028	1.0600e-003	4.2000e-004	23.7547
Energy	6.8700e-003	0.0587	0.0250	3.7000e-004		4.7500e-003	4.7500e-003		4.7500e-003	4.7500e-003	0.0000	123.7650	123.7650	7.6300e-003	2.0100e-003	124.5557
Mobile	0.2216	0.4543	1.8230	4.1600e-003	0.3589	4.4000e-003	0.3633	0.0963	4.1400e-003	0.1004	0.0000	385.8944	385.8944	0.0224	0.0276	394.6768
Waste						0.0000	0.0000		0.0000	0.0000	11.1077	0.0000	11.1077	0.6564	0.0000	27.5188
Water						0.0000	0.0000		0.0000	0.0000	1.0955	3.4718	4.5674	0.1129	2.7000e-003	8.1962
Total	**0.7048**	**0.5373**	**2.2497**	**4.6800e-003**	**0.3589**	**0.0129**	**0.3719**	**0.0963**	**0.0127**	**0.1090**	**12.2032**	**536.7341**	**548.9373**	**0.8004**	**0.0327**	**578.7021**

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	0.4740	4.5300e-003	0.3934	2.0000e-005		2.1800e-003	2.1800e-003		2.1800e-003	2.1800e-003	0.0000	0.6428	0.6428	6.2000e-004	0.0000	0.6583
Energy	6.8700e-003	0.0587	0.0250	3.7000e-004		4.7500e-003	4.7500e-003		4.7500e-003	4.7500e-003	0.0000	123.7650	123.7650	7.6300e-003	2.0100e-003	124.5557
Mobile	0.2216	0.4543	1.8230	4.1600e-003	0.3589	4.4000e-003	0.3633	0.0963	4.1400e-003	0.1004	0.0000	385.8944	385.8944	0.0224	0.0276	394.6768
Waste						0.0000	0.0000		0.0000	0.0000	11.1077	0.0000	11.1077	0.6564	0.0000	27.5188
Water						0.0000	0.0000		0.0000	0.0000	1.0955	3.4718	4.5674	0.1129	2.7000e-003	8.1962
Total	**0.7024**	**0.5175**	**2.2413**	**4.5500e-003**	**0.3589**	**0.0113**	**0.3703**	**0.0963**	**0.0111**	**0.1074**	**12.2032**	**513.7741**	**525.9773**	**0.8000**	**0.0323**	**555.6057**

	ROG	NOx	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	**0.33**	**3.69**	**0.37**	**2.78**	**0.00**	**12.37**	**0.43**	**0.00**	**12.63**	**1.47**	**0.00**	**4.28**	**4.18**	**0.05**	**1.28**	**3.99**

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	4/1/2023	4/14/2023	5	10	
2	Grading	Grading	4/15/2023	5/12/2023	5	20	
3	Building Construction	Building Construction	5/13/2023	3/29/2024	5	230	

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

4	Paving	Paving	3/30/2024	4/26/2024	5	20
5	Architectural Coating	Architectural Coating	4/27/2024	5/24/2024	5	20

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 0

Residential Indoor: 193,185; Residential Outdoor: 64,395; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

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

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	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	19.00	6.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7254	16.7254	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0983**	**6.3300e-003**	**0.1046**	**0.0505**	**5.8200e-003**	**0.0563**	**0.0000**	**16.7254**	**16.7254**	**5.4100e-003**	**0.0000**	**16.8606**

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 Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	4.3000e-004	3.3000e-004	3.8400e-003	1.0000e-005	1.1200e-003	1.0000e-005	1.1200e-003	3.0000e-004	1.0000e-005	3.0000e-004	0.0000	0.9156	0.9156	3.0000e-005	3.0000e-005	0.9243
Total	**4.3000e-004**	**3.3000e-004**	**3.8400e-003**	**1.0000e-005**	**1.1200e-003**	**1.0000e-005**	**1.1200e-003**	**3.0000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9156**	**0.9156**	**3.0000e-005**	**3.0000e-005**	**0.9243**

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					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7253	16.7253	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0983**	**6.3300e-003**	**0.1046**	**0.0505**	**5.8200e-003**	**0.0563**	**0.0000**	**16.7253**	**16.7253**	**5.4100e-003**	**0.0000**	**16.8606**

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 Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	4.3000e-004	3.3000e-004	3.8400e-003	1.0000e-005	1.1200e-003	1.0000e-005	1.1200e-003	3.0000e-004	1.0000e-005	3.0000e-004	0.0000	0.9156	0.9156	3.0000e-005	3.0000e-005	0.9243
Total	**4.3000e-004**	**3.3000e-004**	**3.8400e-003**	**1.0000e-005**	**1.1200e-003**	**1.0000e-005**	**1.1200e-003**	**3.0000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9156**	**0.9156**	**3.0000e-005**	**3.0000e-005**	**0.9243**

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					0.0708	0.0000	0.0708	0.0343	0.0000	0.0343	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1794	0.1475	3.0000e-004		7.7500e-003	7.7500e-003		7.1300e-003	7.1300e-003	0.0000	26.0606	26.0606	8.4300e-003	0.0000	26.2713
Total	**0.0171**	**0.1794**	**0.1475**	**3.0000e-004**	**0.0708**	**7.7500e-003**	**0.0786**	**0.0343**	**7.1300e-003**	**0.0414**	**0.0000**	**26.0606**	**26.0606**	**8.4300e-003**	**0.0000**	**26.2713**

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 Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	7.2000e-004	5.6000e-004	6.4000e-003	2.0000e-005	1.8600e-003	1.0000e-005	1.8700e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.5260	1.5260	4.0000e-005	5.0000e-005	1.5406
Total	**7.2000e-004**	**5.6000e-004**	**6.4000e-003**	**2.0000e-005**	**1.8600e-003**	**1.0000e-005**	**1.8700e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.5260**	**1.5260**	**4.0000e-005**	**5.0000e-005**	**1.5406**

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					0.0708	0.0000	0.0708	0.0343	0.0000	0.0343	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1794	0.1475	3.0000e-004		7.7500e-003	7.7500e-003		7.1300e-003	7.1300e-003	0.0000	26.0606	26.0606	8.4300e-003	0.0000	26.2713
Total	**0.0171**	**0.1794**	**0.1475**	**3.0000e-004**	**0.0708**	**7.7500e-003**	**0.0786**	**0.0343**	**7.1300e-003**	**0.0414**	**0.0000**	**26.0606**	**26.0606**	**8.4300e-003**	**0.0000**	**26.2713**

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 Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	7.2000e-004	5.6000e-004	6.4000e-003	2.0000e-005	1.8600e-003	1.0000e-005	1.8700e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.5260	1.5260	4.0000e-005	5.0000e-005	1.5406
Total	**7.2000e-004**	**5.6000e-004**	**6.4000e-003**	**2.0000e-005**	**1.8600e-003**	**1.0000e-005**	**1.8700e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.5260**	**1.5260**	**4.0000e-005**	**5.0000e-005**	**1.5406**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1298	1.1868	1.3401	2.2200e-003		0.0577	0.0577		0.0543	0.0543	0.0000	191.2389	191.2389	0.0455	0.0000	192.3762
Total	**0.1298**	**1.1868**	**1.3401**	**2.2200e-003**		**0.0577**	**0.0577**		**0.0543**	**0.0543**	**0.0000**	**191.2389**	**191.2389**	**0.0455**	**0.0000**	**192.3762**

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

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.6000e-004	0.0208	7.0000e-003	9.0000e-005	2.9600e-003	1.3000e-004	3.1000e-003	8.6000e-004	1.3000e-004	9.8000e-004	0.0000	8.8131	8.8131	3.0000e-005	1.3100e-003	9.2045
Worker	7.5200e-003	5.8300e-003	0.0669	1.7000e-004	0.0194	1.1000e-004	0.0196	5.1700e-003	1.0000e-004	5.2700e-003	0.0000	15.9462	15.9462	4.7000e-004	4.7000e-004	16.0988
Total	**8.0800e-003**	**0.0266**	**0.0739**	**2.6000e-004**	**0.0224**	**2.4000e-004**	**0.0227**	**6.0300e-003**	**2.3000e-004**	**6.2500e-003**	**0.0000**	**24.7593**	**24.7593**	**5.0000e-004**	**1.7800e-003**	**25.3033**

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	0.1298	1.1868	1.3401	2.2200e-003		0.0577	0.0577		0.0543	0.0543	0.0000	191.2387	191.2387	0.0455	0.0000	192.3760
Total	**0.1298**	**1.1868**	**1.3401**	**2.2200e-003**		**0.0577**	**0.0577**		**0.0543**	**0.0543**	**0.0000**	**191.2387**	**191.2387**	**0.0455**	**0.0000**	**192.3760**

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

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.6000e-004	0.0208	7.0000e-003	9.0000e-005	2.9600e-003	1.3000e-004	3.1000e-003	8.6000e-004	1.3000e-004	9.8000e-004	0.0000	8.8131	8.8131	3.0000e-005	1.3100e-003	9.2045
Worker	7.5200e-003	5.8300e-003	0.0669	1.7000e-004	0.0194	1.1000e-004	0.0196	5.1700e-003	1.0000e-004	5.2700e-003	0.0000	15.9462	15.9462	4.7000e-004	4.7000e-004	16.0988
Total	**8.0800e-003**	**0.0266**	**0.0739**	**2.6000e-004**	**0.0224**	**2.4000e-004**	**0.0227**	**6.0300e-003**	**2.3000e-004**	**6.2500e-003**	**0.0000**	**24.7593**	**24.7593**	**5.0000e-004**	**1.7800e-003**	**25.3033**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0478	0.4369	0.5254	8.8000e-004		0.0199	0.0199		0.0188	0.0188	0.0000	75.3510	75.3510	0.0178	0.0000	75.7964
Total	**0.0478**	**0.4369**	**0.5254**	**8.8000e-004**		**0.0199**	**0.0199**		**0.0188**	**0.0188**	**0.0000**	**75.3510**	**75.3510**	**0.0178**	**0.0000**	**75.7964**

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

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1000e-004	8.1800e-003	2.6700e-003	4.0000e-005	1.1700e-003	5.0000e-005	1.2200e-003	3.4000e-004	5.0000e-005	3.9000e-004	0.0000	3.4173	3.4173	1.0000e-005	5.1000e-004	3.5689
Worker	2.7200e-003	2.0000e-003	0.0240	7.0000e-005	7.6600e-003	4.0000e-005	7.7000e-003	2.0400e-003	4.0000e-005	2.0700e-003	0.0000	6.0895	6.0895	1.6000e-004	1.7000e-004	6.1442
Total	**2.9300e-003**	**0.0102**	**0.0267**	**1.1000e-004**	**8.8300e-003**	**9.0000e-005**	**8.9200e-003**	**2.3800e-003**	**9.0000e-005**	**2.4600e-003**	**0.0000**	**9.5068**	**9.5068**	**1.7000e-004**	**6.8000e-004**	**9.7131**

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	0.0478	0.4369	0.5254	8.8000e-004		0.0199	0.0199		0.0188	0.0188	0.0000	75.3509	75.3509	0.0178	0.0000	75.7963
Total	**0.0478**	**0.4369**	**0.5254**	**8.8000e-004**		**0.0199**	**0.0199**		**0.0188**	**0.0188**	**0.0000**	**75.3509**	**75.3509**	**0.0178**	**0.0000**	**75.7963**

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

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1000e-004	8.1800e-003	2.6700e-003	4.0000e-005	1.1700e-003	5.0000e-005	1.2200e-003	3.4000e-004	5.0000e-005	3.9000e-004	0.0000	3.4173	3.4173	1.0000e-005	5.1000e-004	3.5689
Worker	2.7200e-003	2.0000e-003	0.0240	7.0000e-005	7.6600e-003	4.0000e-005	7.7000e-003	2.0400e-003	4.0000e-005	2.0700e-003	0.0000	6.0895	6.0895	1.6000e-004	1.7000e-004	6.1442
Total	**2.9300e-003**	**0.0102**	**0.0267**	**1.1000e-004**	**8.8300e-003**	**9.0000e-005**	**8.9200e-003**	**2.3800e-003**	**9.0000e-005**	**2.4600e-003**	**0.0000**	**9.5068**	**9.5068**	**1.7000e-004**	**6.8000e-004**	**9.7131**

3.5 Paving - 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	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1885
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8800e-003**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1885**

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

3.5 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	4.9000e-004	5.8300e-003	2.0000e-005	1.8600e-003	1.0000e-005	1.8700e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.4792	1.4792	4.0000e-005	4.0000e-005	1.4925
Total	**6.6000e-004**	**4.9000e-004**	**5.8300e-003**	**2.0000e-005**	**1.8600e-003**	**1.0000e-005**	**1.8700e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.4792**	**1.4792**	**4.0000e-005**	**4.0000e-005**	**1.4925**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1884
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8800e-003**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1884**

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

3.5 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	4.9000e-004	5.8300e-003	2.0000e-005	1.8600e-003	1.0000e-005	1.8700e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.4792	1.4792	4.0000e-005	4.0000e-005	1.4925
Total	**6.6000e-004**	**4.9000e-004**	**5.8300e-003**	**2.0000e-005**	**1.8600e-003**	**1.0000e-005**	**1.8700e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.4792**	**1.4792**	**4.0000e-005**	**4.0000e-005**	**1.4925**

3.6 Architectural Coating - 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	0.8954					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5569
Total	**0.8972**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5569**

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

3.6 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.3000e-004	1.5600e-003	0.0000	5.0000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3945	0.3945	1.0000e-005	1.0000e-005	0.3980
Total	**1.8000e-004**	**1.3000e-004**	**1.5600e-003**	**0.0000**	**5.0000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3945**	**0.3945**	**1.0000e-005**	**1.0000e-005**	**0.3980**

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	0.8954					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5568
Total	**0.8972**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5568**

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

3.6 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.3000e-004	1.5600e-003	0.0000	5.0000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3945	0.3945	1.0000e-005	1.0000e-005	0.3980
Total	**1.8000e-004**	**1.3000e-004**	**1.5600e-003**	**0.0000**	**5.0000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3945**	**0.3945**	**1.0000e-005**	**1.0000e-005**	**0.3980**

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	0.2216	0.4543	1.8230	4.1600e-003	0.3589	4.4000e-003	0.3633	0.0963	4.1400e-003	0.1004	0.0000	385.8944	385.8944	0.0224	0.0276	394.6768
Unmitigated	0.2216	0.4543	1.8230	4.1600e-003	0.3589	4.4000e-003	0.3633	0.0963	4.1400e-003	0.1004	0.0000	385.8944	385.8944	0.0224	0.0276	394.6768

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	500.32	505.62	453.15	953,518	953,518
Total	500.32	505.62	453.15	953,518	953,518

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
Single Family Housing	8.40	3.55	3.95	46.90	17.40	35.70	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.515533	0.047958	0.156749	0.151796	0.029800	0.007258	0.013970	0.049021	0.000803	0.000458	0.021477	0.002201	0.002977

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

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	55.7800	55.7800	6.3300e-003	7.7000e-004	56.1667
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	55.7800	55.7800	6.3300e-003	7.7000e-004	56.1667
NaturalGas Mitigated	6.8700e-003	0.0587	0.0250	3.7000e-004		4.7500e-003	4.7500e-003		4.7500e-003	4.7500e-003	0.0000	67.9850	67.9850	1.3000e-003	1.2500e-003	68.3890
NaturalGas Unmitigated	6.8700e-003	0.0587	0.0250	3.7000e-004		4.7500e-003	4.7500e-003		4.7500e-003	4.7500e-003	0.0000	67.9850	67.9850	1.3000e-003	1.2500e-003	68.3890

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					
Single Family Housing	1.27399e+006	6.8700e-003	0.0587	0.0250	3.7000e-004		4.7500e-003	4.7500e-003		4.7500e-003	4.7500e-003	0.0000	67.9850	67.9850	1.3000e-003	1.2500e-003	68.3890
Total		**6.8700e-003**	**0.0587**	**0.0250**	**3.7000e-004**		**4.7500e-003**	**4.7500e-003**		**4.7500e-003**	**4.7500e-003**	**0.0000**	**67.9850**	**67.9850**	**1.3000e-003**	**1.2500e-003**	**68.3890**

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					
Single Family Housing	1.27399e+006	6.8700e-003	0.0587	0.0250	3.7000e-004		4.7500e-003	4.7500e-003		4.7500e-003	4.7500e-003	0.0000	67.9850	67.9850	1.3000e-003	1.2500e-003	68.3890
Total		**6.8700e-003**	**0.0587**	**0.0250**	**3.7000e-004**		**4.7500e-003**	**4.7500e-003**		**4.7500e-003**	**4.7500e-003**	**0.0000**	**67.9850**	**67.9850**	**1.3000e-003**	**1.2500e-003**	**68.3890**

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			
Single Family Housing	422620	55.7800	6.3300e-003	7.7000e-004	56.1667
Total		**55.7800**	**6.3300e-003**	**7.7000e-004**	**56.1667**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	422620	55.7800	6.3300e-003	7.7000e-004	56.1667
Total		**55.7800**	**6.3300e-003**	**7.7000e-004**	**56.1667**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

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

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.4740	4.5300e-003	0.3934	2.0000e-005		2.1800e-003	2.1800e-003		2.1800e-003	2.1800e-003	0.0000	0.6428	0.6428	6.2000e-004	0.0000	0.6583
Unmitigated	0.4763	0.0244	0.4018	1.5000e-004		3.7800e-003	3.7800e-003		3.7800e-003	3.7800e-003	0.0000	23.6028	23.6028	1.0600e-003	4.2000e-004	23.7547

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

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0895					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3726					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.3200e-003	0.0198	8.4400e-003	1.3000e-004		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	22.9600	22.9600	4.4000e-004	4.2000e-004	23.0964
Landscaping	0.0118	4.5300e-003	0.3934	2.0000e-005		2.1800e-003	2.1800e-003		2.1800e-003	2.1800e-003	0.0000	0.6428	0.6428	6.2000e-004	0.0000	0.6583
Total	**0.4763**	**0.0244**	**0.4018**	**1.5000e-004**		**3.7800e-003**	**3.7800e-003**		**3.7800e-003**	**3.7800e-003**	**0.0000**	**23.6028**	**23.6028**	**1.0600e-003**	**4.2000e-004**	**23.7547**

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	0.0895					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3726					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0118	4.5300e-003	0.3934	2.0000e-005		2.1800e-003	2.1800e-003		2.1800e-003	2.1800e-003	0.0000	0.6428	0.6428	6.2000e-004	0.0000	0.6583
Total	**0.4740**	**4.5300e-003**	**0.3934**	**2.0000e-005**		**2.1800e-003**	**2.1800e-003**		**2.1800e-003**	**2.1800e-003**	**0.0000**	**0.6428**	**0.6428**	**6.2000e-004**	**0.0000**	**0.6583**

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	4.5674	0.1129	2.7000e-003	8.1962
Unmitigated	4.5674	0.1129	2.7000e-003	8.1962

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	3.45316 / 2.17699	4.5674	0.1129	2.7000e-003	8.1962
Total		**4.5674**	**0.1129**	**2.7000e-003**	**8.1962**

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			
Single Family Housing	3.45316 / 2.17699	4.5674	0.1129	2.7000e-003	8.1962
Total		**4.5674**	**0.1129**	**2.7000e-003**	**8.1962**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	11.1077	0.6564	0.0000	27.5188
Unmitigated	11.1077	0.6564	0.0000	27.5188

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

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	54.72	11.1077	0.6564	0.0000	27.5188
Total		**11.1077**	**0.6564**	**0.0000**	**27.5188**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	54.72	11.1077	0.6564	0.0000	27.5188
Total		**11.1077**	**0.6564**	**0.0000**	**27.5188**

9.0 Operational Offroad

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

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

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