ENVIRONMENTAL CHECKLIST

FOR THE

THREE STRIKES FEC AND VILLA BANCHETTO EVENT CENTER PROJECT

MARCH 2024

Prepared for:

City of Manteca – City Hall
1001 West Center Street
Manteca, CA 95337
(209) 456-8000

Prepared by:

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A Land Use Planning, Design, and Environmental Firm

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INTRODUCTION

The following pages provide an analysis of the proposed Three Strikes FEC and Villa Banchetto Event Center Project (project) with respect to the project's consistency with the City of Manteca General Plan, the analysis contained in the General Plan Environmental Impact Report (EIR), and any site-specific environmental impacts or cumulative impacts that may result from project implementation.

As explained in the following pages, the proposed project is consistent with the City's General Plan, for which an EIR was prepared and certified, and there are no site-specific or cumulative impacts associated with the proposed project that have not been fully addressed in a previous environmental document, or that cannot be mitigated to a less than significant level through the application of uniformly applied development policies and/or standards. The findings presented below demonstrate that no additional environmental analysis is required under the California Environmental Quality Act (CEQA) prior to approval of the proposed project.

PROJECT OVERVIEW

PROJECT LOCATION AND EXISTING SURROUNDING USES

The project site is located within the City of Manteca, in the southern portion of the city, south of State Route (SR) 120 and just south of W. Atherton Drive, at the intersection of Oleander Avenue. The project site is currently vacant. The project site is bounded on the north by W. Atherton Drive, and to the south, east, and west by existing residences. Figure 1 provides the project location.

PROJECT CHARACTERISTICS

The proposed project would include several uses. Specifically, the project would include:

- A Conference Center/Banquet Hall, consisting of three 200-person capacity rooms and two 100-person capacity rooms, 16,400 square feet of assembly space. In total, the Conference Center/Banquet Hall would consist of approximately 54,090 square feet of space.
- A Family Entertainment Center, consisting of 40 bowling lanes, twelve 20-seat banquet rooms, a 6,000 square foot arcade, a 6,500 square foot restaurant, and a 400 square foot Pro Shop. In total, the Family Entertainment Center would include a total of 82,000 square feet of space.

Further detail on the Conference Center/Banquet Hall and the Family Entertainment Center is provided below. Figure 2 provides project site plans.

Conference Center/Banquet Hall (Villa Banchetto): Villa Banchetto is a full-service banquet facility and conference center. The facility is designed primarily for weddings and wedding receptions Friday through Sunday. This portion of the business would be seasonal, with late March through mid-October being the peak seasons. The balance of the year would be Christmas parties, corporate events and larger conferences. As it relates to the wedding portion, most

engagements happen around Christmas, New Years, and Valentine's Day. During those months, there would be a considerable number of tours and bookings.

The property consists of two chapels, three banquet rooms that can become one, and two or three individual spaces, depending on the reception or meeting size. Two additional banquet spaces upstairs that can also become one, depending on the size of the reception or meeting size. There are a total of six brides and grooms dressing rooms, two additional conference rooms, two sales offices, the general manager's office and an accounting office. There would also be a large full-service kitchen with two complete service lines. There would be one for domestic food and one for ethnic food preparation. The upstairs also includes a full video studio that would be the central hub for all the live recordings and room monitor viewing. All the events that have the full video production as part of either weddings/receptions or corporate events would be live broadcast to the banquet room monitors and to live Youtube channels, which would be able to be seen live as the event is taking place.

Family Entertainment Center (Three Strikes): Three Strikes would be an FEC (Family Entertainment Center). The new Family Entertainment Center would include the following venues all operated by staff and management: Bowling, Redemption Style Arcade, Full-Service Restaurant, Beer Garden, Pro Shop, and approximately 10 banquet rooms for private parties and corporate events.

The total maximum occupant load based on the 40-lane designed bowling alley would be 5 persons per lane for a total of 200 people in the lanes and banquet space areas. If all the lanes would be used the banquet rooms for parties would actually be occupied by the same people in attendance. The other area that would have occupancy would be the skybox and arcade which holds approximately 120 people. The restaurant and beer garden areas an additional a total of maximum capacity an additional 165 patrons. Therefore, the total maximum capacity is approximately 485 persons.

GENERAL PLAN AND ZONING DESIGNATIONS

The Manteca General Plan land use designation for the project site is Commercial (consistent with the proposed project). This designation exists under the previous General Plan (adopted in 2008), as well as the recently General Plan Update (adopted March 2024). The Commercial land use designation category provides for neighborhood, community, and regional-serving retail and service uses; offices; restaurants; service stations; highway-oriented and visitor commercial and lodging; auto-serving and heavy commercial uses; wholesale; warehousing; public and quasi-public uses; commercial recreation and public gathering facilities, such as amphitheaters or public gardens; and similar and compatible uses. Uses that are incompatible with residential uses due to noise, vibration, or other characteristics are not permitted in locations that may impact existing or future residential development.

The current zoning for the project site is General Commercial (GC), which is consistent with the proposed project. This category provides for wholesale, warehousing, and heavy commercial uses, highway-oriented commercial retail, public and quasi-public uses, and similar and compatible uses. The designation is also intended to accommodate visitor lodging, commercial

recreation and public gathering facilities, such as amphitheaters, or public gardens. It also allows most neighborhood and mixed commercial uses.

REQUESTED ENTITLEMENTS AND OTHER APPROVALS

The City of Manteca is the Lead Agency for the proposed project, pursuant to the State Guidelines for Implementation of CEQA (Guidelines Section 15050).

This document will be used by the City of Manteca to take the following actions:

- Adoption of the CEQA Exemption (Guidelines Section 15183).
- Development Review.
- Approval of the Site Plan.

The following agencies may be required to issue permits or approve certain aspects of the proposed project:

- Central Valley Regional Water Quality Control Board (CVRWQCB) - Storm Water Pollution Prevention Plan (SWPPP) approval prior to construction activities.
- San Joaquin Valley Air Pollution Control District (SJVAPCD) - Approval of construction-related air quality permits.
- San Joaquin Council of Governments (SJCOG) - Review of project application to determine consistency with the San Joaquin County Multi-Species Habitat, Conservation, and Open Space Plan (SJMSCP).

PREVIOUS ENVIRONMENTAL ANALYSES OF THE PROPOSED PROJECT

One previous environmental analysis has been prepared and certified which is applicable to the proposed project.

The proposed Project is consistent with the previous General Plan, for which an EIR was certified. Additionally, in March 2024, the City adopted a new General Plan Update and certified the associated General Plan EIR (State Clearinghouse (SCH) # 2020019010). The proposed project would be consistent with the General Plan designation of Commercial under either General Plan. The certified General Plan EIR assumed full development and buildout of the project site, consistent with the uses and development standards proposed by the project. The cumulative impacts associated with buildout of the City of Manteca General Plan, including the project site, were fully addressed in the General Plan EIR.

CEQA GUIDELINES SECTION 15183 EXEMPTIONS

CEQA Guidelines Section 15183 allows a streamlined environmental review process for projects that are consistent with the densities established by existing zoning, community plan or general plan policies for which an Environmental Impact Report (EIR) was certified. As noted above, the proposed project is consistent with the land use designation and densities established by the Manteca General Plan, for which an EIR was certified. The provisions contained in Section 15183 of the CEQA Guidelines are presented below.

15183. Projects Consistent with a Community Plan or Zoning

(a) CEQA mandates that projects which are consistent with the development density established by existing zoning, community plan, or general plan policies for which an EIR was certified shall not require additional environmental review, except as might be necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site. This streamlines the review of such projects and reduces the need to prepare repetitive environmental studies.

(b) In approving a project meeting the requirements of this section, a public agency shall limit its examination of environmental effects to those which the agency determines, in an initial study or other analysis:

> *(1) Are peculiar to the project or the parcel on which the project would be located,*
> *(2) Were not analyzed as significant effects in a prior EIR on the zoning action, general plan, or community plan, with which the project is consistent,*
> *(3) Are potentially significant off-site impacts and cumulative impacts which were not discussed in the prior EIR prepared for the general plan, community plan or zoning action, or*
> *(4) Are previously identified significant effects which, as a result of substantial new information which was not known at the time the EIR was certified, are determined to have a more severe adverse impact than discussed in the prior EIR.*

(c) If an impact is not peculiar to the parcel or to the project, has been addressed as a significant effect in the prior EIR, or can be substantially mitigated by the imposition of uniformly applied development policies or standards, as contemplated by subdivision (e) below, then an additional EIR need not be prepared for the project solely on the basis of that impact.

(d) This section shall apply only to projects which meet the following conditions:

> *(1) The project is consistent with:*
>
> > *(A) A community plan adopted as part of a general plan,*
> > *(B) A zoning action which zoned or designated the parcel on which the project would be located to accommodate a particular density of development, or*
> > *(C) A general plan of a local agency, and*
>
> *(2) An EIR was certified by the lead agency for the zoning action, the community plan, or the general plan.*

(e) This section shall limit the analysis of only those significant environmental effects for which:

> *(1) Each public agency with authority to mitigate any of the significant effects on the environment identified in the planning or zoning action undertakes or requires others to undertake mitigation measures specified in the EIR which the lead agency found to be feasible, and*
> *(2) The lead agency makes a finding at a public hearing as to whether the feasible mitigation measures will be undertaken.*

(f) An effect of a project on the environment shall not be considered peculiar to the project or the parcel for the purposes of this section if uniformly applied development policies or standards have been previously adopted by the City or county with a finding that the development policies or standards will substantially mitigate that environmental effect when applied to future projects, unless substantial new information shows that the policies or standards will not substantially mitigate the environmental effect. The finding shall be based on substantial evidence which need not include an EIR. Such development policies or standards need not apply throughout the entire City or county, but can apply only within the zoning district in which the project is located, or within the area subject to the community plan on which the lead agency is relying. Moreover, such policies or standards need not be part of the general plan or any community plan, but can be found within another pertinent planning document such as a zoning ordinance. Where a City or county, in previously adopting uniformly applied development policies or standards for imposition on future projects, failed to make a finding as to whether such policies or standards would substantially mitigate the effects of future projects, the decision-making body of the City or county, prior to approving such a future project pursuant to this section, may hold a public hearing for the purpose of considering whether, as applied to the project, such standards or policies would substantially mitigate the effects of the project. Such a public hearing need only be held if the City or county decides to apply the standards or policies as permitted in this section.

(g) Examples of uniformly applied development policies or standards include, but are not limited to:

(1) Parking ordinances.
(2) Public access requirements.
(3) Grading ordinances.
(4) Hillside development ordinances.
(5) Flood plain ordinances.
(6) Habitat protection or conservation ordinances.
(7) View protection ordinances.
(8) Requirements for reducing greenhouse gas emissions, as set forth in adopted land use plans, policies, or regulations.

(h) An environmental effect shall not be considered peculiar to the project or parcel solely because no uniformly applied development policy or standard is applicable to it.

(i) Where the prior EIR relied upon by the lead agency was prepared for a general plan or community plan that meets the requirements of this section, any rezoning action consistent with the general plan or community plan shall be treated as a project subject to this section.

(1) "Community plan" is defined as a part of the general plan of a City or county which applies to a defined geographic portion of the total area included in the general plan, includes or references each of the mandatory elements specified in Section 65302 of the Government Code, and contains specific development policies and implementation measures which will apply those policies to each involved parcel.
(2) For purposes of this section, "consistent" means that the density of the proposed project is the same or less than the standard expressed for the involved parcel in the general plan,

community plan or zoning action for which an EIR has been certified, and that the project complies with the density-related standards contained in that plan or zoning. Where the zoning ordinance refers to the general plan or community plan for its density standard, the project shall be consistent with the applicable plan.

(j) This section does not affect any requirement to analyze potentially significant offsite or cumulative impacts if those impacts were not adequately discussed in the prior EIR. If a significant offsite or cumulative impact was adequately discussed in the prior EIR, then this section may be used as a basis for excluding further analysis of that offsite or cumulative impact.

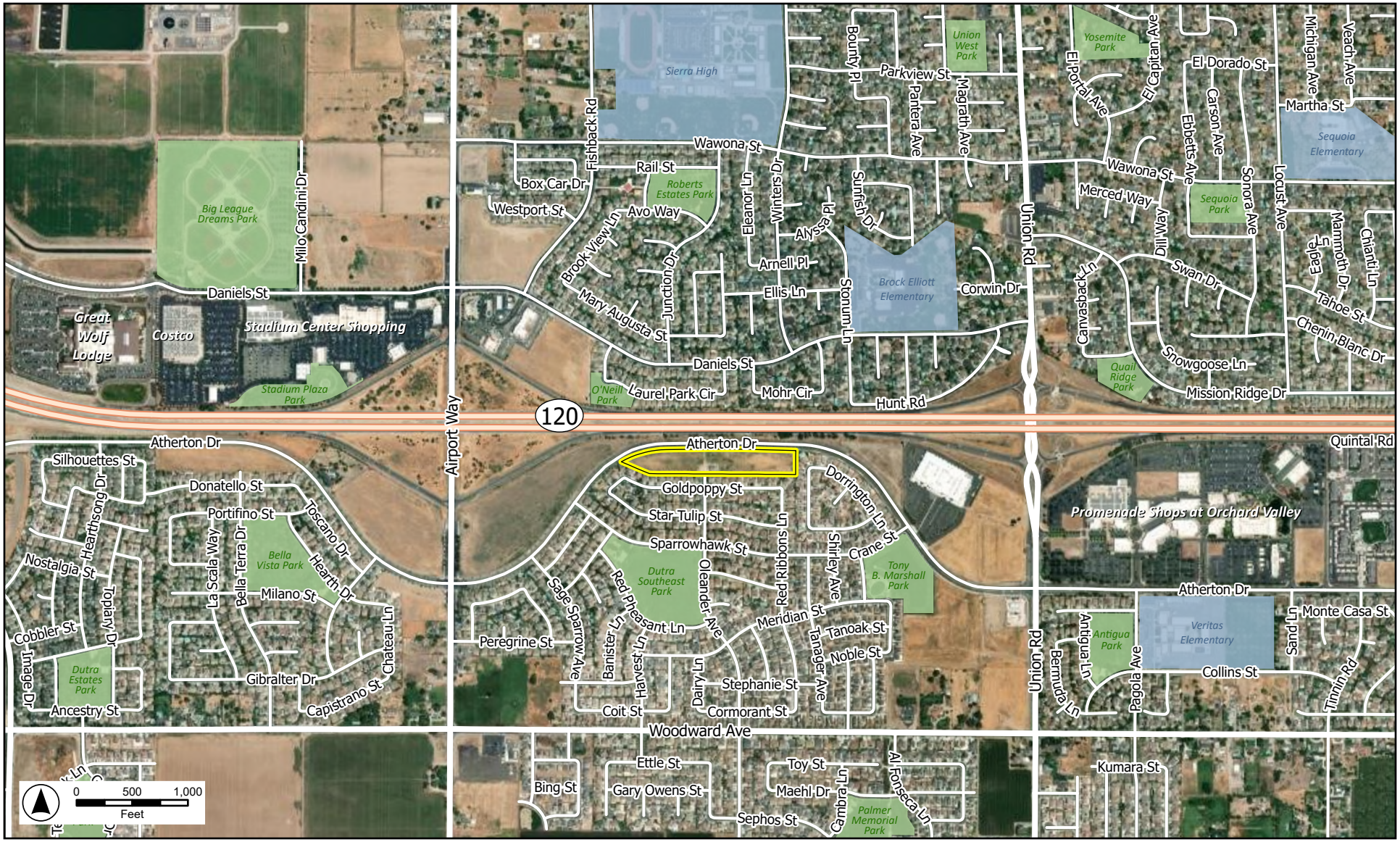
PROJECT-SPECIFIC ENVIRONMENTAL REVIEW

The attached Environmental Checklist includes a discussion and analysis of any peculiar or site-specific environmental impacts associated with construction and operation of the proposed project. The Environmental Checklist identifies the applicable City of Manteca development standards and policies that would apply to the proposed project during both the construction and operational phases, and explains how the application of these uniformly applied standards and policies would ensure that no peculiar or site-specific environmental impacts would occur.

CONCLUSION

As described above, the proposed Three Strikes FEC and Villa Banchetto Event Center (project) is consistent with the land use designations and development intensities assigned to the project site by the City of Manteca General Plan. Cumulative impacts associated with development and buildout of the project site, as proposed, were fully addressed in the City of Manteca General Plan EIR (SCH# 2020019010), as well as under the 2008 General Plan EIR. Since the proposed project is consistent with the land use designation and development intensity for the site identified in the General Plan and analyzed in the General Plan EIR, implementation of the proposed project would not result in any new or altered cumulative impacts beyond those addressed in the General Plan EIR.

The analysis in the attached CEQA Environmental Checklist demonstrates that there are no site-specific or peculiar impacts associated with the project, and identifies uniformly applied standards and policies that would be applied to the project. The Project Requirements identified in the attached environmental analysis include requirements that must be implemented by the proposed project in order to ensure that any site-specific impacts or construction-related impacts are reduced to a less than significant level. All Project Requirements identified in the attached Environmental Checklist shall be made a condition of project approval and shall be implemented within the timeframes identified.



Legend

- Project Boundary
- Public School
- Park

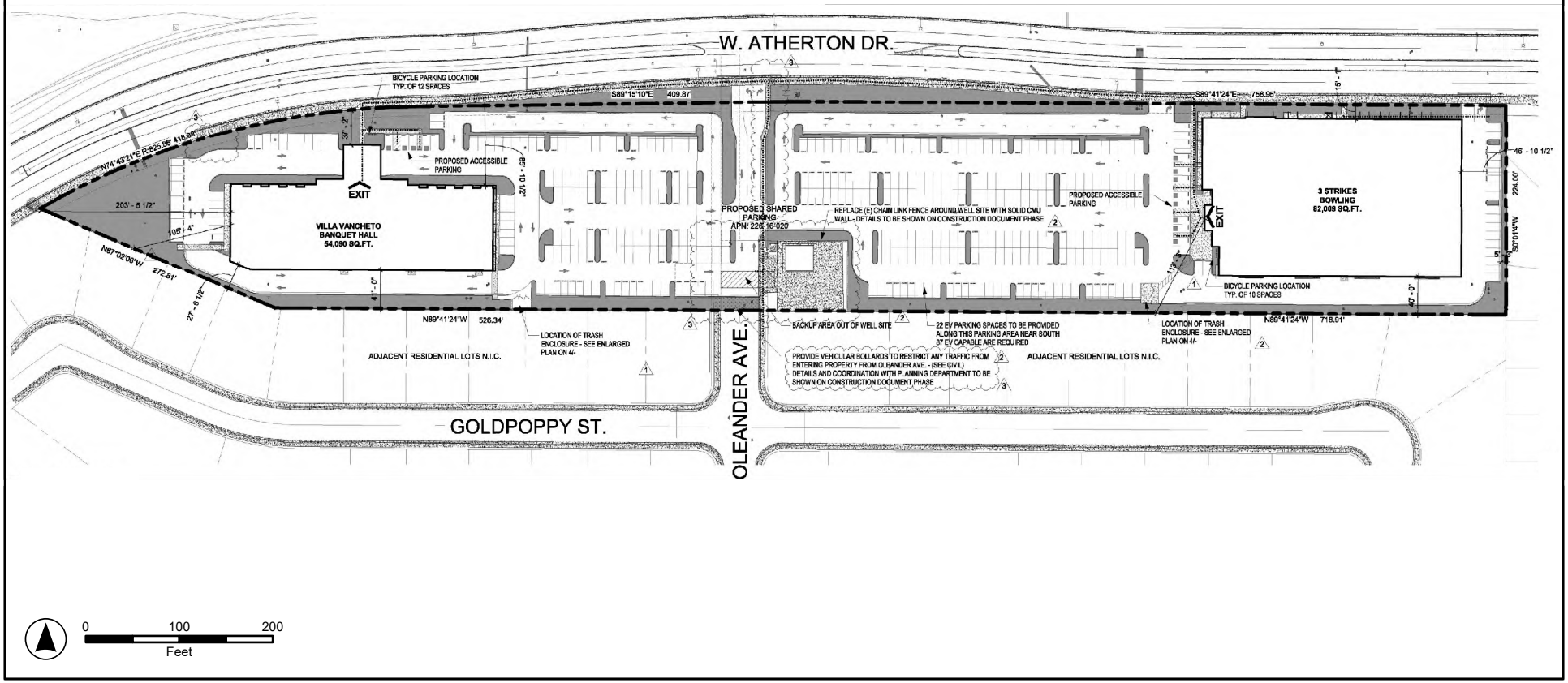
CITY OF MANTECA - THREE STRIKES FEC AND VILLA BANCHETTO EVEN CENTER PROJECT

Figure 1. Project Location

Sources: San Joaquin County GIS; Google Maps; MAXAR Aerial Imagery 8-7-2023. Map date: March 11, 2024.

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Legend

Project Boundary

CITY OF MANTECA - THREE STRIKES FEC AND VILLA BANCHETTO EVEN CENTER PROJECT

Figure 2. Site Plan

Source: Smith Architecture 11-15-23. Map date: March 12, 2024.

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ENVIRONMENTAL CHECKLIST

I. AESTHETICS -- WOULD THE PROJECT:

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

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant. There are no scenic vistas located on or adjacent to the project site. The proposed project uses are consistent and compatible with the surrounding land use designations. Lands surrounding the project site consist of commercial and residential uses.

Implementation of the proposed project would provide for additional commercial development on a project site that is bordered by similarly scaled development surrounding the Project site. The project site is not topographically elevated from the surrounding lands and is not highly visible from areas beyond the immediate vicinity of the site. There are no prominent features on the site, such as trees, rock outcroppings, or other visually distinctive features that contribute to the scenic quality of the site. The project site is not designated as a scenic vista by the City of Manteca General Plan.

Implementation of the proposed project would not significantly change the existing visual character of the project area, as much of the areas immediately adjacent to the site are used for commercial and residential purposes. Implementation of the proposed project would introduce a commercial development to the project area that would be generally consistent with the residential and planned commercial developments. Therefore, this impact is considered **less than significant**.

Response b): Less than Significant. There are no Officially Designated or Eligible State Scenic Highways within the General Plan planning area (Caltrans, 2019). Therefore, there is no

possibility of substantial damage to the viewshed of a State Scenic Highway and no impact would occur. The proposed project would not result in new or more severe impacts than what was previously disclosed in the General Plan EIR. No additional analysis is required. Therefore, this impact is considered **less than significant**.

Response c): Less than Significant. As described under Response a), above, the proposed project would add additional commercial uses to an area that currently contains numerous commercial and residential uses surrounding the project site. The proposed project would be visually compatible with the surrounding land uses and would not significantly degrade the existing visual quality of the site or the surrounding area.

The project site is located within an urbanized area, which includes incorporated cities of at least 100,000 persons or with a population of less than 100,000 persons if the population of that city and not more than two contiguous incorporated cities combined equals at least 100,000 persons. As of 2021, the City of Manteca has a population of approximately 85,000, but the City is contiguous with the City of Stockton, which has a population of approximately 322,000 (U.S. Census Bureau 2021). The project site is consistent with the underlying zoning and land use designation of General Commercial (City of Manteca, 2023), which provides for neighborhood, community, and regional-serving retail and service uses; offices; restaurants; service stations; highway-oriented and visitor commercial and lodging; auto-serving and heavy commercial uses; wholesale; warehousing; public and quasi-public uses; commercial recreation and public gathering facilities, such as amphitheaters or public gardens; and similar and compatible uses. There would be no project components taller than the height limit of 45 feet in the General Commercial Zone (Section 17.26.020 of the City's Municipal Code). The proposed project would not result in new or more severe impacts than what was previously disclosed in the General Plan EIR. No additional analysis is required. This is a **less than significant** impact.

Response d): Less than Significant. Daytime glare can occur when the sunlight strikes reflective surfaces such as windows, vehicle windshields and shiny reflective building materials. The proposed project would introduce new commercial buildings into the project site; however, reflective building materials are not proposed for use in the project, and as such, the project would not result in increases in daytime glare.

The area surrounding the project site is urbanized and there are existing sources of light and glare created by streetlights, car headlights, and interior and exterior lighting from buildings. The proposed project would create additional sources of light and glare from car headlights accessing the project site, as well as interior and exterior lighting. However, the proposed project would be required to implement any and all mitigation measures contained in the City's General Plan EIR relating to lighting and glare. Therefore, the proposed project would not result in new or more severe impacts than what was previously disclosed in the General Plan EIR. No additional analysis is required. The implementation of City standards and requirements would reduce any impacts related to light and glare to a **less than significant** level.

II. AGRICULTURE AND FOREST RESOURCES -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1222(g)) or timberland (as defined in Public Resources Code section 4526)?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

RESPONSES TO CHECKLIST QUESTIONS

Response a): No Impact. The project site is vacant and undeveloped. The General Plan EIR found that buildout of the General Plan would have a potentially significant impact on conversion of Important Farmland. However, the General Plan EIR concluded that the residual significance would be remain significant and unavoidable (City of Manteca, 2023). The proposed project would not result in new or more severe impacts than what was previously disclosed in the General Plan EIR. No additional analysis is required. As such, implementation of the proposed project would have **no impact** related to this environmental topic.

Response b): No Impact. The proposed project is not zoned for agricultural use and there is no have a Williamson Act contract. Therefore, the proposed project would not result in new or more severe impacts than what was previously disclosed in the General Plan EIR. No additional analysis is required. As such, there is **no impact**.

Responses c) and d): No Impact. The project site is located in an area consisting of residential and commercial development. There are no forest resources on the project site or in the immediate vicinity of the project site. Therefore, there is **no impact**.

Response e): No Impact. As described under Responses (a) and (b) above, the proposed project site is not currently designated or zoned for agricultural uses. The project site is also not currently used for agricultural purposes and does not contain forest resources. There is **no impact** related to this environmental topic.

III. AIR QUALITY -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?			X	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

EXISTING SETTING

The project site is located within the boundaries of the San Joaquin Valley Air Pollution Control District (SJVAPCD). This agency is responsible for monitoring air pollution levels and ensuring compliance with federal and state air quality regulations within the San Joaquin Valley Air Basin (SJVAB) and has jurisdiction over most air quality matters within its borders.

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b): Less than Significant. The proposed project would be both a direct and indirect source of air pollution. Direct sources of pollution include area, energy, and water and waste sources, due to development of the on-site buildings and associated infrastructure. Indirect sources of pollution would be due to the generation of trips of from vehicles traveling to and from the Project site.

CalEEMod™ (v.2022.1) was used to model operational emissions of the proposed Project. Table Air-1 shows proposed Project emissions as provided by CalEEMod. Further detail is provided in Appendix A. The SJVAPCD provides a list of applicable air quality emissions thresholds.

Table AIR-1: Operational Project Generated Emissions (tons per year)

POLLUTANT	*CO*	*NOX*	*ROG*	*SOX*	*PM_{10}*	*$PM_{2.5}$*
THRESHOLD	100	10	10	27	15	15
EMISSIONS	1.89	0.37	0.62	<0.01	0.29	0.08
EXCEEDS THRESHOLD?	**N**	**N**	**N**	**N**	**N**	**N**

SOURCES: CALEEMOD (V.2022.1)

The SJVAPCD has established their thresholds of significance by which the Project emissions are compared against to determine the level of significance. The SJVAPCD has established operations related emissions thresholds of significance as follows: 100 tons per year of carbon monoxide (CO, 10 tons per year of oxides of nitrogen (NO_x), 10 tons per year of reactive organic gases (ROG),

27 tons per year of sulfur oxides (SO_x), 15 tons per year particulate matter of 10 microns or less in size (PM_{10}), and 15 tons per year particulate matter of 2.5 microns or less in size ($PM_{2.5}$). If the proposed Project's emissions will exceed the SJVAPCD's threshold of significance for operational-generated emissions, the proposed Project will have a significant impact on air quality and all feasible mitigation are required to be implemented to reduce emissions to the extent feasible. As shown in Table AIR-1 above, operational emissions would not exceed any of the SJVACPD operational thresholds of significance.

Separately, emissions from construction activities represent temporary impacts that are typically short in duration, depending on the size, phasing, and type of project. Air quality impacts can nevertheless be acute during construction periods, resulting in significant localized impacts to air quality. Construction-related activities would result in Project-generated emissions from demolition, site preparation, grading, paving, building construction, and architectural coatings. CalEEMod™ (v.2022.1) was used to estimate construction emissions for the proposed Project. Table AIR-2, below, provides the construction criteria pollutant emissions associated with implementation of the proposed Project. Further detail is provided in Appendix A.

Table AIR-2: Maximum Construction Project Generated Emissions (tons per year)

POLLUTANT	*CO*	*NOX*	*ROG*	*SOX*	*PM_{10}*	*$PM_{2.5}$*
THRESHOLD	100	10	10	27	15	15
EMISSIONS	1.92	1.60	0.18	<0.01	0.28	0.16
EXCEEDS THRESHOLD?	**N**	**N**	**N**	**N**	**N**	**N**

SOURCES: CALEEMOD (V.2022.1)

If the proposed Project's emissions will exceed the SJVAPCD's threshold of significance for construction-generated emissions, the proposed Project will have a significant impact on air quality and all feasible mitigation are required to be implemented to reduce emissions. As shown in Table AIR-2, Project maximum construction emissions would not exceed the SJVAPCD thresholds of significance. Nevertheless, regardless of emission quantities, the SJVAPCD requires construction related control measures in accordance with their rules and regulations. Implementation of these control measures (provided in further detail below) would further reduce proposed Project construction related emissions to the extent possible.

The first step is to prepare a Dust Control Plan that meets all of the applicable requirements of APCD Rule 8021. All construction activities are required to implement dust control measures, as required by APCD Rules 8011-8081, to limit Visible Dust Emissions to 20% opacity or less. Dust control measures include application of water or chemical dust suppressants to unpaved roads and graded areas, covering or stabilization of transported bulk materials, prevention of carryout or trackout of soil materials to public roads, limiting the area subject to soil disturbance, construction of wind barriers, access restrictions to inactive sites as required by the applicable rules. The following dust control practices are identified in Tables 6-2 and 6-3 of the GAMAQI (2002):

a. *All disturbed areas, including storage piles, which are not being actively utilized for*

construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover.

b. *All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.*
c. *All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall control fugitive dust emissions by application of water or by presoaking.*
d. *When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least six inches of freeboard space from the top of the container shall be maintained.*
e. *All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.*
f. *Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.*
g. *Limit traffic speeds on unpaved roads to 15 mph.*
h. *Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.*

The proposed Project would comply with pre-existing requisite federal, State, SJVAPCD, and other local regulations and requirements, as well as implement the control measures provided by the SJVAPCD for construction-related PM_{10} emissions.

CONCLUSION

The proposed project would comply with pre-existing requisite federal, State, SJVAPCD, and other local regulations and requirements, as well as implement the control measures provided by the SJVAPCD for construction-related PM_{10} emissions. Compliance with the existing rules and regulations would ensure that the Project's criteria pollutant emissions would be considered to have a **less than significant** impact.

Response c): Less than Significant. A toxic air contaminant (TAC) is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at very low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the state and federal governments have set ambient air quality standards.

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. EPA regulate 188 air toxics, also known as hazardous air pollutants. The U.S. EPA has assessed this expansive list in

their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources. In addition, the U.S. EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment. These are acrolein, benzene, 1,3-butidiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter.

The 2007 U.S. EPA rule requires controls that will dramatically decrease Mobile Source Air Toxics (MSAT) emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (VMT) increases by 145 percent, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050. California maintains stricter standards for clean fuels and emissions compared to the national standards, therefore it is expected that MSAT trends in California will decrease consistent with or more than the U.S. EPA's national projections.

The California Air Resources Board (CARB) published the *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB, 2005) to provide information to local planners and decision-makers about land use compatibility issues associated with emissions from industrial, commercial and mobile sources of air pollution. The CARB Handbook indicates that mobile sources continue to be the largest overall contributors to the State's air pollution problems, representing the greatest air pollution health risk to most Californians. The most serious pollutants on a statewide basis include diesel exhaust particulate matter (diesel PM), benzene, and 1,3-butadiene, all of which are emitted by motor vehicles. These mobile source air toxics are largely associated with freeways and high traffic roads. Non-mobile source air toxics are largely associated with industrial and commercial uses. Table 1-8 provides the California Air Resources Board minimum separation recommendations on siting sensitive land uses.

Table 1-8: CARB Minimum Separation Recommendations on Siting Sensitive Land Uses

SOURCE CATEGORY	*ADVISORY RECOMMENDATIONS*
Freeways and High-Traffic Roads	• Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	• Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). • Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	• Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. • Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	• Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the CARB on the status of pending analyses of health risks.
Refineries	• Avoid siting new sensitive land uses immediately downwind of petroleum

	refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	• Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloro-ethylene	• Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. • Do not site new sensitive land uses in the same building with perc dry cleaning operations.
Gasoline Dispensing Facilities	• Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities.

SOURCES: AIR QUALITY AND LAND USE HANDBOOK: A COMMUNITY HEALTH PERSPECTIVE" (CARB 2005)

The proposed project does not include any sensitive land uses. Additionally, the proposed project itself is not a sensitive land use. Since the proposed Project would not site land uses that would generate a significant risk of public exposure to TACs, the proposed Project would have a **less than significant** impact relative to this topic.

Response d): Less than Significant. Operation of the proposed project would not generate notable odors. The commercial uses included in the proposed project are compatible with the surrounding existing and proposed land uses. People in the immediate vicinity of construction activities may be subject to temporary odors typically associated with construction activities (diesel exhaust, hot asphalt, etc.). However, any odors generated by construction activities would be minor and would be short and temporary in duration.

Examples of facilities that are known producers of operational odors include: Wastewater Treatment Facilities, Chemical Manufacturing, Sanitary Landfill, Fiberglass Manufacturing, Transfer Station, Painting/Coating Operations (e.g. auto body shops), Composting Facility, Food Processing Facility, Petroleum Refinery, Feed Lot/Dairy, Asphalt Batch Plant, and Rendering Plant. If a project would locate receptors and known odor sources in proximity to each other further analysis may be warranted; however, if a project would not locate receptors and known odor sources in proximity to each other, then further analysis is not warranted. The project does not propose sensitive receptors that could be exposed to odors in the vicinity. Should any of the future commercial uses generate odors during construction, the odors would be contained within the building envelope and proper ventilation would be provided. This is a **less than significant** impact.

IV. BIOLOGICAL RESOURCES -- WOULD THE PROJECT:

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

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant. Special-status invertebrates that occur within the San Joaquin County region include: longhorn fairy shrimp, vernal pool fairy shrimp, and midvalley fairy shrimp, which requires vernal pools and swale areas within grasslands; and the valley elderberry longhorn beetle, which is an insect that is only associated with blue elderberry plants, oftentimes in riparian areas and sometimes on land in the vicinity of riparian areas.

The project site does not contain essential habitat for these special status invertebrates. Implementation of the proposed project would have a **less than significant** impact on these species.

Special-status reptiles and amphibians that occur within the region include: the western pond turtle, which requires aquatic environments located along ponds, marshes, rivers, and ditches; the California tiger salamander, which is found is grassland habitats where there are nearby

seasonal wetlands for breeding; the silvery legless lizard, which is found in sandy or loose loamy soils under sparse vegetation with high moisture content; San Joaquin whipsnake, which requires open, dry habitats with little or no tree cover with mammal burrows for refuge; the Alameda whipsnake, which is restricted to valley-foothill hardwood habitat on south-facing slopes; the California horned lizard, which occurs in a variety of habitats including, woodland, forest, riparian, and annual grasslands, usually in open sandy areas; the foothill yellow-legged frog, which occurs in partly shaded and shallow streams with rocky soils; the California red legged frog, which occurs in stream pools and ponds with riparian or emergent marsh vegetation; and the western spadefoot toad, which requires grassland habitats associated with vernal pools. The project site does not contain essential habitat for these special status reptiles and amphibians. Implementation of the proposed project would have a **less than significant** impact on these species.

Numerous special-status plant species are known to occur in the region. Many of these special status plant species require specialized habitats such as serpentine soils, rocky outcrops, slopes, vernal pools, marshes, swamps, riparian habitat, alkali soils, and chaparral, which are not present on the project site. The project site is located in an area that was likely valley grassland prior to human settlement, and there are several plant species that are found in valley and foothills grasslands areas. These species include large-flowered fiddleneck, bent-flowered fiddleneck, big-balsamroot, big tarplant, round-leaved filaree, Lemmon's jewelflower, and showy golden madia. Human settlement has involved a high frequency of ground disturbance associated with the historical farming activities in the region, including the project site. The project site does not contain suitable habitat for special-status plant species. Implementation of the proposed project would have a **less than significant** impact on these species.

Special-status birds that occur within the region include: tricolored blackbird, Swainson's hawk, northern harrier, and bald eagle, which are associated with streams, rivers, lakes, wetlands, marshes, and other wet environments; loggerhead shrike, and burrowing owl, which lives in open areas, usually grasslands, with scattered trees and brush; and raptors that are present in varying habitats throughout the region.

Swainson's Hawk. The Swainson's hawk is threatened in California and is protected by the California Department of Fish and Wildlife (CDFW) and the Migratory Bird Treaty Act (MBTA). Additionally, Swainson's hawk foraging habitat is protected by the CDFG. Swainson's hawks forage in open grasslands and agricultural fields and commonly nest in solitary trees and riparian areas in close proximity to foraging habitat. The foraging range for Swainson's hawk is ten miles from its nesting location. The project site and the scattered open non-native grassland habitat to the may provide medium quality foraging opportunities for local Swainson's hawks. Incidental take minimization measures are required for this species due to the fact that there is suitable nesting and foraging habitat on the project site. The implementation of Project Requirement 1 would ensure that Swainson's hawks are not impacted during construction activities. The implementation of Project Requirement 1 would ensure a **less than significant** impact to Swainson's hawks.

Burrowing Owls. Burrowing owls are a California Species of Special Concern and are protected by the CDFG and the MBTA. Burrowing owls forage in open grasslands and shrublands and typically nest in old ground squirrel burrows. The project site contains suitable, but not high-quality habitat for burrowing owls. Impacts to burrowing owls are considered unlikely, due to the presence of urban development surrounding the site to the north, south, east, and west. However, the land to the north of the project site contains rural residential uses and some agricultural land which offers moderate foraging and roosting habitat for wintering or breeding owls. The implementation of Project Requirement 1 would ensure that burrowing owls are not impacted during construction activities. The implementation of Project Requirement 1 would ensure that the project implements the requirements specified in the General Plan to protect biological resources.

Project Requirement(s)

Project Requirement 1: *Prior to the commencement of grading activities or other ground disturbing activities on the project site, the project applicant shall arrange for a qualified biologist to conduct a preconstruction survey for western burrowing owls. If no owls or owl nests are detected, then construction activities may commence. If burrowing owls or occupied nests are discovered, then the following shall be implemented:*

- *During the breeding season (February 1 through September 1) occupied burrows shall not be disturbed and shall be provided with a 75 meter protective buffer until and unless the SJCOG Technical Advisory Committee (TAC), with the concurrence of the Permitting Agencies' representatives on the TAC; or unless a qualified biologist approved by the Permitting Agencies verifies through non-invasive means that either: 1) the birds have not begun egg laying, or 2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. Once the fledglings are capable of independent survival, the burrow can be destroyed. They should only be destroyed by a qualified biologist using passive one-way eviction doors to ensure that owls are not harmed during burrow destruction. Methods for removal of burrows are described in the California Department of Fish and Game's Staff Report on Burrowing Owls (October, 1995)*

- *During the non-breeding season (September 1 through January 31) burrowing owls occupying the project site should be evicted from the project site by passive relocation as described in the California Department of Fish and Game's Staff Report on Burrowing Owls (Oct., 1995)*

Implementation of this requirement shall occur prior to grading or site clearing activities. SJCOG shall be responsible for monitoring and a qualified biologist shall conduct surveys and relocate owls as required.

Response b): No Impact. Riparian natural communities support woody vegetation found along rivers, creeks and streams. Riparian habitat can range from a dense thicket of shrubs to a closed canopy of large mature trees covered by vines. Riparian systems are considered one of the most important natural resources. While small in total area when compared to the state's size, they provide a special value for wildlife habitat.

Over 135 California bird species either completely depend upon riparian habitats or use them preferentially at some stage of their life history. Riparian habitat provides food, nesting habitat, cover, and migration corridors. Another 90 species of mammals, reptiles, invertebrates and amphibians depend on riparian habitat. Riparian habitat also provides riverbank protection, erosion control and improved water quality, as well as numerous recreational and aesthetic values.

There is no riparian habitat or other sensitive natural communities located on the project site. As such, the proposed project would have **no impact** on these resources, and no mitigation is required.

Response c): Less than Significant. A wetland is an area that is inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Wetlands are defined by regulatory agencies as having special vegetation, soil, and hydrology characteristics. Hydrology, or water inundation, is a catalyst for the formation of wetlands. Frequent inundation and low oxygen causes chemical changes to the soil properties resulting in what is known as hydric soils. The prevalent vegetation in wetland communities consists of hydrophytic plants, which are adapted to areas that are frequently inundated with water. Hydrophytic plant species have the ability to grow, effectively compete, reproduce, and persist in low oxygen soil conditions.

There are no wetlands located on the project site. Therefore, this is a **less than significant** impact and no mitigation is required.

Response d): Less than Significant. There are no documented wildlife corridors or wildlife nursery sites on or adjacent to the project site. Implementation of the proposed project would have a **less than significant** impact.

Responses e), f): Less than Significant. The project site is located within the jurisdiction of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan ("Plan" or "SJMSCP") and is located within the Central/Southwest Transition Zone of the SJMSCP. The San Joaquin Council of Governments (SJCOG) prepared the Plan pursuant to a Memorandum of Understanding adopted by SJCOG, San Joaquin County, the United States Fish and Wildlife Service (USFWS), the CDFW, Caltrans, and the cities of Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton, and Tracy in October 1994. On February 27, 2001, the Plan was unanimously adopted in its entirety by SJCOG.

According to Chapter 1 of the SJMSCP, its key purpose is to "provide a strategy for balancing the need to conserve open space and the need to convert open space to non-open space uses, while protecting the region's agricultural economy; preserving landowner property rights; providing for the long-term management of plant, fish and wildlife species, especially those that are currently listed, or may be listed in the future, under the Federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA); providing and maintaining multiple use Open

Spaces which contribute to the quality of life of the residents of San Joaquin County; and, accommodating a growing population while minimizing costs to project proponents and society at large."

In addition to providing compensation for conversion of open space to non-open space uses, which affect plant and animal species covered by the SJMSCP, the SJMSCP also provides some compensation to offset impacts of open space conversions on non-wildlife related resources such as recreation, agriculture, scenic values and other beneficial open space uses. Specifically, the SJMSCP compensates for conversions of open space to urban development and the expansion of existing urban boundaries, among other activities, for public and private activities throughout the County and within Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton, and Tracy.

Participation in the SJMSCP is voluntary for both local jurisdictions and project applicants. Only agencies adopting the SJMSCP would be covered by the SJMSCP. Individual project applicants have two options if their project is located in a jurisdiction participating in the SJMSCP: mitigating under the SJMSCP or negotiating directly with the state and/or federal permitting agencies. If a project applicant opts for SJMSCP coverage in a jurisdiction that is participating under the SJMSCP, the following options are available, unless their activities are otherwise exempted: pay the appropriate fee; dedicate, as conservation easements or fee title, habitat lands; purchase approved mitigation bank credits; or, propose an alternative mitigation plan.

Responsibilities of permittees covered by the SJMSCP include collection of fees, maintenance of implementing ordinances/resolutions, conditioning permits (if applicable), and coordinating with the Joint Powers Authority (JPA) for Annual Report accounting. Funds collected for the SJMSCP are to be used for the following: acquiring Preserve lands, enhancing Preserve lands, monitoring and management of Preserve lands in perpetuity, and the administration of the SJMSCP. Because the primary goal of SJMSCP is to preserve productive agricultural use that is compatible with SJMSCP's biological goals, most of the SJMSCP's Preserve lands would be acquired through the purchase of easements in which landowners retain ownership of the land and continue to farm the land. These functions are managed by SJCOG.

The proposed project is classified as Urban Habitat under the SJMSCP. The proposed project was analyzed for consistency with the SJMSCP by De Novo Planning Group, and it was determined that the proposed project would not conflict with the SJMSCP. The City of Manteca and the project applicant shall consult with SJCOG to utilize coverage of the project pursuant to the SJMSCP prior to development of the site, as provided under Project Requirement 2. The implementation of Project Requirement 2 would ensure that the project implements the requirements specified in the General Plan to protect biological resources.

Project Requirement(s)

Project Requirement 2: *Prior to development of the site, including the commencement of grading activities, the City of Manteca and the project applicant shall consult with SJCOG to utilize coverage of the project pursuant to the SJMSCP*.

V. CULTURAL RESOURCES -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Cause a substantial adverse change in the significance of a historical resource pursuant to '15064.5?			X	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?			X	
c) Disturb any human remains, including those interred outside of formal cemeteries?			X	

RESPONSES TO CHECKLIST QUESTIONS

Response a), b), c): Less than Significant. Because the site has been previously disturbed by the agricultural operations, it is not anticipated that site grading and preparation activities would result in impacts to cultural, historical, archaeological or paleontological resources. There are no known human remains located on the project site, nor is there evidence to suggest that human remains may be present on the project site. However, as with most projects in California that involve ground-disturbing activities, there is the potential for discovery of a previously unknown cultural and historical resource or human remains.

The implementation of Project Requirement 3 would require appropriate steps to preserve and/or document any previously undiscovered resources that may be encountered during construction activities, including human remains. The implementation of Project Requirement 3 would ensure that the project implements the requirements specified in the General Plan to protect cultural resources.

Project Requirement(s)

Project Requirement 3: *If any prehistoric or historic artifacts, human remains or other indications of archaeological resources are found during grading and construction activities, an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, shall be consulted to evaluate the finds and recommend appropriate mitigation measures.*

- *If cultural resources or Native American resources are identified, every effort shall be made to avoid significant cultural resources, with preservation an important goal. If significant sites cannot feasibly be avoided, appropriate mitigation measures, such as data recovery excavations or photographic documentation of buildings, shall be undertaken consistent with applicable state and federal regulations.*
    - *If human remains are discovered, all work shall be halted immediately within 50 meters (165 feet) of the discovery, the County Coroner must be notified, according to Section 5097.98 of the State Public Resources Code and Section*

7050.5 of California's Health and Safety Code. If the remains are determined to be Native American, the coroner will notify the Native American Heritage Commission, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed.

- *If any fossils are encountered, there shall be no further disturbance of the area surrounding this find until the materials have been evaluated by a qualified paleontologist, and appropriate treatment measures have been identified.*

VI. ENERGY

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

RESPONSES TO CHECKLIST QUESTIONS

Responses a-b): Less than Significant. Appendix G of the State CEQA Guidelines requires consideration of the potentially significant energy implications of a Project. CEQA requires mitigation measures to reduce "wasteful, inefficient and unnecessary" energy usage (Public Resources Code Section 21100, subdivision [b][3]). According to Appendix G of the CEQA Guidelines, the means to achieve the goal of conserving energy include decreasing overall energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy sources. In particular, the proposed project would be considered "wasteful, inefficient, and unnecessary" if it were to violate state and federal energy standards and/or result in significant adverse impacts related to project energy requirements, energy inefficiencies, energy intensiveness of materials, cause significant impacts on local and regional energy supplies or generate requirements for additional capacity, fail to comply with existing energy standards, otherwise result in significant adverse impacts on energy resources, or conflict or create an inconsistency with applicable plan, policy, or regulation.

The amount of energy used at the project site would directly correlate to the energy consumption (including fuel) used by vehicle trips generated during project construction, fuel used by off-road construction vehicles during construction, fuel used by vehicles during project operation, and electricity usage during project operation.

The proposed project would comply with all existing energy standards, including those established by the City of Manteca and San Joaquin County. For example, buildings developed as part of the proposed project would be required to comply with the latest version of the California Building Energy Efficiency Standards (Title 24), which require a high degree of energy efficiency for new buildings. Additionally, the project would be required to comply with other statewide measures, including those intended to improve the energy efficiency of the statewide passenger and heavy-duty truck vehicle fleet (e.g., the Pavley Bill and the Low Carbon Fuel Standard), which improve vehicle fuel economies, thereby conserving gasoline and diesel fuel for any trips that would be generated by the project. These energy savings would continue to accrue over time.

The amount of energy used by the proposed project during operation would include the amount of energy used by the project building and outdoor lighting, the fuel used by vehicle trips generated during operation, and fuel used by project maintenance activities during project operation. For construction, the proposed project would not require energy consumption that would out of the ordinary for a project of its size and type.

Overall, the proposed project would not violate any state or federal energy standards and/or result in significant adverse impacts related to project energy requirements, energy efficiencies, energy intensiveness of materials, cause significant impacts on local and regional energy supplies or generate requirements for additional capacity, fail to comply with existing energy standards, otherwise result in significant adverse impacts on energy resources, or conflict or create an inconsistency with applicable plan, policy, or regulation. Therefore, the proposed project would not be expected cause an inefficient, wasteful, or unnecessary use of energy resources nor cause a significant impact on any of the threshold as described by Appendix G of the CEQA Guidelines. This is a **less than significant** impact.

VII. GEOLOGY AND SOILS -- WOULD THE PROJECT:

	Potentially Significant Impact	***Less Than Significant with Mitigation***	***Less Than Significant Impact***	***No Impact***
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			X	
e) 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?				X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	

RESPONSES TO CHECKLIST QUESTIONS

Responses a.i), a.ii): Less than Significant. The project site is located in an area of moderate to high seismicity. However, no known active faults cross the project site, and the site is not located within an Alquist-Priolo Earthquake Fault Zone. Nevertheless, relatively large earthquakes have historically occurred in the Bay Area and along the margins of the Central Valley. Many earthquakes of low magnitude occur every year in California.

Portions of the Great Valley fault are considered seismically active thrust faults; however, since the Great Valley fault segments are not known to extend to the ground surface, the State of

California has not defined Earthquake Fault Hazard Zones around the postulated traces. The Great Valley fault is considered capable of causing significant ground shaking at the site, but the recurrence interval is believed longer than for more distant, strike-slip faults. Further seismic activity can be expected to continue along the western margin of the Central Valley, and as with all projects in the area, the project will be designed to accommodate strong earthquake ground shaking, in compliance with the applicable California building code standards.

Since there are no known active faults crossing the project site and the site is not located within an Earthquake Fault Special Study Zone, the potential for ground rupture at the site is considered low.

An earthquake of moderate to high magnitude generated within the San Francisco Bay Region and along the margins of the central valley could cause considerable ground shaking at the site, similar to that which has occurred in the past. In order to minimize potential damage to the proposed structures caused by groundshaking, all construction would comply with the latest California Building Code standards, as required by the City of Manteca Municipal Code.

Seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure, combined with the gravity forces of dead-and-live loads. The code-prescribed lateral forces are generally considered to be substantially smaller than the comparable forces that would be associated with a major earthquake. Therefore, structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage.

Building new structures for human use would increase the number of people exposed to local and regional seismic hazards. Seismic hazards are a significant risk for most property in California.

The City reviews all proposed development projects for consistency with the General Plan policies and California Building Code provisions identified above. This review occurs throughout the project application review and processing stage, and throughout plan check and building inspection phases prior to the issuance of a certificate of occupancy.

Consistency with the requirements of the California Building Code and the Manteca General Plan policies identified above would ensure that impacts on humans associated with seismic hazards would be **less than significant**.

Responses a.iii): Less than Significant. Liquefaction normally occurs when sites underlain by saturated, loose to medium dense, granular soils are subjected to relatively high ground shaking. During an earthquake, ground shaking may cause certain types of soil deposits to lose shear strength, resulting in ground settlement, oscillation, loss of bearing capacity, landsliding, and the buoyant rise of buried structures. The majority of liquefaction hazards are associated with sandy soils, some silty soils of low plasticity, and some gravelly soils. Cohesive soils are generally not considered to be susceptible to liquefaction. In general, liquefaction hazards are most severe within the upper 50 feet of the surface, except where slope faces or deep foundations are present.

Prior to development of the project site, a subsurface geotechnical investigation must be performed to identify onsite soil conditions and identify any site-specific engineering measures to be implemented during the construction of building foundations and subsurface utilities, as required under Project Requirement 4. Adherence to the engineering requirements contained in the subsurface geotechnical report would ensure that the project implements the requirements specified in the General Plan.

Project Requirement(s)

Project Requirement 4: *Prior to development of the project site, a subsurface geotechnical investigation must be performed to identify onsite soil conditions and identify any site-specific engineering measures to be implemented during the construction of building foundations and subsurface utilities.*

Responses a.iv): Less than Significant. The project site is relatively flat and there are no major slopes in the vicinity of the project site. As such, the project site is exposed to little or no risk associated with landslides. This is a **less than significant** impact.

Response b): Less than Significant. During the construction preparation process, exposed surfaces could be susceptible to erosion from wind and water. Effects from erosion include impacts on water quality and air quality. Exposed soils that are not properly contained or capped increase the potential for increased airborne dust and increased discharge of sediment and other pollutants into nearby stormwater drainage facilities. Risks associated with erosive surface soils can be reduced by using appropriate controls during construction and properly re-vegetating exposed areas. The proposed project would not result in new or substantially more severe impacts than identified in the General Plan EIR. Therefore, this is **less than significant** impact.

Responses c), d): Less than Significant. The potential for the project to be exposed to unstable soil conditions resulting from on-or off-site landslide, and liquefaction are discussed above under Responses a.iii, and a.iv., and were found to be **less than significant** impacts.

Lateral Spreading: The geologic conditions conducive to lateral spreading include gentle surface slope (0.3-5% slope), and liquefiable soils. The proposed project would not result in new or substantially more severe impacts than identified in the General Plan EIR. Therefore, this is **less than significant** impact.

Expansive Soils: Expansive Soils are those that undergo volume changes as moisture content fluctuates; swelling substantially when wet or shrinking when dry. Soil expansion, and settling can damage structures by cracking foundations, causing settlement and distorting structural elements. Expansion is a typical characteristic of clay-type soils. Expansive soils shrink and swell in volume during changes in moisture content, such as a result of seasonal rain events, and can cause damage to foundations, concrete slabs, roadway improvements, and pavement sections.

Soil expansion is dependent on many factors. The more clayey, critically expansive surface soil and fill materials will be subjected to volume changes during seasonal fluctuations in moisture content. To reduce the potential for post-construction distress to the proposed structures

resulting from swelling and shrinkage of these materials, a geotechnical evaluation is required by Project Requirement 4 in order to reduce the potential for damaging differential settlement of overlying improvements. Additionally, the California Building Code Title 24, Part 2, Chapter 18, Section 1803.1.1.2 requires specific geotechnical evaluation when a preliminary geotechnical evaluation determines that expansive or other special soil conditions are present, which, if not corrected, would lead to structural defects. As such, this is a **less than significant** impact.

Response e): No Impact. The project site would be served by public wastewater facilities and does not require an alternative wastewater system such as septic tanks. Implementation of the proposed project would have **no impact** on this environmental issue.

Response f): Less than Significant. The project site is located in an area known to have paleontological resources. The implementation of Project Requirement 3 would require appropriate steps to preserve and/or document any previously undiscovered resources that may be encountered during construction activities, including paleontological resources. As such, this is a **less than significant** impact.

XIII. GREENHOUSE GAS EMISSIONS – WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?			X	

BACKGROUND DISCUSSION

Various gases in the Earth's atmosphere, classified as atmospheric greenhouse gases (GHGs), play a critical role in determining the Earth's surface temperature. Solar radiation enters Earth's atmosphere from space, and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation.

Naturally occurring GHGs include water vapor (H_2O), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3). Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also GHGs, but they are, for the most part, solely a product of industrial activities. Although the direct GHGs, including CO_2, CH_4, and N_2O, occur naturally in the atmosphere, human activities have changed their atmospheric concentrations. From the pre-industrial era (i.e., ending about 1750) to 2011, concentrations of these three GHGs have increased globally by 40, 150, and 20 percent, respectively (IPCC, 2013).

Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), ozone (O_3), water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs).

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. Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2021, accounting for 39% of total GHG emissions in the state. This category was followed by the industrial sector (22%), the electricity generation sector (including both in-state and out of-state sources) (16%) and the agriculture and forestry sector (8%) (California Energy Commission, 2024).

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California produced approximately 381 million gross metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2021 (California Energy Commission, 2024). Given that the

U.S. EPA estimates that worldwide emissions from human activities totaled nearly 46 billion gross metric tons of carbon dioxide equivalents (BMTCO_2e) in 2010, California's incremental contribution to global GHGs is approximately 2% (U.S. EPA, 2014).

Carbon dioxide equivalents are a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant. 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, and 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. Implementation of the proposed Project would contribute to increases of GHG emissions that are associated with global climate change. Estimated GHG emissions attributable to future development would be primarily associated with increases of CO_2 and other GHG pollutants, such as methane (CH_4) and nitrous oxide (N_2O), from mobile sources and utility usage.

The proposed project's short-term construction-related and long-term operational GHG emissions were estimated using the California Emission Estimator Model (CalEEMod)™. CalEEMod is a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify GHG emissions from land use projects. The model quantifies direct GHG emissions from construction and operation (including vehicle use), as well as indirect GHG emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Emissions are expressed in annual metric tons of CO_2 equivalent units of measure (i.e., MT CO_2e), based on the global warming potential of the individual pollutants.

SHORT-TERM CONSTRUCTION GHG EMISSIONS

Estimated maximum mitigated GHG emissions associated with construction of the proposed Project are summarized in Table GHG-1. These emissions include all worker vehicle, vendor vehicle, hauler vehicle, and off-road construction vehicle GHG emissions. For the purposes of this analysis, based on input from the project proponents, the proposed project is assumed to commence construction in 2024 and finish in 2025. It should be noted that this schedule is an approximation and may change over time. A regularized construction schedule was utilized for modelling purposes for the sake of simplicity.

Table GHG-1: Maximum Construction GHG Emissions (Mitigated Average MT CO_2e/year)

YEAR	BIO- CO_2	NON-BIO- CO_2	TOTAL CO_2	CH_4	N_2O	CO_2E
2024	0	346	346	<0.1	<0.1	349

SOURCE: CALEEMOD (V.2022.1)

As presented in the table above, short-term construction emissions of GHGs are estimated at a maximum of approximately 349 MT CO_2e per year.

OPERATIONAL GHG EMISSIONS

The operational GHG emissions estimate for the proposed Project includes on-site area, energy, mobile, waste, and water emissions generated by the project during its operation. Estimated GHG emissions associated with the proposed project are summarized in Table 2-4, below. It should be noted that CalEEMod does not account for the Governor Newsom's Zero-Emission by 2035 Executive Order (N-79-20), which requires that all new cars and passenger trucks sold in California be zero-emission vehicles by 2035. Additionally, the CalEEMod modeling conducted does not account for the incorporation of additional Renewables Portfolio Standard attainment beyond CalEEMod defaults, incorporation of AB 341, and incorporation of Title 24 requirements for the EV charging stations. This is anticipated to substantially reduce the operational emissions associated with passenger vehicles (i.e. mobile emissions), energy emissions, and waste emissions, over time, including prior the 2035 final implementation year. Therefore, the operational emissions results are likely an overestimate for mobile, energy, and waste emissions. As shown in the following table, as conservatively modeled, the annual GHG emissions associated with the proposed Project would be approximately 777 MT CO_2e.

Table GHG-2: Operational GHG Emissions at Buildout (Metric Tons/Year)

	BIO- CO_2	NON-BIO- CO_2	TOTAL CO_2	CH_4	N_2O	CO_2E
Area	1.2	1.2	<0.1	<0.1	0	1.2
Energy	0	278	278	<0.1	<0.1	279
Mobile	0	294	294	<0.1	<0.1	300
Waste	46.1	0	46.1	4.6	0	161
Water	6.8	6.4	13.2	0.7	<0.1	35.4
Total	**52.9**	**580**	**633**	**5.4**	**<0.1**	**777**

SOURCE: CALEEMOD (V.2022.1)

Pacific Gas & Electric (PG&E), the electrical service provider for the Project site, will need to continue to annually increase renewable electricity through 2045 in order to meet the carbon-free electricity target set by SB 100. The project would need to comply with AB 341, which set a target of reducing landfill waste by 75 percent by 2020, and the Title 24 standards, which require incorporation of rooftop PV systems and solar panels, as well as electric vehicle charging capabilities. The potential reductions in GHG emission associated with this requirement were not incorporated in the reductions, as the amount would be confirmed at a later stage; therefore, the operational emissions shown in Table GHG-2 are conservative.

PROJECT CONSISTENCY WITH APPLICABLE PLANS

Several plans and policies have been adopted to reduce GHG emissions in the San Joaquin Valley region. The Project's consistency with the State's 2022 Scoping Plan, as well as the Fresno Council of Governments' (Fresno COG's) 2022 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS), and the City of Clovis General Plan are discussed below.

The CARB's 2022 Scoping Plan

The 2022 Scoping Plan strategies that are applicable to the project include reducing fossil fuel use, energy demand, and vehicle miles traveled (VMT); maximizing recycling and diversion from landfills; and increasing water conservation. The project would be consistent with these goals through Project design, which includes complying with the latest requirements of the CALGreen Code and Building Energy Efficiency Standards, providing EV parking spaces and charging equipment, and complying with the AB 341 waste diversion goal of 75 percent. In addition, the project would receive electricity from PG&E, which is required to reduce GHG emissions by increasing procurement from eligible renewable energy by set target years. Moreover, the project would provide extensive pedestrian connectivity to encourage alternative modes of transportation, and be consistent with the requirements of the latest (2022) version of the Title 24 Energy Code, or better. Therefore, the project would be consistent with the 2022 Scoping Plan.

SJCOG 2022 RTP/SCS

The SJCOG's 2022 RTP/SCS includes eight policies with corresponding implementation strategies for conserving energy, maximizing mobility and accessibility, increasing safety and security, preserving the transportation system, supporting economic development, promoting interagency cooperation and public participation, maximizing cost effectiveness, and improving quality of life for residents. These strategies include similar measures to the 2022 Scoping Plan, such as supporting energy and water efficiency. The Project's consistency with the applicable 2022 RTP/SCS strategies is discussed in Table GHG-3, below. As shown therein, the project would be consistent with the GHG emissions reduction strategies contained in the SJCOG's 2022 RTP/SCS.

Table GHG-3: Project Consistency with the SJCOG's 2022 RTP/SCS

POLICY	*PROJECT CONSISTENCY*
Enhance the Environment for Existing and Future Generations and Conserve Energy	No Conflict. The project would utilize electricity provided by Pacific Gas & Electric (PG&E) which is required to meet the year 2030, 2045, and 2050 performance standards. In addition, future development associated with project implementation would be required to meet the applicable requirements of the 2022 (or more current) Title 24 Building Energy Efficiency Standards.
Maximize Mobility and Accessibility	No Conflict. The project would support the use of zero-emission and low-emission vehicles, by implementing EV-ready charging spaces, consistent with the requirements of the 2022 Title 24 Building Energy Efficiency Standards.
Increase Safety and Security	No Conflict. The project would be developed using the latest State and local requirements relating to safety and security. Development of the project site would include other uses to

	support and compliment the proposed residential development include public utility infrastructure, public and private roadways, curb/gutters/sidewalks, other pedestrian facilities, private parking, street lighting, and street signage, which would enhance the safety and security of the site and it surroundings, by connecting to existing development.
Preserve the Efficiency of the Existing Transportation System	Not applicable. This is not a transportation improvement project and is therefore not applicable.
Support Economic Vitality	No Conflict. The project would add commercial activities to the local community, adding tax revenues, thereby supporting economic vitality.
Promote Interagency Coordination and Public Participation for Transportation Decision-Making and Planning Efforts	Not applicable. This is not a transportation improvement project and is therefore not applicable.
Maximize the Cost Effectiveness	No Conflict. The project would add commercial activities to the local community, in a location that is logical and appropriate form a cost effectiveness perspective.
Improve the Quality of Life for Residents	No Conflict. The project would add recreational and other in-demand commercial activities the community.

SOURCE: SJCOG 2022 RTP/SCS

Consistency with the City of Manteca Climate Action Plan: The City of Manteca adopted its Climate Action Plan (CAP) in October 2013. The GHG Plan is considered a "Qualified Plan," according to CEQA Guidelines Section 15183.5.2. The City's GHG Inventory is evaluated for baselines years 2005 and 2010 and is projected for years 2020 and 2035. The proposed project would not conflict with the City of Manteca Climate Action Plan. For example, the proposed Project would comply with the applicable GHG reduction strategies identified in the CAP, such as CAP Strategy POD-3, which requires the City to ensure that all commercial projects to design parking lots to allow safe and comfortable walking routes between businesses within the development, and CAP Strategy PI-1 requires the City to ensure that all projects comply with the General Plan policies regarding pedestrian infrastructure during the development review process.

Consistency with the SJVAPCD Requirements: The proposed project would be required to comply with all applicable SJVAPCD (i.e. Air District) Rules and regulations. For example, Regulations and rules that may apply to the proposed Project could include Regulation VIII provides fugitive PM_{10} dust prohibitions; Rule 8021 provides rules for PM_{10} dust prohibition associated with construction, demolition activities, excavation, extraction, and other earthmoving activities; Rule 4601 provides rules to limit VOC emissions for architectural coatings. In sum, the proposed project would comply with all applicable SJVAPCD Rules and regulations.

CONCLUSION

In summary, the project, including the off-site improvements, would be consistent with the plans, policies, regulations, and GHG emissions reduction actions/strategies outlined in the 2022 Scoping Plan Update, the SJCOG's 2022 RTP/SCS, and the City of Manteca Climate Action Plan. Furthermore, because the project is consistent and does not conflict with these plans, policies,

and regulations, the project's incremental increase in GHG emissions as described above would not result in a significant impact on the environment. Therefore, project-related impacts related to GHG emissions would be **less than significant** relative to this topic.

IX. HAZARDS AND HAZARDOUS MATERIALS -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			X	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?			X	
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			X	

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b): Less than Significant. The proposed project would place new commercial uses in an area of the City that currently contains predominantly commercial and residential uses. The proposed commercial land uses do not routinely transport, use, or dispose of hazardous materials, or present a reasonably foreseeable release of hazardous materials, with the exception of common residential grade hazardous materials such as household cleaners, paint, etc. The operational phase of the proposed project does not pose a significant hazard to the public or the environment.

Any operations that involve the use of hazardous materials would be required to have the hazardous material transported, stored, used, and disposed of in compliance with local, state, and federal regulations. The San Joaquin County Department of Environmental Health is the Certified Unified Program Agencies (CUPA) for San Joaquin County and is responsible for the

implementation of statewide programs within the city including Hazardous Materials Business Plan (HMBP) requirements, among numerous other programs. Additionally, businesses are regulated by Cal/Occupational Safety and Health Administration (OSHA) and are therefore required to ensure employee safety. Specific requirements include identifying hazardous materials in the workplace, providing safety information to workers that handle hazardous materials, and adequately training workers. To further ensure the safety of employees, and reduce the potential for accidental release of hazardous materials into the environment, the applicant must submit a HMBP to San Joaquin County Department of Environmental Health for review and approval prior to bringing hazardous materials onsite

Construction equipment and materials would likely require the use of petroleum-based products (oil, gasoline, diesel fuel), and a variety of common chemicals including paints, cleaners, and solvents. Transportation, storage, use, and disposal of hazardous materials during construction activities would be required to comply with applicable federal, state, and local statutes and regulations. Compliance would ensure that human health and the environment are not exposed to hazardous materials. In addition, Project Requirement 5 (Hydrology and Water Quality) requires the project applicant to implement a SWPPP during construction activities, which would prevent any contaminated runoff from leaving the project site. Therefore, compliance with applicable federal, state, local statutes and regulations, and the SWPPP provided in Project Requirement 5, the proposed project would have a **less than significant** impact relative to this issue.

Response c): Less than Significant. The project site is not located within 1/4-mile of an existing school. The nearest school to the project site is the Brock Elliot Elementary School District, located approximately 0.27 miles northeast of the project site. Therefore, this is a **less than significant** impact

Response d): Less than Significant. The proposed project would not be located on a Cortese List site, and no impact would occur. The project would not result in new or more severe impacts than what was disclosed in the General Plan EIR. Therefore, this is a **less than significant** impact

Response e): Less than Significant. The Federal Aviation Administration (FAA) establishes distances of ground clearance for take-off and landing safety based on such items as the type of aircraft using the airport.

The Stockton Metropolitan Airport is the closest airport to the project site, located approximately 7.0 miles to the north of the project site. The probability of an aircraft accident is highest along the extended runway centerline, and within one mile of the runway end. According to SJCOG Guidelines there are seven zones in which land use restrictions apply due to proximity to the airport:

1. Zone 1 Runway Protection Zone (RPZ)
2. Zone 2 Inner Approach/Departure Zone (IADZ)
3. Zone 3 Inner Turning Zone (ITZ)
4. Zone 4 Outer Approach/Departure Zone (OADZ)

5. Zone 5 Sideline Safety Zone (SSZ)
6. Zone 7 Traffic Pattern Zone (TPZ)
7. Zone 8 Airport Influence Area (AIA)

Land use constraints in these zones become progressively less restrictive from the RPZ to the TPZ. The proposed project is not located within any of the safety zones. The proposed project is not located within one mile of the airport, nor along the extended runway centerline, or within an AIA. Additionally, there are no private airstrips within the vicinity of the project site. The proposed project consists of low-rise structures, and does not propose any structures of substantial height that would protrude into active airspace. Therefore safety hazards related to the project's proximity to the Stockton Metropolitan Airport are **less than significant.**

Response f): No Impact. The proposed project does not include any actions that would impair or physically interfere with an adopted emergency response plan or emergency evacuation plan. The project involves the development of commercial land uses within an urbanized environment and would not interfere with any emergency response or evacuation plans. Implementation of the proposed project would result in **no impact** on this environmental topic.

Response g): Less than Significant. The risk of wildfire is related to a variety of parameters, including fuel loading (vegetation), fire weather (winds, temperatures, humidity levels and fuel moisture contents) and topography (degree of slope). Steep slopes contribute to fire hazard by intensifying the effects of wind and making fire suppression difficult. Fuels such as grass are highly flammable because they have a high surface area to mass ratio and require less heat to reach the ignition point, while fuels such as trees have a lower surface area to mass ratio and require more heat to reach the ignition point.

The City has areas with an abundance of flashy fuels (i.e. grassland) in the outlying residential parcels and open lands that, when combined with warm and dry summers with temperatures often exceeding 100 degrees Fahrenheit, create a situation that results in higher risk of wildland fires. Most wildland fires are human caused, so areas with easy human access to land with the appropriate fire parameters generally result in an increased risk of fire.

Since the project site is not located within a designated wildfire hazard area, this is a **less than significant** impact.

X. HYDROLOGY AND WATER QUALITY -- WOULD THE PROJECT:

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

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant. In order to ensure that stormwater runoff from the project site does not adversely increase pollutant levels in adjacent surface waters and stormwater conveyance infrastructure, the City requires the application of BMPs to effectively reduce pollutants from stormwater leaving the site during both the construction and operational phases of the project. Additionally, projects are required to prepare a Stormwater Pollution Prevention Plan (SWPPP). The final storm drainage infrastructure plan for the project would also be submitted to the City for review and approval.

The collection of fees and determined fair share fee amounts are adopted by the City as Conditions of Approval (COAs) for all new development projects prior to project approval. The payment of applicable development impact fees by the proposed project would ensure that the

project pays its fair-share of capital improvement fees towards future system expansions. Additionally, through compliance with the NPDES permit requirements, and compliance with the SWPPP, the proposed project would not result in a violation of any water quality standards or waste discharge requirements. Compliance with the NPDES, the SWPPP required by Project Requirement 5, and the final storm drainage infrastructure plan required by Project Requirement 6, would ensure that the project implements the requirements specified in the General Plan.

Project Requirement(s)

Project Requirement 5*: The project applicant shall prepare a Storm Water Pollution Prevention Plan (SWPPP) that includes specific types and sources of stormwater pollutants, determine the location and nature of potential impacts, and specify appropriate control measures to eliminate any potentially significant impacts on receiving water quality from stormwater runoff. The SWPPP shall require treatment BMPs that incorporate, at a minimum, the required hydraulic sizing design criteria for volume and flow to treat projected stormwater runoff. The SWPPP shall comply with the most current standards established by the Central Valley RWQCB. Best Management Practices shall be selected from the City's Manual of Stormwater Quality Control Standards for New Development and Redevelopment according to site requirements and shall be subject to approval by the City Engineer and Central Valley RWQCB.*

Project Requirement 6: *Prior to approval of the Final Map, the project applicant shall submit a detailed storm drainage infrastructure plan to the City of Manteca Development Services Department for review and approval. The project's storm drainage infrastructure plans shall, to the satisfaction of the City Engineer, demonstrate adequate infrastructure capacity to collect and direct all stormwater generated on the project site within onsite retention/detention facilities to the City's existing stormwater conveyance system, and demonstrate that the project would not result in on- or off-site flooding impacts. The project shall also pay all applicable development impact fees, which would include funding for offsite Citywide storm drainage infrastructure improvements identified in the City of Manteca Citywide Storm Drainage Master Plan.*

Response b): Less than Significant. The proposed project would not result in the construction of new groundwater wells, nor would it increase existing levels of groundwater pumping. As previously discussed, the proposed project is consistent with the General Plan land use designation and therefore was considered in the City's planning projections. Therefore, development of the proposed project would not be considered to interfere substantially with groundwater recharge. The project would also include bioretention areas and would be required to prepare a SWPPP that would include BMPs for capturing stormwater. Therefore, the project would not result in new or more severe impacts than what was disclosed in the General Plan EIR.

Groundwater recharge occurs primarily through percolation of surface waters through the soil and into the groundwater basin. The addition of significant areas of impervious surfaces (such as roads, parking lots, buildings, etc.) can interfere with this natural groundwater recharge process. Upon full project buildout, portions of the project site would be covered in impervious surfaces, which would limit the potential for groundwater percolation to occur on the project site. However, because the City has adequate existing water service capacity to serve the project, and

the limited scope of impervious surface coverage (when compared to the larger groundwater basin), the proposed project would result in **less than significant** impacts related to depletion of groundwater supplies and interference with groundwater recharge.

Response c): Less than Significant. When land is in a natural or undeveloped condition, soils, mulch, vegetation, and plant roots absorb rainwater. This absorption process is called infiltration or percolation. Much of the rainwater that falls on natural or undeveloped land slowly infiltrates the soil and is stored either temporarily or permanently in underground layers of soil. When the soil becomes completely soaked or saturated with water or the rate of rainfall exceeds the infiltration capacity of the soil, the rainwater begins to flow on the surface of land to low lying areas, ditches, channels, streams, and rivers. Rainwater that flows off of a site is defined as storm water runoff. When a site is in a natural condition or is undeveloped, a larger percentage of rainwater infiltrates into the soil and a smaller percentage flows off the site as storm water runoff.

The infiltration and runoff process is altered when a site is developed with urban uses. Houses, buildings, roads, and parking lots introduce asphalt, concrete, and roofing materials to the landscape. These materials are relatively impervious, which means that they absorb less rainwater. As impervious surfaces are added to the ground conditions, the natural infiltration process is reduced. As a result, the volume and rate of storm water runoff increases. The increased volumes and rates of storm water runoff may result in flooding if adequate storm drainage facilities are not provided.

There are no rivers, streams, or water courses located on or immediately adjacent to the project site. As such, there is no potential for the project to alter a water course, which could lead to on or offsite flooding. Drainage improvements associated with the project site would be located on the project site, and the project would not alter or adversely impact offsite drainage facilities.

Development of the project site would place impervious surfaces on portions of the project site. Development of the project site would potentially increase local runoff production, and would introduce constituents into storm water that are typically associated with urban runoff. These constituents include heavy metals (such as lead, zinc, and copper) and petroleum hydrocarbons. BMPs will be applied to the proposed site development to limit the concentrations of these constituents in any site runoff that is discharged into downstream facilities to acceptable levels. Stormwater flows from the project site would be directed to the two proposed retention basins by a new stormwater conveyance system.

In order to ensure that stormwater runoff from the project site does not adversely increase pollutant levels in adjacent surface waters and stormwater conveyance infrastructure, Project Requirement 5 requires the preparation of a SWPPP. As described previously, the SWPPP would require the application of BMPs to effectively reduce pollutants from stormwater leaving the site during both the construction and operational phases of the project.

The project is also required to pay all applicable development impact fees. In order to ensure that stormwater runoff from the project site does not adversely increase pollutant levels in adjacent surface waters and stormwater conveyance infrastructure, or otherwise degrade water quality,

Project Requirement 5 requires the preparation of a SWPPP, and structural BMPs. As described above, the SWPPP would require the application of BMPs to effectively reduce pollutants from stormwater leaving the site, which would ensure that stormwater runoff does not adversely increase pollutant levels, and would reduce the potential for disturbed soils and ground surfaces to result in erosion and sediment discharge into adjacent surface waters during construction and operational phases of the project. The implementation of this requirement would reduce this impact to a less than significant level.

Ultimately, in order to ensure that stormwater runoff generated at the project site as a result of new impervious surfaces does not exceed the capacity of the existing or planned stormwater drainage system, Project Requirement 6 above requires the project applicant to submit a detailed storm drainage infrastructure plan to the City of Manteca Development Services Department for review and approval. The project's storm drainage infrastructure plans shall, to the satisfaction of the City Engineer, demonstrate adequate infrastructure capacity to collect and direct all stormwater generated on the project site within onsite retention/detention facilities to the City's existing stormwater conveyance system, and demonstrate that the project would not result in on- or off-site flooding impacts. The implementation of this requirement would reduce this impact to a less than significant level.

Through the payment of all applicable fees, and the implementation of Project Requirements 5 and 6, would ensure that this impact is **less than significant**.

Response d): Less than Significant. The 100-year floodplain denotes an area that has a one percent chance of being inundated during any particular 12-month period.

Floodplain zones are determined by the Federal Emergency Management Agency (FEMA) and used to create Flood Insurance Rate Maps (FIRMs). These tools assist cities in mitigating flooding hazards through land use planning. FEMA also outlines specific regulations for any construction, whether residential, commercial, or industrial within 100-year floodplains.

The project would not result in new or more severe impacts than what was disclosed in the General Plan EIR. Therefore, this is a **less than significant** impact.

Response e): Less than Significant. The proposed project would be subject to a Municipal National Pollutant Discharge Elimination System Permit and would ensure that adequate drainage would be provided through connection to the City's existing water and sanitary sewer lines and development of bioretention areas for stormwater runoff. As previously mentioned, the proposed project would be required to prepare and implement a SWPPP in accordance with applicable federal and state requirements. The SWPPP would identify BMPs that are intended to prevent erosion runoff during construction. Furthermore, the General Plan contains several policies intended to protect groundwater supplies. The General Plan designates the project site for General Commercial use (City of Manteca 2023), and the site would be developed consistent with that land use designation. Therefore, the proposed project is considered planned growth and would not conflict with the Water Quality Control Plan, Urban Water Management Plan, or Comprehensive Groundwater Management Plan. Impacts would be less than significant. As such,

the project would not result in new or more severe impacts than what was disclosed in the General Plan EIR and the criteria for requiring further CEQA review is not met. Therefore, this impact is **less than significant**.

XI. LAND USE AND PLANNING - WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Physically divide an established community?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?			X	

RESPONSES TO CHECKLIST QUESTIONS

Response a): No Impact. The project site is surrounded by residential and commercial uses. The project would be consistent and compatible with the surrounding land uses, and would not divide an established community. There is **no impact.**

Response b): Less than Significant. The proposed project would be consistent with the land use designation for the project site evaluated in the General Plan EIR. The project has been designed consistent with the City's General Plan land use designation, goals and policies, and relevant ordinances, and is therefore considered planned growth that would not conflict with the General Plan. Therefore, the proposed project would result in no impact and would not result in new or substantially more severe impacts than identified in the General Plan EIR. This is a **less than significant** impact.

XII. MINERAL RESOURCES -- WOULD THE PROJECT:

	Potentially Significant Impact	***Less Than Significant with Mitigation Incorporation***	***Less Than Significant Impact***	***No Impact***
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b): No Impact. There are no mineral resources of local or statewide importance within the project site. Therefore, there is no possibility of loss of mineral resources of local or statewide importance. Therefore, the proposed project would not result in the loss of availability of known mineral resources or mineral resource recovery sites. The proposed project would result in no impact and would not result in new or substantially more severe impacts than identified in the General Plan EIR. There is **no impact**.

XIII. NOISE -- WOULD THE PROJECT RESULT IN:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Generation of a temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Generation of excessive groundborne vibration or groundborne noise levels?			X	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			X	

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant. The proposed project is located in an area consisting predominately of residential and proposed commercial land uses. As described in the Noise Study prepared by Saxelby Acoustics for the proposed project (see Appendix B), the proposed project is predicted to generate noise levels of up to 47 dBA Leq during the peak hour of activity at the closest sensitive receptors. This could occur during nighttime hours. The City of Manteca imposes a noise level standard of 40 dBA Leq for noises consisting of music during nighttime (10:00 p.m. to 7:00 a.m.) hours. However, the average nighttime ambient noise environment at the residential uses to the south due to traffic is 58 dBA Leq. The proposed project noise levels would be less than ambient noise levels.

Due to the project's proposed nighttime operation and the potentially disruptive nature of amplified music including potentially high levels of bass, Saxelby Acoustics recommends that the proposed project generate noise levels no greater than 10 dB below the ambient. Project noise levels which are 10 dB below the ambient will not result in an increase in overall noise levels. Therefore, the proposed project is would need to generate noise levels no greater than 48 dBA Leq at the adjacent residences. As provided by the Noise Study prepared by Saxelby Acoustics, the project building construction materials that would be used by the Project applicant would achieve this goal and would not result in an increase in noise levels at the existing residences. Therefore, the proposed project would result in no impact and would not result in new or substantially more severe impacts than identified in the General Plan EIR. This is a **less than significant** impact.

Response b): Less than Significant. No major stationary sources of groundborne vibration were identified in the project area that would result in the long-term exposure of proposed onsite land uses to unacceptable levels of ground vibration. In addition, the proposed project would not involve the use of any major equipment or processes that would result in potentially significant levels of ground vibration that would exceed these standards at nearby existing land uses.

However, construction activities associated with the proposed project would require the use of various tractors, trucks, and potentially jackhammers that could result in intermittent increases in groundborne vibration levels. The use of major groundborne vibration-generating construction equipment/processes (i.e., blasting, pile driving) is not anticipated to be required for construction of the proposed project.

Groundborne vibration levels commonly associated with construction equipment are summarized in Table NOISE-1. Based on the levels presented in Table NOISE-1, groundborne vibration generated by construction equipment would not be anticipated to exceed approximately 0.09 inches per second (in/sec) peak particle velocity (ppv) at 25 feet. Predicted vibration levels would not be anticipated to exceed recommended criteria for structural damage and human annoyance (0.2 and 0.1 in/sec ppv, respectively) at nearby land uses. As a result, short-term groundborne vibration impacts would be considered **less than significant** and no mitigation is required**.**

Table NOISE-1: Representative Vibration Source Levels for Construction Equipment

EQUIPMENT	*PEAK PARTICLE VELOCITY AT 25 FEET (IN/SEC)*
Large Bulldozers	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozers	0.003

SOURCE: FTA 2006, CALTRANS 2004.

Response c): Less than Significant. The Stockton Metropolitan Airport is the closest airport to the project site, located approximately 7 miles to the north. The project site is located outside of both the 65 dB Community Noise Equivalent Level (CNEL) and the 60 dB CNEL noise contours for the Stockton Metropolitan Airport, and the project site is outside of the Airport Influence Area (AIA). As such, the project site would not be exposed to excessive noise from the Stockton Metropolitan Airport. This is a **less than significant** impact.

XIV. POPULATION AND HOUSING -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			X	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?			X	

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant. The proposed project is consistent with the General Commercial land use designation in the General Plan, and can be considered planned growth assumed under the General Plan. Therefore, the project would not result in new or substantially more severe impacts than identified in the General Plan EIR. This is a **less than significant** impact.

Response b): Less than Significant. The project site is undeveloped and does not include any housing or residents. Therefore, no impact would occur, and the project would not result in new or substantially more severe impacts than identified in the General Plan EIR. This is a **less than significant** impact.

XV. PUBLIC SERVICES

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

RESPONSES TO CHECKLIST QUESTIONS

Response a):

i) Fire Protection and Emergency Medical Services: Less than Significant.

Implementation of the proposed project would not adversely impact existing fire and emergency services within the City and would not require the construction of new fire protection facilities. Impact fees from new development are collected based upon projected impacts from each development. The adequacy of impact fees is reviewed on an annual basis to ensure that the fee is commensurate with the service. Payment of the applicable impact fees by the project applicant as COAs prior to project approval, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the project, would fund capital and labor costs associated with fire protection services.

In order to provide adequate fire protection and suppression services to the project site, the City's Fire Department must have access to adequate onsite hydrants with adequate fire-flow pressure available to meet the needs of fire suppression units. The final site plans and development specifications developed for the proposed project will indicate the location and design specifications of the fire hydrants that will be required within the project site.

The proposed project would comply with all General Plan policies related to reducing fire risks. Project plans would also be reviewed by the Fire Department to ensure that the site is acceptable for fire safety purposes. The proposed project is consistent with the Commercial land use designation for the site, and therefore the extent that the project would increase demand for fire protection services was previously considered by the General Plan EIR. The project would not result in new or substantially more severe impacts than identified in the General Plan EIR, no mitigation measures are required, and the criteria for requiring further CEQA review are not met. Therefore, this is considered a **less than significant** impact.

ii) Police Protection: Less than Significant. Impact fees from new developments are collected based upon projected impacts from each development by the City as COAs prior to project approval. The adequacy of impact fees is reviewed on an annual basis to ensure that the fee is commensurate with the service. Payment of the applicable impact fees by the project applicant, and ongoing revenues that would come from property taxes, and other revenues generated by the project, would fund capital and labor costs associated with police services.

The project site would be served by the City's Police Department. As previously discussed, the proposed project is consistent with the Commercial land use designation for the site, and therefore the extent that the project would increase demand for police protection services was previously considered by the General Plan EIR. The project would not result in new or substantially more severe impacts than identified in the General Plan EIR, no mitigation measures are required, and the criteria for requiring further CEQA review are not met.

It is not anticipated that implementation of the proposed project would result in significant new demand for police services. Project implementation would not require the construction of new police facilities to serve the project site, nor would it result in impacts to the existing response times and existing police protection service levels. Therefore, this is considered a **less than significant** impact.

iii) Schools: Less than Significant. All new residential and commercial development in the City is required to pay a developer impact fee to fund school improvement projects. The proposed project does not include a residential component that would generate school-age children, but is still required to pay required developer fees to mitigate impacts to schools facilities, as applicable. Payment of development fees is considered to fully mitigate the impacts of new development on school facilities under Section 65996 of the California Government Code. Therefore, the proposed project would not result in new or substantially more severe impacts than identified in the General Plan EIR. No mitigation measures are required and the criteria for requiring further CEQA review are not met. Therefore, this is considered a **less than significant** impact.

iv) Parks: Potential project impacts to parks and recreational facilities are addressed in the following section of this document.

v) Other Public Facilities: Less than Significant. The project is within the scope of projected growth under the General Plan and the anticipated uses on the site are assumed in the General Plan EIR. The proposed project does not propose any residential uses that would substantially increase demand for parks or public facilities. Therefore, the project would not result in new or substantially more severe impacts than identified in the General Plan EIR. No mitigation measures are required and the criteria for requiring further CEQA review are not met. Therefore, this is considered a **less than significant** impact.

XVI. RECREATION

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

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b): Less than Significant. The proposed project would not increase demand for parks and recreational facilities within the City of Manteca and would not increase the use of the City's existing parks and recreation system. The City of Manteca requires the payment of the project's fair share in-lieu parks fees, as required by the City's General Plan. The collection of fees and determined fair share fee amounts are adopted by the City as COAs for all new development projects prior to project approval. Fees paid aid in the development of new park-space and maintenance as required, to ensure continued high quality park facilities for all City residents.

Moreover, the project is within the scope of projected growth under the General Plan and the anticipated uses on the site areas assumed in the General Plan EIR. The proposed project would not include construction of parks or recreational facilities, and does not propose any residential uses that would substantially increase demand for existing parks or facilities. the project would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met. As such, this is a **less than significant** impact.

XVII. TRANSPORTATION -- WOULD THE PROJECT:

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

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant. The project would not conflict with any existing plans or policies related to alternative transportation. The payment of fair-share traffic impact fees would provide funding for bicycle, pedestrian, and alternative transportation improvements throughout the City.

The collection of fees and determined fair share fee amounts are adopted by the City as COAs for all new development projects prior to project approval. The payment of applicable traffic impact fees by the proposed project would ensure that the project pays its fair-share of capital improvement fees towards the future transportation system improvements and expansions. Payment of these fair-share traffic impact fees would assist the City with implementation of various improvements, in order to maintain acceptable levels of service throughout the City.

The proposed project would not induce any additional required improvements. The collection of fees and determined fair share fee amounts are adopted by the City as COAs for all new development projects prior to project approval. The payment of the required traffic impact fees to the City of Manteca would reduce project-related traffic impacts to a **less than significant** level.

Moreover, the project is within the scope of projected growth under the General Plan and the anticipated uses on the site as assumed in the General Plan EIR. The project is considered planned growth under the General Plan and was considered in the analysis of the General Plan EIR, which acknowledged LOS impacts from buildout of the City. Therefore, the proposed project would not result in new or substantially more severe LOS impacts than identified in the General Plan EIR. Therefore, this is a **less than significant** impact.

Response b): **Less than Significant.** As noted previously, the Manteca General Plan land use designation for the project site is Commercial (consistent with the proposed project). An EIR for the City's General Plan was prepared previously, and the proposed project is consistent with the

uses assumed for the project site in both documents. The project would not increase transportation-related impacts beyond which were previously analyzed in the General Plan EIR.

In addition, a VMT screening analysis for the project prepared by Fehr & Peers found that the project would satisfy the local-serving retail VMT screening criteria by virtue of the nature and size of the project (see Appendix C for further detail). The project can reasonably be described as "local serving" as it improves destination proximity to similar land use types. Therefore, the project can be presumed to have a less than significant impact on VMT. The project would not result in new or substantially more severe impacts and the criteria for requiring further CEQA review are not met. This impact would be **less than significant**.

Response c): **Less than Significant.** Implementation of the proposed project would not result in a geometric design feature that is inconsistent with applicable design standards for the City of Manteca. The project would not result in a significant change to the vehicle mix or speed of traffic that is not compatible with the design of existing or planned facility design.

Vehicle ingress/egress to/from the project site will occur from two points along Atherton Drive. The project does not propose any new roadways or transportation facilities that would be inconsistent with applicable design standards for the City of Manteca. Therefore, the proposed project would not result in a change to the vehicle mix or speed of traffic that is not compatible with the design of existing or planned roadways and transportation facilities. This impact would be **less than significant**.

Response d): **Less than Significant.** Implementation of the proposed project would not create roadway and transportation facilities that impede access for emergency response vehicles. The proposed site accessways, improvements to Atherton Drive, and internal transportation network is designed to maintain levels of accessibility for police and fire response times, which ensures vehicles have the necessary access when responding to an emergency.

Several emergency (police and fire) services are located within the project study area. The internal circulation is designed to meet City code for emergency vehicle access and would maintain high levels of emergency vehicle accessibility and mobility, which ensures vehicles have the necessary access when responding to an emergency. Emergency vehicles arriving from Grant Line Road will have unimpeded access to the project site. Therefore, this is considered a **less than significant** impact.

XVIII. TRIBAL CULTURAL RESOURCES

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

RESPONSES TO CHECKLIST QUESTIONS

Responses a-b): There is a potential for the discovery of prehistoric, ethnohistoric, or historic archaeological sites that may meet the definition of Tribal Cultural Resources (TCRs). Although no TCRs have been documented on the project site, the project is in a region where significant cultural resources have been recorded and there remains a potential that undocumented archaeological resources that may meet the TCR definition could be unearthed or otherwise discovered during ground-disturbing and construction activities. Examples of significant archaeological discoveries that may meet the TCR definition would include villages and cemeteries. Due to the possible presence of undocumented TCRs within the project site, construction-related impacts on tribal cultural resources may occur.

Project Requirement 3 in Section V, Cultural Resources, would require appropriate steps to preserve and/or document any previously undiscovered resources that may be encountered during construction activities, including human remains. Implementation of this requirement would reduce this impact to a **less than significant** level.

XIX. UTILITIES AND SERVICE SYSTEMS -- WOULD THE PROJECT:

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

RESPONSES TO CHECKLIST QUESTIONS

Responses a), c): Less than Significant. The City has adequate capacity to serve the project's projected demand for wastewater treatment services in addition to its existing commitments, and no improvements or expansions to the existing WWTP are required to serve the proposed project. The addition of project-generated wastewater would not result in any RWQCB violations related to effluent treatment or discharge.

The General Plan designates the project site for Commercial use and the proposed project is consistent with that land use designation. Therefore, the proposed project is considered planned growth and to the extent that the project would require new or expanded water, wastewater, stormwater, electrical and natural gas facilities, this was previously considered by the General Plan EIR. For these reasons, the proposed project would not result in new or more severe impacts disclosed in the General Plan EIR. The criteria for requiring further CEQA review are not met. Implementation of the proposed project would have a **less than significant** impact.

Response b): Less than Significant. The project site consists of undeveloped land. Therefore, the construction of the proposed project would increase water demand on-site. The General Plan designates the project site for Commercial use and the proposed project is consistent with that land use designation. The proposed project is considered planned growth and to the extent that the proposed project would require additional water supply, this was previously considered by

the General Plan EIR. For these reasons, the proposed project would not result in new or more severe impacts disclosed in the General Plan FEIR. The criteria for requiring further CEQA review are not met. Therefore, this is a **less than significant** impact.

Responses c): Less than Significant. The General Plan designates the project site for Commercial use, and the proposed project is consistent with that land use designation. Therefore, the proposed project is considered planned growth. The City had planned for this expansion to accommodate growth for buildout of the General Plan, including Commercial development on the project site. Therefore, to the extent that the proposed project would generate additional effluent that would require treatment, this was previously considered by the General Plan EIR. For these reasons, the proposed project would not result in new or more severe impacts disclosed in the General Plan EIR. The criteria for requiring further CEQA review are not met. Therefore, this is a **less than significant** impact.

Responses d), e): Less than Significant. As previously discussed, the proposed project is considered planned growth under the General Plan. The proposed project would be required to comply with all federal, state, and local regulations regarding solid waste. To the extent that the proposed project would generate both construction and operational solid waste, this was previously considered by the General Plan EIR. For these reasons, the proposed project would not result in new or more severe impacts disclosed in the General Plan FEIR. The criteria for requiring further CEQA review are not met. Therefore, this is a **less than significant** impact.

XX. WILDFIRE

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

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant. The project site would connect to an existing network of City streets. The nearest fire station, Manteca Fire Station #2, is located approximately 0.47 miles to the northeast of the project site. The appropriate turning radiuses have been planned to accommodate fire trucks on-site. The proposed circulation improvements would allow for greater emergency access relative to existing conditions. Moreover, the proposed project would require building construction to meet the fire code requirements, and would have fire hydrants consistent with the standards of the City; such fire hydrants would assist with fire suppression efforts if a fire was to occur on or near the project site. Therefore, impacts from project implementation would be considered **less than significant** relative to adopted emergency response plans or evacuation plans. Moreover, the project would also be constructed consistent with California Fire Code requirements for emergency access as directed by the City's Fire Department preliminary review. For these reasons, the proposed project would not result in new or more severe impacts disclosed in the General Plan FEIR.

Response b): Less than Significant. The risk of wildfire is related to a variety of parameters, including fuel loading (vegetation), fire weather (winds, temperatures, humidity levels and fuel moisture contents) and topography (degree of slope). Steep slopes contribute to fire hazard by intensifying the effects of wind and making fire suppression difficult. Fuels such as grass are highly flammable because they have a high surface area to mass ratio and require less heat to reach the ignition point. The project site is located in an area that is predominately residential and commercial, which is not considered at a significant risk of wildlife. There are no steep slopes

on or near the project site. Development of the project would not exacerbate fire risks. Therefore, impacts from project implementation would be considered **less than significant** relative to the spread of wildfire. Moreover, the project would also be constructed consistent with California Fire Code requirements for emergency access as directed by the City's Fire Department preliminary review. For these reasons, the proposed project would not result in new or more severe impacts disclosed in the General Plan FEIR.

Response c): Less than Significant. The project includes development of infrastructure (water, sewer, and storm drainage) to serve the proposed commercial buildings. The project does not include the construction of fuel breaks, emergency water sources, or power lines. As noted above, the proposed project would require fire hydrants consistent with the standards of the City, and such fire hydrants would assist with fire suppression efforts if a fire was to occur. The proposed infrastructure improvements would allow for decreased fire risk relative to existing conditions. Therefore, impacts from project implementation would be considered **less than significant** relative to infrastructure that may exacerbate fire risk. Moreover, the project would also be constructed consistent with California Fire Code requirements for emergency access as directed by the City's Fire Department preliminary review. For these reasons, the proposed project would not result in new or more severe impacts disclosed in the General Plan FEIR.

Response d): Less than Significant. The proposed project would require the installation of storm drainage infrastructure to ensure that storm waters properly drain from the project site and does not result in downstream flooding or major drainage changes. Overall, impacts from project implementation would be considered **less than significant** relative to risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Moreover, the project would also be constructed consistent with California Fire Code requirements for emergency access as directed by the City's Fire Department preliminary review. For these reasons, the proposed project would not result in new or more severe impacts disclosed in the General Plan FEIR.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Does the project have the potential to 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?			X	
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant. As discussed in this document, the proposed project would not result in new or substantially more severe impacts than identified in the General Plan EIR and would comply with applicable General Plan FEIR mitigation measures. The criteria for requiring further CEQA review are not met. Therefore, these are **less than significant** impacts.

Response b): **Less than Significant.** The General Plan EIR assumed full development and buildout of the project site, consistent with the use and density proposed by the project. The cumulative impacts associated with buildout of the City of Manteca General Plan, including the project site, were fully addressed in the General Plan EIR. Additionally, as described throughout the analysis above, the proposed project would not result in any significant individual or cumulative impacts that would not be reduced to less than significant levels through the application of uniformly applied development policies and/or standards. Therefore, this is considered a **less than significant** impact.

Response c): Less than Significant. As described throughout the analysis above, the proposed project would not result in any significant impacts that would have environmental effects which will cause substantial adverse effects on humans. The analysis in the relevant sections above provides the application of uniformly applied development policies and/or standards reduce any potentially significant impacts on humans to less than significant levels. A variety of requirements including those related to aesthetics and light and glare, GHG and air quality, cultural resources, hazardous materials, seismic hazards, water pollution and water quality, and noise, ensure any

adverse effects on humans are reduce to an acceptable standard. Therefore, this is considered a **less than significant** impact.

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APPENDIX A: AQ-GHG STUDY

AIR QUALITY AND GREENHOUSE GAS STUDY

FOR THE

TEN PIN PROJECT

March 12, 2024

Prepared for:

City of Manteca
Development Services
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Manteca, CA 95337
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Prepared by:

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A Land Use Planning, Design, and Environmental Firm

AIR QUALITY AND GREENHOUSE GAS STUDY

FOR THE

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DRAFT EIR

Chapters **Page Numbers**

0.1 Project Description 0.1-1

1 Air Quality 1-1

1.1 Environmental Setting 1-1

1.2 Regulatory Setting 1-12

1.3 Impacts and Mitigation Measures 1-36

2 Greenhouse Gases and Climate Change 2-1

2.1 Environmental Setting 2-1

2.2 Regulatory Setting 2-6

2.3 Impacts and Mitigation Measures 2-33

Appendices

Appendix A: Air Quality and Greenhouse Gases Modeling

Appendix B: Site Plans

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PROJECT LOCATION AND EXISTING SURROUNDING USES

The Project site is located within the City of Manteca, in the southern portion of the city, south of State Route (SR) 120 and just south of W. Atherton Drive, at the intersection of Oleander Avenue. The Project site is bounded on the north by W. Atherton Drive, and to the south, east, and west by existing residences.

PROJECT CHARACTERISTICS

The proposed Project would include several uses. Specifically, the Project would include:

- A Conference Center/Banquet Hall, consisting of three 200-person capacity rooms and two 100-person capacity rooms, 16,400 square feet of assembly space. In total, the Conference Center/Banquet Hall would consist of approximately 54,090 square feet of space.
- A Family Entertainment Center, consisting of 40 bowling lanes, twelve 20-seat banquet rooms, a 6,000 square foot arcade, a 6,500 square foot restaurant, and a 400 square foot Pro Shop. In total, the Family Entertainment Center would include a total of 82,000 square feet of space.

Further detail on the Conference Center/Banquet Hall and the Family Entertainment Center is provided below. Appendix B of this Tech Memo provides Project site plans.

Conference Center/Banquet Hall (Villa Banchetto): Villa Banchetto is a full-service banquet facility and conference center. The facility is designed primarily for weddings and wedding receptions Friday through Sunday. This portion of the business would be seasonal, with late March through mid-October being the peak seasons. The balance of the year would be Christmas parties, corporate events and larger conferences. As it relates to the wedding portion, most engagements happen around Christmas, New Years, and Valentine's Day. During those months, there would be a considerable number of tours and bookings.

The property consists of two chapels, three banquet rooms that can become one, and two or three individual spaces, depending on the reception or meeting size. Two additional banquet spaces upstairs that can also become one, depending on the size of the reception or meeting size. There are a total of six brides and grooms dressing rooms, two additional conference rooms, two sales offices, the general manager's office and an accounting office. There would also be a large full-service kitchen with two complete service lines. There would be one for domestic food and one for ethnic food preparation. The upstairs also includes a full video studio that would be the central hub for all the live recordings and room monitor viewing. All the events that have the full video production as part of either weddings/receptions or corporate events would be live broadcast to the banquet room monitors and to live Youtube channels, which would be able to be seen live as the event is taking place.

Family Entertainment Center (Three Strikes): Three Strikes would be an FEC (Family Entertainment Center). The new Family Entertainment Center would include the following venues all operated by staff and management: Bowling, Redemption Style Arcade, Full-Service Restaurant, Beer Garden, Pro Shop, and approximately 10 banquet rooms for private parties and corporate events.

The total maximum occupant load based on the 40-lane designed bowling alley would be 5 persons per lane for a total of 200 people in the lanes and banquet space areas. If all the lanes would be used the banquet rooms for parties would actually be occupied by the same people in attendance. The other area that would have occupancy would be the skybox and arcade which holds approximately 120 people. The restaurant and beer garden areas an additional a total of maximum capacity an additional 165 patrons. Therefore, the total maximum capacity is approximately 485 persons.

This section describes the regional air quality, current attainment status of the air basin, local sensitive receptors, emission sources, and impacts that are likely to result from Project implementation. The analysis contained in this section is intended to be at a project-level, and covers impacts associated with the conversion of the entire site to urban uses. Following this discussion is an assessment of consistency of the proposed Project with applicable policies and local plans. The Greenhouse Gases and Climate Change analysis is located in a separate section of this document. This section is based in part on the following technical studies: *Air Quality and Land Use Handbook: A Community Health Perspective* (California Air Resources Board [CARB], 2007), *Guide for Assessing and Mitigation Air Quality Impacts* (San Joaquin Valley Air Pollution Control District [SJAVPCD], 2002), *Guidance for Assessing and Mitigating Air Quality Impacts - 2015* (SJAVPCD, 2015), and CalEEMod *(v.2022.1)* (CARB, 2021).

1.1 ENVIRONMENTAL SETTING

SAN JOAQUIN VALLEY AIR BASIN

The City of Manteca (City) is in the southern portion of the San Joaquin Air Basin (SJVAB). The SJVAB consists of eight counties: Fresno, Kern (western and central), Kings, Tulare, Madera, Merced, San Joaquin, and Stanislaus. Air pollution from significant activities in the SJVAB includes a variety of industrial-based sources as well as on- and off-road mobile sources. These sources, coupled with geographical and meteorological conditions unique to the area, stimulate the formation of unhealthy air.

The SJVAB is approximately 250 miles long and an average of 35 miles wide. It is bordered by the Sierra Nevada in the east, the Coast Ranges in the west, and the Tehachapi Mountains in the south. There is a slight downward elevation gradient from Bakersfield in the southeast end (elevation 408 feet) to sea level at the northwest end where the valley opens to the San Francisco Bay at the Carquinez Straits. At its northern end is the Sacramento Valley, which comprises the northern half of California's Central Valley. The bowl-shaped topography inhibits movement of pollutants out of the valley (San Joaquin Valley Air Pollution Control District (SJVAPCD), 2015).

Climate

The SJVAB is in a Mediterranean climate zone and is influenced by a subtropical high-pressure cell most of the year. Mediterranean climates are characterized by sparse rainfall, which occurs mainly in winter. Summers are hot and dry. Summertime maximum temperatures often exceed 100°F in the valley.

The subtropical high-pressure cell is strongest during spring, summer, and fall and produces subsiding air, which can result in temperature inversions in the valley. A temperature inversion can act like a lid, inhibiting vertical mixing of the air mass at the surface. Any emissions of pollutants can be trapped below the inversion. Most of the surrounding mountains are above the normal height of summer inversions (1,500 to 3,000 feet).

Winter-time high pressure events can often last many weeks, with surface temperatures often

lowering into the 30°F. During these events, fog can be present and inversions are extremely strong. These wintertime inversions can inhibit vertical mixing of pollutants to a few hundred feet (SJVAPCD, 2015).

Wind Patterns

Wind speed and direction play an important role in dispersion and transport of air pollutants. Wind at the surface and aloft can disperse pollution by mixing and transporting it to other locations.

Especially in summer, winds in the San Joaquin Valley most frequently blow from the northwest. The region's topographic features restrict air movement and channel the air mass towards the southeastern end of the valley. Marine air can flow into the basin from the San Joaquin River Delta and over Altamont Pass and Pacheco Pass, where it can flow along the axis of the valley, over the Tehachapi Pass, into the Southeast Desert Air Basin. This wind pattern contributes to transporting pollutants from the Sacramento Valley and the Bay Area into the SJVAB. Approximately 27 percent of the total emissions in the northern portion, 11 percent of total emissions in the central region, and 7 percent of total emission in the south valley of the SJVAB are attributed to air pollution transported from these two areas.[1] The Coastal Range is a barrier to air movement to the west and the high Sierra Nevada Range is a significant barrier to the east (the highest peaks in the southern Sierra Nevada reach almost halfway through the Earth's atmosphere). Many days in the winter are marked by stagnation events where winds are very weak. Transport of pollutants during winter can be very limited. A secondary but significant summer wind pattern is from the southeast and can be associated with nighttime drainage winds, prefrontal conditions, and summer monsoons.

Two significant diurnal wind cycles that occur frequently in the valley are the sea breeze and mountain-valley upslope and drainage flows. The sea breeze can accentuate the northwest wind flow, especially on summer afternoons. Nighttime drainage flows can accentuate the southeast movement of air down the valley. In the mountains during periods of weak synoptic scale winds, winds tend to be upslope during the day and downslope at night. Nighttime and drainage flows are especially pronounced during the winter when flow from the easterly direction is enhanced by nighttime cooling in the Sierra Nevada. Eddies can form in the valley wind flow and can recirculate a polluted air mass for an extended period.

Temperature

Solar radiation and temperature are particularly important in the chemistry of ozone formation. The SJVAB averages over 260 sunny days per year. Photochemical air pollution (primarily ozone) is produced by the atmospheric reaction of organic substances (such as volatile organic compounds) and nitrogen dioxide under the influence of sunlight. Ozone concentrations are very dependent on the amount of solar radiation, especially during late spring, summer, and early fall. Ozone levels typically peak in the afternoon. After the sun goes down, the chemical reaction between nitrous

[1] SJVAPCD. Frequently Asked Questions, http://www.valleyair.org/general_info/frequently_asked_questions.htm#What%20is%20being%20done%20to%20improve%20ai r%20quality%20in%20the%20San%20Joaquin%20Valley, accessed March 3, 2020.

oxide and ozone begins to dominate. This reaction tends to scavenge and remove the ozone in the metropolitan areas through the early morning hours, resulting in the lowest ozone levels, possibly reaching zero at sunrise in areas with high nitrogen oxides emissions. At sunrise, nitrogen oxides tend to peak, partly due to low levels of ozone at this time and also due to the morning commuter vehicle emissions of nitrogen oxides.

Generally, the higher the temperature, the more ozone formed, since reaction rates increase with temperature. However, extremely hot temperatures can "lift" or "break" the inversion layer. Typically, if the inversion layer does not lift to allow the buildup of contaminants to be dispersed, the ozone levels will peak in the late afternoon. If the inversion layer breaks and the resultant afternoon winds occur, the ozone will peak in the early afternoon and decrease in the late afternoon as the contaminants are dispersed or transported out of the SJVAB.

Ozone levels are low during winter periods when there is much less sunlight to drive the photochemical reaction (SJVAPCD, 2015).

Precipitation, Humidity, and Fog

Precipitation and fog may reduce or limit some pollutant concentrations. Ozone needs sunlight for its formation, and clouds and fog can block the required solar radiation. Wet fogs can cleanse the air during winter as moisture collects on particles and deposits them on the ground. Atmospheric moisture can also increase pollution levels. In fogs with less water content, the moisture acts to form secondary ammonium nitrate particulate matter. This ammonium nitrate is part of the valley's $PM_{2.5}$ and PM_{10} problem. The winds and unstable air conditions experienced during the passage of winter storms result in periods of low pollutant concentrations and excellent visibility. Between winter storms, high pressure and light winds allow cold moist air to pool on the SJVAB floor. This creates strong low-level temperature inversions and very stable air conditions, which can lead to tule fog. Wintertime conditions favorable to fog formation are also conditions favorable to high concentrations of $PM_{2.5}$ and PM_{10} (SJVAPCD, 2015).

Inversions

The vertical dispersion of air pollutants in the San Joaquin Valley can be limited by persistent temperature inversions. Air temperature in the lowest layer of the atmosphere typically decreases with altitude. A reversal of this atmospheric state, where the air temperature increases with height, is termed an inversion. The height of the base of the inversion is known as the "mixing height." This is the level to which pollutants can mix vertically. Mixing of air is minimized above and below the inversion base. The inversion base represents an abrupt density change where little air movement occurs.

Inversion layers are significant in determining pollutant concentrations. Concentration levels can be related to the amount of mixing space below the inversion. Temperature inversions that occur on the summer days are usually 2,000 to 2,500 feet above the valley floor. In winter months, overnight inversions occur 500 to 1,500 feet above the valley floor (SJVAPCD, 2015).

CRITERIA POLLUTANTS

All criteria pollutants can have human health and environmental effects at certain concentrations. The United States Environmental Protection Agency (U.S. EPA) uses six "criteria pollutants" as indicators of air quality and has established for each of them a maximum concentration above which adverse effects on human health may occur. These threshold concentrations are called National Ambient Air Quality Standards (NAAQS). In addition, California establishes ambient air quality standards, called California Ambient Air Quality Standards (CAAQS). California law does not require that the CAAQS be met by a specified date as is the case with NAAQS.

The ambient air quality standards for the six criteria pollutants (as shown in Table 1-1) are set to public health and the environment within an adequate margin of safety (as provided under Section 109 of the Federal Clean Air Act). Epidemiological, controlled human exposure, and toxicology studies evaluate potential health and environmental effects of criteria pollutants, and form the scientific basis for new and revised ambient air quality standards. Principal characteristics and possible health and environmental effects from exposure to the six primary criteria pollutants generated by the Project are discussed below.

Ozone (O_3) is a photochemical oxidant and the major component of smog. While O_3 in the upper atmosphere is beneficial to life by shielding the earth from harmful ultraviolet radiation from the sun, high concentrations of O_3 at ground level are a major health and environmental concern. O_3 is not emitted directly into the air but is formed through complex chemical reactions between precursor emissions of volatile organic compounds (ROG) and oxides of nitrogen (NO_x) in the presence of sunlight. These reactions are stimulated by sunlight and temperature so that peak O_3 levels occur typically during the warmer times of the year. Both ROGs and NO_x are emitted by transportation and industrial sources. ROGs are emitted from sources as diverse as autos, chemical manufacturing, dry cleaners, paint shops and other sources using solvents. Relatedly, reactive organic compounds (ROG) are defined as the subset of ROGs that are reactive enough to contribute substantially to atmospheric photochemistry.

The reactivity of O_3 causes health problems because it damages lung tissue, reduces lung function and sensitizes the lungs to other irritants. Scientific evidence indicates that ambient levels of O_3 not only affect people with impaired respiratory systems, such as asthmatics, but healthy adults and children as well. Exposure to O_3 for several hours at relatively low concentrations has been found to significantly reduce lung function and induce respiratory inflammation in normal, healthy people during exercise. This decrease in lung function generally is accompanied by symptoms including chest pain, coughing, sneezing and pulmonary congestion.

Studies show associations between short-term ozone exposure and non-accidental mortality, including deaths from respiratory issues. Studies also suggest long-term exposure to ozone may increase the risk of respiratory-related deaths (U.S. EPA, 2019a). The concentration of ozone at which health effects are observed depends on an individual's sensitivity, level of exertion (i.e., breathing rate), and duration of exposure. Studies show large individual differences in the intensity of symptomatic responses, with one study finding no symptoms to the least responsive individual after a 2-hour exposure to 400 parts per billion of ozone and a 50 percent decrement in forced

airway volume in the most responsive individual. Although the results vary, evidence suggest that sensitive populations (e.g., asthmatics) may be affected on days when the 8-hour maximum ozone concentration reaches 80 parts per billion (U.S. EPA, 2019b). The average background level of ozone in California and Nevada is approximately 48.3 parts per billion, which represents approximately 77 percent of the total ozone in the western region of the U.S. (NASA, 2015).

In addition to human health effect, ozone has been tied to crop damage, typically in the form of stunted growth, leaf discoloration, cell damage, and premature death. O_3 can also act as a corrosive and oxidant, resulting in property damage such as the degradation of rubber products and other materials.

Carbon monoxide (CO) is a colorless, odorless and poisonous gas produced by incomplete burning of carbon in fuels. Carbon monoxide is harmful because it binds to hemoglobin in the blood, reducing the ability of blood to carry oxygen. This interferes with oxygen delivery to the body's organs. The most common effects of CO exposure are fatigue, headaches, confusion, and dizziness due to inadequate oxygen delivery to the brain. For people with cardiovascular disease, short-term CO exposure can further reduce their body's already compromised ability to respond to the increased oxygen demands of exercise, exertion, or stress. Inadequate oxygen delivery to the heart muscle leads to chest pain and decreased exercise tolerance. Unborn babies whose mothers experience high levels of CO exposure during pregnancy are at risk of adverse developmental effects. Exposure to CO at high concentrations can also cause fatigue, headaches, confusion, dizziness, and chest pain. There are no ecological or environmental effects to ambient CO (CARB, 2019a).

Very high levels of CO are not likely to occur outdoors. However, when CO levels are elevated outdoors, they can be of particular concern for people with some types of heart disease. These people already have a reduced ability for getting oxygenated blood to their hearts in situations where the heart needs more oxygen than usual. They are especially vulnerable to the effects of CO when exercising or under increased stress. In these situations, short-term exposure to elevated CO may result in reduced oxygen to the heart accompanied by chest pain also known as angina (U.S. EPA, 2016). Such acute effects may occur under current ambient conditions for some sensitive individuals, while increases in ambient CO levels increases the risk of such incidences.

Nitrogen oxides (NO_x) is a brownish, highly reactive gas that is present in all urban atmospheres. The main effect of increased NO_2 is the increased likelihood of respiratory problems. Under ambient conditions, NO_2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections. Nitrogen oxides are an important precursor both to ozone (O_3) and acid rain and may affect both terrestrial and aquatic ecosystems. Longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. People with asthma, as well as children and the elderly are generally at greater risk for the health effects of NO_2.

The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide (NO_x). NO_x plays a major role, together with ROGs, in the atmospheric reactions that produce O_3. NO_x forms when fuel is burned at high temperatures. The two major emission sources are transportation and stationary fuel combustion sources such as electric utility

and industrial boilers.

Sulfur dioxide (SO_2) is one of the multiple gaseous oxidized sulfur species and is formed during the combustion of fuels containing sulfur, primarily coal and oil. The largest anthropogenic source of SO_2 emissions in the U.S. is fossil fuel combustion at electric utilities and other industrial facilities. SO_2 is also emitted from certain manufacturing processes and mobile sources, including locomotives, large ships, and construction equipment.

SO_2 affects breathing and may aggravate existing respiratory and cardiovascular disease in high doses. Sensitive populations include asthmatics, individuals with bronchitis or emphysema, children and the elderly. SO_2 is also a primary contributor to acid deposition, or acid rain, which causes acidification of lakes and streams and can damage trees, crops, historic buildings and statues. In addition, sulfur compounds in the air contribute to visibility impairment in large parts of the country. This is especially noticeable in national parks. Ambient SO_2 results largely from stationary sources such as coal and oil combustion, steel mills, refineries, pulp and paper mills and from nonferrous smelters.

Short-term exposure to ambient SO_2 has been associated with various adverse health effects. Multiple human clinical studies, epidemiological studies, and toxicological studies support a causal relationship between short-term exposure to ambient SO_2 and respiratory morbidity. The observed health effects include decreased lung function, respiratory symptoms, and increased emergency department visits and hospitalizations for all respiratory causes. These studies further suggest that people with asthma are potentially susceptible or vulnerable to these health effects. In addition, SO_2 reacts with other air pollutants to form sulfate particles, which are constituents of fine particulate matter ($PM_{2.5}$). Inhalation exposure to $PM_{2.5}$ has been associated with various cardiovascular and respiratory health effects (U.S. EPA, 2017). Increased ambient SO_2 levels would lead to increased risk of such effects.

SO_2 emissions that lead to high concentrations of SO_2 in the air generally also lead to the formation of other sulfur oxides (SOx). SOx can react with other compounds in the atmosphere to form small particles. These particles contribute to particulate matter (PM) pollution. Small particles may penetrate deeply into the lungs and in sufficient quantity can contribute to health problems.

Particulate matter (PM) includes dust, dirt, soot, smoke and liquid droplets directly emitted into the air by sources such as factories, power plants, cars, construction activity, fires and natural windblown dust. Particles formed in the atmosphere by condensation or the transformation of emitted gases such as SO_2 and ROGs are also considered particulate matter. PM is generally categorized based on the diameter of the particulate matter: PM_{10} is particulate matter 10 micrometers or less in diameter (known as respirable particulate matte*r*), and $PM_{2.5}$ is particulate matter 2.5 micrometers or less in diameter (known as fine particulate matter).

Based on studies of human populations exposed to high concentrations of particles (sometimes in the presence of SO_2) and laboratory studies of animals and humans, there are major effects of concern for human health. These include effects on breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular disease, alterations in the body's defense

systems against foreign materials, damage to lung tissue, carcinogenesis and premature death. Small particulate pollution causes health impacts even at very low concentrations – indeed no threshold has been identified below which no damage to health is observed.

Respirable particulate matter (PM_{10}) consists of small particles, less than 10 microns in diameter, of dust, smoke, or droplets of liquid which penetrate the human respiratory system and cause irritation by themselves, or in combination with other gases. Particulate matter is caused primarily by dust from grading and excavation activities, from agricultural activities (as created by soil preparation activities, fertilizer and pesticide spraying, weed burning and animal husbandry), and from motor vehicles, particularly diesel-powered vehicles. PM_{10} causes a greater health risk than larger particles, since these fine particles can more easily penetrate the defenses of the human respiratory system.

$PM_{2.5}$ consists of fine particles, which are less than 2.5 microns in size. Similar to PM_{10}, these particles are primarily the result of combustion in motor vehicles, particularly diesel engines, as well as from industrial sources and residential/agricultural activities such as burning. It is also formed through the reaction of other pollutants. As with PM_{10}, these particulates can increase the chance of respiratory disease, and cause lung damage and cancer. In 1997, the U.S. EPA created new Federal air quality standards for $PM_{2.5}$.

The major subgroups of the population that appear to be most sensitive to the effects of particulate matter include individuals with chronic obstructive pulmonary or cardiovascular disease or influenza, asthmatics, the elderly and children. Particulate matter also impacts soils and damages materials and is a major cause of visibility impairment.

Numerous studies have linked PM exposure to premature death in people with preexisting heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms. Studies show that every 1 microgram per cubic meter reduction in $PM_{2.5}$ results in a one percent reduction in mortality rate for individuals over 30 years old (Bay Area Air Quality Management District, 2017). Long-term exposures, such as those experienced by people living for many years in areas with high particle levels, have been associated with problems such as reduced lung function and the development of chronic bronchitis – and even premature death. Additionally, depending on its composition, both PM_{10} and $PM_{2.5}$ can also affect water quality and acidity, deplete soil nutrients, damage sensitive forests and crops, affect ecosystem diversity, and contribute to acid rain (U.S. EPA, 2019c).

Lead (Pb) exposure can occur through multiple pathways, including inhalation of air and ingestion of Pb in food, water, soil or dust. Once taken into the body, lead distributes throughout the body in the blood and is accumulated in the bones. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems and the cardiovascular system. Lead exposure also affects the oxygen carrying capacity of the blood. Excessive Pb exposure can cause seizures, mental retardation and/or behavioral disorders. Low doses of Pb can lead to central nervous system damage. Recent studies have also shown that Pb may be a factor in high blood pressure and subsequent heart disease.

Lead is persistent in the environment and can be added to soils and sediments through deposition

from sources of lead air pollution. Other sources of lead to ecosystems include direct discharge of waste streams to water bodies and mining. Elevated lead in the environment can result in decreased growth and reproductive rates in plants and animals, and neurological effects in vertebrates.

Lead exposure is typically associated with industrial sources; major sources of lead in the air are ore and metals processing and piston-engine aircraft operating on leaded aviation fuel. Other sources are waste incinerators, utilities, and lead-acid battery manufacturers. The highest air concentrations of lead are usually found near lead smelters. As a result of the U.S. EPA's regulatory efforts, including the removal of lead from motor vehicle gasoline, levels of lead in the air decreased by 98 percent between 1980 and 2014 (U.S. EPA, 2019d). Based on this reduction of lead in the air over this period, and since most new developments do not generate an increase in lead exposure, the health impacts of ambient lead levels are not typically monitored by the California Air Resources Board (CARB).

AMBIENT AIR QUALITY STANDARDS

Both the U.S. EPA and the CARB have established ambient air quality standards for common pollutants. These ambient air quality standards represent safe levels of contaminants that avoid specific adverse health effects associated with each pollutant.

The federal and State ambient air quality standards are summarized in Table 1-1 for important pollutants. The federal and State ambient standards were developed independently, although both processes attempted to avoid health-related effects. As a result, the federal and State standards differ in some cases. In general, the California standards are more stringent. This is particularly true for ozone, $PM_{2.5}$, and PM_{10}. The U.S. EPA signed a final rule for the federal ozone eight-hour standard of 0.070 ppm on October 1, 2015, and was effective as of December 28, 2015 (equivalent to the California state ambient air quality eight-hour standard for ozone).

TABLE 1-1: FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

POLLUTANT	*AVERAGING TIME*	*FEDERAL PRIMARY STANDARD*	*STATE STANDARD*
Ozone	1-Hour	--	0.09 ppm
	8-Hour	0.070 ppm	0.070 ppm
Carbon Monoxide	8-Hour	9.0 ppm	9.0 ppm
	1-Hour	35.0 ppm	20.0 ppm
Nitrogen Dioxide	Annual	0.053 ppm	0.03 ppm
	1-Hour	0.100 ppm	0.18 ppm
Sulfur Dioxide	Annual	0.03 ppm	--
	24-Hour	0.14 ppm	0.04 ppm
	1-Hour	0.075 ppm	0.25 ppm
PM_{10}	Annual	--	20 ug/m^3
	24-Hour	150 ug/m^3	50 ug/m^3
$PM_{2.5}$	Annual	12 ug/m^3	12 ug/m^3
	24-Hour	35 ug/m^3	--
Lead	30-Day Avg.	--	1.5 ug/m^3
	3-Month Avg.	0.15 ug/m^3	--

NOTES: PPM = PARTS PER MILLION, UG/M3 = MICROGRAMS PER CUBIC METER

SOURCE: CALIFORNIA AIR RESOURCES BOARD, 2019A.

In 1997, new national standards for fine particulate matter diameter 2.5 microns or less ($PM_{2.5}$) were adopted for 24-hour and annual averaging periods. The existing PM_{10} standards were retained, but the method and form for determining compliance with the standards were revised.

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated despite the absence of criteria documents. The identification, regulation, and monitoring of TACs is relatively recent compared to that for criteria pollutants. Unlike criteria pollutants, TACs are regulated on the basis of risk rather than specification of safe levels of contamination.

Existing air quality concerns within San Joaquin County and the entire air basin are related to increases of regional criteria air pollutants (e.g., ozone and particulate matter), exposure to toxic air contaminants, odors, and increases in greenhouse gas emissions contributing to climate change. The primary source of ozone (smog) pollution is motor vehicles which account for 70 percent of the ozone in the region. Particulate matter is caused by dust, primarily dust generated from construction and grading activities, and smoke which is emitted from fireplaces, wood-burning stoves, and agricultural burning.

Attainment Status

In accordance with the California Clean Air Act (CCAA), the CARB is required to designate areas of the State as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria.

Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data does not support either an attainment or nonattainment status. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The U.S. EPA designates areas for ozone, carbon monoxide, and nitrogen dioxide as "does not meet the primary standards," "cannot be classified," or "better than national standards." For sulfur dioxide, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the CARB terminology of attainment, nonattainment, and unclassified is more frequently used.

San Joaquin County has a State designation Attainment or Unclassified for all criteria pollutants except for ozone, PM_{10} and $PM_{2.5}$. San Joaquin County has a national designation of either Unclassified or Attainment for all criteria pollutants except for Ozone and $PM_{2.5}$. Table 1-2 presents the state and nation attainment status for San Joaquin County.

TABLE 1-2: STATE AND NATIONAL ATTAINMENT STATUS IN SAN JOAQUIN COUNTY

CRITERIA POLLUTANTS	*STATE DESIGNATIONS*	*NATIONAL DESIGNATIONS*
Ozone (O_3)	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment	Unclassified/Attainment
Nitrogen Dioxide (NO_2)	Attainment	Unclassified/Attainment
Sulfur Dioxide (SO_2)	Attainment	Unclassified/Attainment
Sulfates	Attainment	
Lead	Attainment	Unclassified/Attainment
Hydrogen Sulfide	Unclassified	
Visibility Reducing Particles	Unclassified	

SOURCE: CALIFORNIA AIR RESOURCES BOARD, 2023.

San Joaquin County Air Quality Monitoring

The SJVAPCD and the CARB maintain air quality monitoring sites throughout Fresno County that collect data for ozone, $PM_{2.5}$, and PM_{10}. The nearest active air quality monitoring site to the Project site is Clovis-N Villa Avenue. It is important to note that while the State retains the one-hour standard, the federal ozone 1-hour standard was revoked by the U.S. EPA and is no longer applicable for federal standards. Data obtained from the monitoring sites between 2015 and 2018 (latest year of data available) is shown in Table 1-3, Table 1-4, and Table 1-5.

TABLE 1-3 AMBIENT AIR QUALITY MONITORING DATA SUMMARY (CLOVIS-N VILLA AVENUE) - OZONE

YEAR	*DAYS > STANDARD*				*1-HOUR OBSERVATIONS*			*8-HOUR AVERAGES*				*YEAR COVERAGE*	
	STATE		*NATIONAL*			*STATE*	*NAT'L*	*STATE*		*NATIONAL*			
	1-HR	*8-HR*	*1-HR*	*8-HR*	*MAX.*	*D.V.[1]*	*D.V.[2]*	*MAX.*	*D.V.[1]*	*MAX.*	*D.V.[2]*	*MIN*	*MAX*
2021	9	37	0	34	0.123	0.11	0.120	0.1	0.095	0.100	0.083	97	98
2020	12	41	2.1	36	0.142	0.11	0.114	0.108	0.095	0.108	0.084	98	99
2019	6	30	0	27	0.103	0.11	0.109	0.080	0.090	0.079	0.084	98	98

NOTES: ALL CONCENTRATIONS EXPRESSED IN PARTS PER MILLION. THE NATIONAL 1-HOUR OZONE STANDARD WAS REVOKED IN JUNE 2005 AND IS NO LONGER IN EFFECT. STATISTICS RELATED TO THE REVOKED STANDARD ARE SHOWN IN ITALICS. D.V. [1]= STATE DESIGNATION VALUE. D.V. [2]= NATIONAL DESIGN VALUE.

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM OR IADAM) AIR POLLUTION SUMMARIES.

TABLE 1-4: QUALITY MONITORING DATA SUMMARY (CLOVIS-N VILLA AVENUE) – PM_{10}

YEAR	*EST. DAYS > STD.*		*ANNUAL AVERAGE*		*HIGH 24-HR AVERAGE*		*YEAR COVERAGE*
	NAT'L	*STATE*	*NAT'L*	*STATE*	*NAT'L*	*STATE*	
2021	No Data	112.4	37.6	43.2	125.0	208.8	95
2020	5.8	117.5	45.8	50.8	180.9	296.0	100
2019	0	65.9	32.5	32.6	150.9	155.7	100

NOTES: THE NATIONAL ANNUAL AVERAGE PM_{10} STANDARD WAS REVOKED IN DECEMBER 2006 AND IS NO LONGER IN EFFECT. AN EXCEEDANCE IS NOT NECESSARILY A VIOLATION. STATISTICS MAY INCLUDE DATA THAT ARE RELATED TO AN EXCEPTIONAL EVENT. STATE AND NATIONAL STATISTICS MAY DIFFER FOR THE FOLLOWING REASONS: STATE STATISTICS ARE BASED ON CALIFORNIA APPROVED SAMPLERS, WHEREAS NATIONAL STATISTICS ARE BASED ON SAMPLERS USING FEDERAL REFERENCE OR EQUIVALENT METHODS. STATE AND NATIONAL STATISTICS MAY THEREFORE BE BASED ON DIFFERENT SAMPLERS. NATIONAL STATISTICS ARE BASED ON STANDARD CONDITIONS. STATE CRITERIA FOR ENSURING THAT DATA ARE SUFFICIENTLY COMPLETE FOR CALCULATING VALID ANNUAL AVERAGES ARE MORE STRINGENT THAN THE NATIONAL CRITERIA. ND=THERE WAS INSUFFICIENT (OR NO) DATA AVAILABLE TO DETERMINE THE VALUE.

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM OR ADAM) AIR POLLUTION SUMMARIES.

TABLE 1-5 AMBIENT AIR QUALITY MONITORING DATA SUMMARY (CLOVIS-N VILLA AVENUE) - $PM_{2.5}$

YEAR	EST. DAYS > NAT'L '06 STD.	ANNUAL AVERAGE		NAT'L ANN. STD. D.V.[1]	STATE ANNUAL D.V.[2]	NAT'L '06 STD. 98TH PERCENTILE	NAT'L '06 24-HR STD. D.V.[1]	HIGH 24-HOUR AVERAGE		YEAR COVERAGE
		NAT'L	STATE					NAT'L	STATE	
2021	22.0	15.1	No Data	No Data	18	49.6	59	104.6	104.6	100
2020	40.0	18.4	18.4	No Data	18	99.5	62	188.0	257.5	99
2019	No Data	No Data	10.2	No Data	18	28.0	45	53.7	53.7	93

NOTES: ALL CONCENTRATIONS EXPRESSED IN PARTS PER MILLION. STATE AND NATIONAL STATISTICS MAY DIFFER FOR THE FOLLOWING REASONS: STATE STATISTICS ARE BASED ON CALIFORNIA APPROVED SAMPLERS, WHEREAS NATIONAL STATISTICS ARE BASED ON SAMPLERS USING FEDERAL REFERENCE OR EQUIVALENT METHODS. STATE AND NATIONAL STATISTICS MAY THEREFORE BE BASED ON DIFFERENT SAMPLERS. STATE CRITERIA FOR ENSURING THAT DATA ARE SUFFICIENTLY COMPLETE FOR CALCULATING VALID ANNUAL AVERAGES ARE MORE STRINGENT THAN THE NATIONAL CRITERIA. D.V. [1] = STATE DESIGNATION VALUE. D.V. [2]= NATIONAL DESIGN VALUE

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM OR ADAM) AIR POLLUTION SUMMARIES.

ODORS

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

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another.

It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air.

When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the

concentration in the air is not detectable by the average human.

SENSITIVE RECEPTORS

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases. A sensitive receptor is a location where human populations, especially children, seniors, and sick persons, are present and where there is a reasonable expectation of continuous human exposure to pollutants. Examples of sensitive receptors include residences, hospitals, and schools. The closest sensitive receptors to the Project site include the residences just south and east of the Project site.

1.2 REGULATORY SETTING

FEDERAL

Clean Air Act

The Federal Clean Air Act (FCAA) was first signed into law in 1970. In 1977, and again in 1990, the law was substantially amended. The FCAA is the foundation for a national air pollution control effort, and it is composed of the following basic elements: NAAQS for criteria air pollutants, hazardous air pollutant standards, state attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The U.S. EPA is responsible for administering the FCAA. The FCAA requires the U.S. EPA to set NAAQS for several problem air pollutants based on human health and welfare criteria. Two types of NAAQS were established: primary standards, which protect public health (with an adequate margin of safety, including for sensitive populations such as children, the elderly, and individuals suffering from respiratory diseases), and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction.

NAAQS standards define clean air and represent the maximum amount of pollution that can be present in outdoor air without any harmful effects on people and the environment. Existing violations of the ozone and $PM_{2.5}$ ambient air quality standards indicate that certain individuals exposed to these pollutants may experience certain health effects, including increased incidence of cardiovascular and respiratory ailments.

NAAQS standards have been designed to accurately reflect the latest scientific knowledge and are reviewed every five years by a Clean Air Scientific Advisory Committee (CASAC), consisting of seven members appointed by the U.S. EPA Administrator. Reviewing NAAQS is a lengthy undertaking and includes the following major phases: Planning, Integrated Science Assessment (ISA), Risk/Exposure Assessment (REA), Policy Assessment (PA), and Rulemaking. The process starts with a comprehensive review of the relevant scientific literature. The literature is summarized and conclusions are presented in the ISA. Based on the ISA, U.S. EPA staff perform a risk and exposure assessment, which is summarized in the REA document. The third document, the PA, integrates the

findings and conclusions of the ISA and REA into a policy context, and provides lines of reasoning that could be used to support retention or revision of the existing NAAQS, as well as several alternative standards that could be supported by the review findings. Each of these three documents are released for public comment and public peer review by the CASAC. Members of CASAC are appointed by the U.S. EPA Administrator for their expertise in one or more of the subject areas covered in the ISA. The CASAC's role is to peer review the NAAQS documents, ensure that they reflect the thinking of the scientific community, and advise the Administrator on the technical and scientific aspects of standard setting. Each document goes through two to three drafts before CASAC deems it to be final.

Although there is some variability among the health effects of the NAAQS pollutants, each has been linked to multiple adverse health effects including, among others, premature death, hospitalizations and emergency department visits for exacerbated chronic disease, and increased symptoms such as coughing and wheezing. NAAQS standards were last revised for each of the six criteria pollutant as listed below, with detail on what aspects of NAAQS changed during the most recent update:

- Ozone: On October 1, 2015, the U.S. EPA lowered the national eight-hour standard from 0.075 ppm to 0.070 ppm, providing for a more stringent standards consistent with the current California state standard.
- CO: In 2011, the primary standards were retained from the original 1971 level, without revision. The secondary standards were revoked in 1985.
- NO_2: The national NO_2 standard was most recently revised in 2010 following an exhaustive review of new literature pointed to evidence for adverse effects in asthmatics at lower NO_2 concentrations than the existing national standard.
- SO_2: On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb.
- PM: the national annual average $PM_{2.5}$ standard was most recently revised in 2012 following an exhaustive review of new literature pointed to evidence for increased risk of premature mortality at lower $PM_{2.5}$ concentrations than the existing standard.
- Lead: The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. In 2016, the primary and secondary standards were retained.

The law recognizes the importance for each state to locally carry out the requirements of the FCAA, as special consideration of local industries, geography, housing patterns, etc. are needed to have full comprehension of the local pollution control problems. As a result, the U.S. EPA requires each state to develop a State Implementation Plan (SIP) that explains how each state will implement the FCAA within their jurisdiction. A SIP is a collection of rules and regulations that a particular state will implement to control air quality within their jurisdiction. The CARB is the state agency that is responsible for preparing the California SIP.

Transportation Conformity

Transportation conformity requirements were added to the FCAA in the 1990 amendments, and the

U.S. EPA adopted implementing regulations in 1997. See §176 of the FCAA (42 U.S.C. §7506) and 40 CFR Part 93, Subpart A. Transportation conformity serves much the same purpose as general conformity: it ensures that transportation plans, transportation improvement programs, and projects that are developed, funded, or approved by the United States Department of Transportation or that are recipients of funds under the Federal Transit Act or from the Federal Highway Administration (FHWA), conform to the SIP as approved or promulgated by U.S. EPA.

Currently, transportation conformity applies in nonattainment areas and maintenance areas. Under transportation conformity, a determination of conformity with the applicable SIP must be made by the agency responsible for the proposed Project, such as the Metropolitan Planning Organization, the Council of Governments, or a federal agency. The agency making the determination is also responsible for all the requirements relating to public participation. Generally, a project will be considered in conformance if it is in the transportation improvement plan and the transportation improvement plan is incorporated in the SIP. If an action is covered under transportation conformity, it does not need to be separately evaluated under general conformity.

Transportation Control Measures

One particular aspect of the SIP development process is the consideration of potential control measures as a part of making progress towards clean air goals. While most SIP control measures are aimed at reducing emissions from stationary sources, some are typically created to address mobile or transportation sources. These are known as transportation control measures (TCMs). TCM strategies are designed to reduce vehicle miles traveled and trips, or vehicle idling and associated air pollution. These goals are achieved by developing attractive and convenient alternatives to single-occupant vehicle use. Examples of TCMs include ridesharing programs, transportation infrastructure improvements such as adding bicycle and carpool lanes, and expansion of public transit.

STATE

CARB Mobile-Source Regulation

The State of California is responsible for controlling emissions from the operation of motor vehicles in the State. Rather than mandating the use of specific technology or the reliance on a specific fuel, the CARB motor vehicle standards specify the allowable grams of pollution per mile driven. In other words, the regulations focus on the reductions needed rather than on the manner in which they are achieved. Towards this end, the CARB has adopted regulations which require auto manufacturers to phase in less polluting vehicles.

California Clean Air Act

The California Clean Air Act (CCAA) was first signed into law in 1988. The CCAA provides a comprehensive framework for air quality planning and regulation, and spells out, in statute, the state's air quality goals, planning and regulatory strategies, and performance. The CARB is the agency responsible for administering the CCAA. The CARB established ambient air quality standards pursuant to the California Health and Safety Code (CH&SC) [§39606(b)], which are similar to the

federal standards.

California Air Quality Standards

Although NAAQS are determined by the U.S. EPA, states have the ability to set standards that are more stringent than the federal standards. As such, California established more stringent ambient air quality standards. Federal and state ambient air quality standards have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulates and lead. In addition, California has created standards for pollutants that are not covered by federal standards. Although there is some variability among the health effects of the CAAQS pollutants, each has been linked to multiple adverse health effects including, among others, premature death, hospitalizations and emergency department visits for exacerbated chronic disease, and increased symptoms such as coughing and wheezing. The existing state and federal primary standards for major pollutants are shown in Table 1-1.

Air quality standard setting in California commences with a critical review of all relevant peer reviewed scientific literature. The Office of Environmental Health Hazard Assessment (OEHHA) uses the review of health literature to develop a recommendation for the standard. The recommendation can be for no change, or can recommend a new standard. The review, including the OEHHA recommendation, is summarized in a document called the draft Initial Statement of Reasons (ISOR), which is released for comment by the public, and also for public peer review by the Air Quality Advisory Committee (AQAC). AQAC members are appointed by the President of the University of California for their expertise in the range of subjects covered in the ISOR, including health, exposure, air quality monitoring, atmospheric chemistry and physics, and effects on plants, trees, materials, and ecosystems. The Committee provides written comments on the draft ISOR. The ARB staff next revises the ISOR based on comments from AQAC and the public. The revised ISOR is then released for a 45-day public comment period prior to consideration by the Board at a regularly scheduled Board hearing.

In June of 2002, the CARB adopted revisions to the PM_{10} standard and established a new $PM_{2.5}$ annual standard. The new standards became effective in June 2003. Subsequently, staff reviewed the published scientific literature on ground-level ozone and nitrogen dioxide and the CARB adopted revisions to the standards for these two pollutants. Revised standards for ozone and nitrogen dioxide went into effect on May 17, 2006 and March 20, 2008, respectively. These revisions reflect the most recent changes to the CAAQS.

Tanner Air Toxics Act (TACs)

California regulates TACs primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and has adopted U.S. EPA's list of HAPs as TACs. Most recently, diesel PM was added to the CARB list of TACs. Once a TAC is identified, CARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below

that threshold. If there is no safe threshold, the measure must incorporate Best Available Control Technologies (BACT) to minimize emissions.

AB 2588 requires that existing facilities that emit toxic substances above a specified level prepare a toxic-emission inventory, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures. CARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators). In February 2000, CARB adopted a new public-transit bus-fleet rule and emission standards for new urban buses. These rules and standards provide for (1) more stringent emission standards for some new urban bus engines, beginning with 2002 model year engines; (2) zero-emission bus demonstration and purchase requirements applicable to transit agencies; and (3) reporting requirements under which transit agencies must demonstrate compliance with the urban transit bus fleet rule.

Omnibus Low-NOx Rule

The CARB approved the Omnibus Low-NOx Rule on August 28, 2020, which will require engine NOx emissions to be cut to approximately 75% below current standards beginning in 2024, and 90% below current standards in 2027. The rule also places nine additional regulatory requirements on new heavy-duty truck and engines. Those additional requirements include a 50% reduction in particulate matter emissions, stringent new low-load and idle standards, a new in-use testing protocol, extended deterioration requirements, a new California-only credit program, and extended mandatory warranty requirements. The regulatory requirements in the Omnibus Low-NOX Rule will first become effective in 2024, at the same time as the Advanced Clean Trucks regulations that CARB approved that mandates manufacturers convert increasing percentages of their heavy-duty trucks sold in California to zero-emission vehicles.

Assembly Bill 170

Assembly Bill 170, Reyes (AB 170), was adopted by state lawmakers in 2003, creating Government Code Section 65302.1, which requires cities and counties in the San Joaquin Valley to amend their general plans to include data and analysis, comprehensive goals, policies, and feasible implementation strategies designed to improve air quality. The elements to be amended include, but are not limited to, those elements dealing with land use, circulation, housing, conservation, and open space. Section 65302.1.c identifies four areas of air quality discussion required in these amendments:

- A report describing local air quality conditions, attainment status, and state and federal air quality and transportation plans;
- A summary of local, district, state, and federal policies, programs, and regulations to improve air quality;
- A comprehensive set of goals, policies, and objectives to improve air quality; and
- Feasible implementation measures designed to achieve these goals.

LOCAL

City of Manteca General Plan

The City of Manteca General Plan includes several policies that are relevant to air quality. It is noted that the currently adopted General Plan is the 2023 General Plan; however, the City is currently undergoing an Update to the General Plan. Both the 2023 General Plan policies and the proposed General Plan Update policies applicable to the Project are identified below:

2023 GENERAL PLAN (EXISTING)

Policies: Air Quality- Regional Coordination

- AQ-P-1: Cooperate with other agencies to develop a consistent and coordinated approach to reduction of air pollution and management of hazardous air pollutants.

Implementation: Air Quality- Regional Coordination

- AQ-I-1. Work with the San Joaquin Valley Air Pollution Control District (APCD) to implement the Air Quality Management Plan (AQMP).
  - Cooperate with the APCD to develop consistent and accurate procedures for evaluating project-specific and cumulative air quality impacts.
  - Cooperate with the APCD and the California Air Resources Board in their efforts to develop a local airshed model.
  - Cooperate with the APCD in their efforts to develop a cost/benefit analysis of possible control strategies (mitigation measures to minimize short and long-term stationary and area source emissions as part of the development review process, and monitoring measures to ensure that mitigation measures are implemented.
- AQ-I-2. In accordance with CEQA, submit development proposals to the APCD for review and comment prior to decision.
- AQ-I-3. Cooperate with the San Joaquin County Environmental Health Department in identifying hazardous material users and in developing a hazardous materials management plan.

Policies: Air Quality- Land Use

- AQ-P-2: Develop a land use plan that will help to reduce the need for trips and will facilitate the common use of public transportation, walking, bicycles, and alternative fuel vehicles.
- AQ-P-3: Segregate and provide buffers between land uses that typically generate hazardous or obnoxious fumes and residential or other sensitive land uses.

Implementation: Air Quality- Land Use

- AQ-I-4. Encourage mixed-use development that is conveniently accessible by pedestrians and public transit.
- AQ-I-5. Locate employment, school, and daily shopping destinations near residential areas.
- AQ-I-6. Locate higher intensity development such as multi-family housing, institutional uses, services, employment centers and retail along existing and proposed transit corridors.
- AQ-I-7. Locate public facilities in areas easily served by current and planned public

transportation.

- AQ-I-8. Prior to entitlement of a project that may be an air pollution point source, such as a manufacturing and extracting facility, the developer shall provide documentation that the use is located and appropriately separated from residential areas and sensitive receptors (e.g., homes, schools, and hospitals).

Policies: Air Quality- Transportation

- AQ-P-4: Develop and maintain street systems that provide for efficient traffic flow and thereby minimize air pollution from automobile emissions.
- AQ-P-5: Develop and maintain circulation systems that provide alternatives to the automobile for transportation, including bicycles routes, pedestrian paths, bus transit, and carpooling.
- AQ-P-6: Coordinate public transportation networks, including trains, local bus service, regional bus service and rideshare facilities to provide efficient public transit service.

Implementation: Air Quality- Transportation

- AQ-I-9. Maintain acceptable traffic levels of service (LOS) as specified in the Circulation Element.
- AQ-I-10. In new subdivisions, require the internal street system to include the installation of dedicated pedestrian/bicycle pathways connecting to adjacent residential and commercial areas as well as schools, parks and recreational areas.
- AQ-I-11. Provide adequate pedestrian and bikeway facilities for present and future transportation needs throughout the City.

Policies: Air Quality- Dust and Other Airborne Particulate Materials

- AQ-P-7: New construction will be managed to minimize fugitive dust and construction vehicle emissions.
- AQ-P-8: Woodburning devices shall meet current standards for controlling particulate air pollution.
- AQ-P-9: Burning of any combustible material within the City will be controlled to minimize particulate air pollution.

Implementation: Air Quality- Dust and Other Airborne Particulate Materials

- AQ-I-12. Construction activity plans shall include and/or provide for a dust management plan to prevent fugitive dust from leaving the property boundaries and causing a public nuisance or a violation of an ambient air standard.
    - Project development applicants shall be responsible for ensuring that all adequate dust control measures are implemented in a timely manner during all phases of project development and construction.
- AQ-I-13. All residences built in a new subdivision or housing development shall be equipped with conventional heating devices with sufficient capacity to heat all areas of the building without reliance on woodburning heating devices.
- AQ-I-14. All woodburning-heating devices installed shall meet EPA standards applicable at the time of project approval.

Policies: Air Quality- Reduce Emissions From Energy Generating Facilities

- AQ-P-10: Encourage energy efficient building designs.

Implementation: Air Quality- Reduce Emissions From Energy Generating Facilities

- AQ-I-15. Design review criteria shall include the following considerations, at a minimum:
  - The developer of a sensitive air pollution receptor shall submit documentation that the project design includes appropriate buffering (e.g., setbacks, landscaping) to separate the use from highways, arterial streets, hazardous material locations and other sources of air pollution or odor.
  - Promote the use of new and replacement fuel storage tanks at refueling stations that are clean fuel compatible, if technically and economically feasible.
  - The use of energy efficient lighting (including controls) and process systems beyond Title 24 requirements shall be encouraged where practicable (e.g., water heating, furnaces, boiler units, etc.)
  - The use of energy efficient automated controls for air conditioning beyond Title 24 requirements shall be encouraged where practicable.
  - Promote solar access through building siting to maximize natural heating and cooling, and landscaping to aid passive cooling and to protect from winds.

Policies: Air Quality – Greenhouse Gas Emissions

- AQ-P-11: Prepare and maintain a Climate Action Plan and community greenhouse gas emission inventory for sectors with the potential for control or influence by the City that demonstrates consistency with State of California targets.
- AQ-P-12: Development projects shall incorporate the applicable strategies of the City of Manteca Climate Action Plan as needed to demonstrate consistency with CAP reduction targets and AB 32.

Implementation: Air Quality – Greenhouse Gases

- AQ-I-16. Track and monitor aspects of development related to CAP strategies on an ongoing basis to measure progress in achieving CAP reduction targets.
- AQ-I-17. Track implementation of municipal and community projects and programs related to energy efficiency, transit service improvements, transportation facilities such as bicycle paths and lanes, pedestrian infrastructure, and other projects that reduce greenhouse gas emissions throughout the community.
- AQ-I-18. Update CAP emission inventories, targets, and strategies to reflect new State of California greenhouse gas reduction targets when adopted for later years and to reflect the benefits of any new State and federal regulatory actions that reduce greenhouse gas emissions to demonstrate continued consistency with State targets.

GENERAL PLAN UPDATE (PROPOSED)

Policies: Land Use Element

- LU-3.9: Locate residences away from areas of excessive noise, smoke, dust, odor, and lighting, and ensure that adequate provisions, including buffers or transitional uses, such as less intensive renewable energy production, light industrial, office, or commercial uses,

separate the proposed residential uses from more intensive uses, including industrial, agricultural, or agricultural industrial uses and designated truck routes, to ensure the health and well-being of existing and future residents.

- LU-6.8: Encourage the mixing of retail, service, residential, office, and institutional uses on the properties surrounding The Promenade to create a significant retail, employment, and cultural center south of Highway 120.

- LU-6.9: Require mixed-use development to provide strong connections with the surrounding development and neighborhoods through the provision of pedestrian and bicycle facilities and, where feasible, site consolidation.

- LU-6.10: Encourage the reuse of existing buildings within Downtown and in other developed locations designated for mixed-use development by utilizing the California Existing Building Code which provides flexibility in the retrofitting of buildings.

- LU-6.11: Promote the revitalization of underutilized, deteriorated areas and buildings within Downtown and in other developed locations designated for mixed-use development through development incentives, public/private partnerships, and public investments.

- LU-8.4: Policy Area 3 is the Austin Road Business Park and Residential Community Master Plan area, with boundaries as shown in Figure LU-6. The primary land uses within Policy Area 3 are envisioned to be a master planned residential community with high-quality parks, community-serving commercial uses, and residential development ranging from very low to high density residential in order to accommodate a broad range of housing types, including executive housing and workforce housing. Residential uses located near SR 99 and adjacent the railroad tracks should include appropriate transitions and buffers to address air quality and noise.

- LU-9.1: Require future planning decisions, development, and infrastructure and public projects to consider the effects of planning decisions on the overall health and well-being of the community and its residents, with specific consideration provided regarding addressing impacts to disadvantaged populations and communities and ensuring disadvantaged communities have equitable access to services and amenities.

- LU-9.2: As part of land use decisions, ensure that environmental justice issues related to potential adverse health impacts associated with land use decisions, including methods to reduce exposure to hazardous materials, industrial activity, vehicle exhaust, other sources of pollution, and excessive noise on residents regardless of age, culture, gender, race, socioeconomic status, or geographic location, are considered and addressed.

Implementation: Land Use Element

- LU-1b: Regularly review and revise, as necessary, the Zoning Code to accomplish the following purposes:

    - Ensure consistency with the General Plan in terms of zoning districts and development standards;

    - Provide for a Downtown zone that permits the vibrant mixing of residential, commercial, office, business-professional, and institutional uses within the Central Business District;

  - Ensure adequate buffers and transitions are required between intensive uses, such as industrial and agricultural industrial, and sensitive receptors, including residential uses and schools; and
  - Provide for an Agricultural Industrial zone that accommodates the processing of crops and livestock.
  - Ensure that land use requirements meet actual demand and needs over time as technology, social expectations, and business practices change.

- LU-6a: Consider implementing incentives to support developers who construct vertical mixed-use projects and/or who build housing above non-residential ground-floor uses within Downtown.
- LU-6d: Promote the intensified use and reuse of existing suites above ground floors.
- LU-9a: Review all development proposals, planning projects, and infrastructure projects to ensure that potential adverse impacts to disadvantaged communities, such as exposure to pollutants, including toxic air contaminants, and unacceptable levels of noise and vibration are reduced to the extent feasible and that measures to improve quality of life, such as connections to bicycle and pedestrian paths, community services, schools, and recreation facilities, access to healthy foods, and improvement of air quality are included in the project. The review shall address both the construction and operation phases of the project.
- LU-9c: Encourage and support local transit service providers to increase and expand services for people who are transit-dependent, including seniors, persons with mobility disabilities, and persons without regular access to automobiles by improving connections to regional medical facilities, senior centers, and other support systems that serve residents and businesses.

Policies: Circulation Element

- C-2.7: Provide access for bicycles and pedestrians at the ends of cul-de-sacs, where right-of-way is available, to provide convenient access within and between neighborhoods and to encourage walking and bicycling to neighborhood destinations.
- C-2.8: Signals, roundabouts, traffic circles and other traffic management techniques shall be applied appropriately at residential and collector street intersections with collector and arterial streets in order to allow bicyclists and pedestrians to travel conveniently and safely from one neighborhood to another.
- C-2.15: Ensure that development and infrastructure projects are designed in a way that provides pedestrian and bicycle connectivity to adjacent neighborhoods and areas (such as ensuring that sound walls, berms, and similar physical barriers are considered and gaps or other measures are provided to ensure connectivity).
- C-4.1: Through regular updates to the City's Active Transportation Plan, establish a safe and convenient network of identified bicycle and pedestrian routes connecting residential areas with schools, recreation, shopping, and employment areas within the city, generally as shown in Figure CI-2). The City shall also strive to develop connections with existing and planned regional routes shown in the San Joaquin County Bicycle Master Plan.

- C-4.2: Improve safety conditions, efficiency, and comfort for bicyclists and pedestrians by providing shade trees and controlling traffic speeds by implementing narrow lanes or other traffic calming measures in accordance with the City Neighborhood Traffic Calming Program on appropriate streets, in particular residential and downtown areas.

- C-4.3: Provide a sidewalk and bicycle route system that serves all pedestrian and bicycle users and meets the latest guidelines related to the Americans with Disabilities Act (ADA).

- C-4.4: Provide bicycle parking facilities at commercial, business/professional and light industrial uses in accordance with Part 11 of the California Building Standards Code.

- C-4.5: Expand the existing network of off-street bicycle facilities as shown in the City's Active Transportation Plan to accommodate cyclists who prefer to travel on dedicated trails. Further, the City shall strive to develop: 1) a "city-loop" Class I bike path for use by both bicyclists and pedestrians that links Austin Road, Atherton Drive, Airport Way, and a route along or near Lathrop Road to the Tidewater bike path and its existing and planned extensions, and 2) an off-street bicycle trail extension between the Tidewater Bike Trail near the intersection of Moffat Boulevard and Industrial Park Drive to the proposed regional route between Manteca and Ripon.

- C.4-6: Provide on-street Class II bike lanes, Class IV protected bike lanes, or off-street Class I bike paths along major collector and arterial streets whenever feasible.

- C.4.7: Facilitate bicycle travel through residential streets through signage necessary to communicate the presence of Class III bicycle lanes on residential streets that have sufficiently low volumes as to not require bike lanes or have narrower street cross sections that assist in calming traffic.

- C.4.8: Provide sidewalks and/or walkways connecting to the residential neighborhoods, primary public destinations, major public parking areas, transit stops, and intersections with the bikeway system.

- C.4.9: Provide sidewalks along both sides of all new streets in the City.

- C-5.1: Encourage and plan for the expansion of regional bus service in the Manteca area.

- C-5.2: Promote increased commuter and regional passenger rail service that will benefit the businesses and residents of Manteca. Examples include Amtrak, the Altamont Commuter Express (ACE), and high-speed rail.

- C-5.3: Identify and implement means of enhancing the opportunities for residents to commute from residential neighborhoods to the ACE station or other transit facilities that may develop in the City.

- C-5.4: Include primary locations where the transit systems will connect to the major bikeways and pedestrian ways and primary public parking areas in the Active Transportation Plan (see C-4a).

- C-5.5: Encourage programs that provide ridesharing and vanpool opportunities and other alternative modes of transportation for Manteca residents.

- C-5.6: Promote the development of park-and-ride facilities near I-5, SR 120, SR 99, and transit stations.

- C-5.7: Maintain a working relationship between the City administration and the local management of the Union Pacific Railroad regarding expansion of freight and passenger rail service and economic development of the region.

- C-5.8: Design future roadways to accommodate transit facilities, as appropriate. These design elements should include installation of transit stops adjacent to intersections and provision of bus turnouts and sheltered stops, where feasible.

- C-5.9: Encourage land uses and site developments that promote public transit along fixed route public transportation corridors, with priority given to those projects that will bring the greatest increase in transit ridership.

- C-5.10: Ensure that development projects provide adequate facilities to accommodate school buses, including loading and turn-out locations in multifamily and other projects that include medium and high density residential uses, and that the school districts are provided an opportunity to address specific needs associated with school busing.

- C-5.11: As new areas and neighborhoods of the City are developed, fund transit expansion (including capital, operations, and maintenance) to provide service levels consistent with existing development.

- C-7.1: Encourage employers to provide alternative mode subsidies, bicycle facilities, alternative work schedules, ridesharing, telecommuting, and work-at-home programs employee education and preferential parking for carpools/vanpools.

- C-7.2: Require development projects that accommodate or employee 50 or more full-time equivalent employees to establish a transportation demand management (TDM) program.

- C-7.3: Partner with SJCOG on the Dibs program, which is the regional smart travel program, including rideshare, transit, walking, and biking, operated by SJCOG.

- C-7.4: Require proposed development projects that could have a potentially significant VMT impact to consider reasonable and feasible project modifications and other measures during the project design and environmental review stage of project development that would reduce VMT effects in a manner consistent with state guidance on VMT reduction.

- C-7.5: Evaluate the feasibility of a local or regional VMT impact fee program, bank, or exchange. Such an offset program, if determined feasible, would be administered by the City or a City-approved agency, and would offer demonstrated VMT reduction strategies through transportation demand management programs, impact fee programs, mitigation banks or exchange programs, in-lieu fee programs, or other land use project conditions that reduce VMT in a manner consistent with state guidance on VMT reduction. If, through on-site changes, a subject project cannot eliminate VMT impacts, the project could contribute on a pro-rata basis to a local or regional VMT reduction bank or exchange, as necessary, to reduce net VMT impacts.

- C-7.6: Expand alternatives to driving by increasing opportunities to walk, bike, and use

transit.

Implementation: Circulation Element

- C-1c: Develop a pedestrian, bicycle, and transit improvement plan for the Downtown area to facilitate implementation of level of service policy C-1.4. This plan will develop a list of multi-modal improvements in the Downtown area to increase the viability and encourage the use of non-auto modes.

- C-2b: When planning roadway facilities, incorporate the concept of complete streets. Complete streets include design elements for all modes that use streets, including autos, transit, pedestrians, and bicycles. Complete streets shall be developed in a context-sensitive manner. For example, it may be more appropriate to provide a Class I bike path instead of bike lanes along a major arterial. Pedestrian districts like Downtown Manteca or areas near school entrances should have an enhanced streetscape (e.g., narrower travel lanes, landscape buffers with street trees, etc.) to better accommodate and encourage pedestrian travel.

- C-2f: Ensure that bicycle and pedestrian access is provided through walls and berms to minimize travel distances and increase the viability walking and bicycling.

- C-2i: Pursue funding to improve and address areas of traffic, bicycle, and pedestrian hazards and conflicts with vehicular traffic movements.

- C-4a: Periodically update the Active Transportation Plan to include all areas envisioned for development by this General Plan and to address pedestrian and bicycle facilities needed to provide a complete circulation system that adequately meets the needs of pedestrians and bicyclists.

- C.4b: Utilize the standards set forth in the latest editions of the California MUTCD and American Association of State Highway and Transportation Officials (AASHTO) Green Book for improvement and re-striping of appropriate major collector and arterial streets to accommodate Class II bike lanes or Class IV protected bikeways in both directions, where sufficient roadway width is available. This may include narrowing of travel lanes.

- C.4d: Add bicycle facilities whenever possible in conjunction with road rehabilitation, reconstruction, or re-striping projects.

- C-4e: Update the City's standard plans to accommodate pedestrians and bicyclists, including landscape-separated sidewalks where appropriate, and to include bike lanes on collector and arterial streets, as defined by the Active Transportation Plan.

- C-4f: Encourage and facilitate resident and visitor use of the bike trail system by preparing a map of the pedestrian and bike paths and implementing wayfinding signage.

- C-4g: Update the standard plans to specify a set of roadways with narrower lanes (less than 12 feet) and pedestrian bulb-outs to calm traffic and increase pedestrian and bicycle comfort. These narrow lane standards shall be applied to appropriate streets (e.g., they shall not be applied to outside lanes on major truck routes) and new development.

- C-5a: Periodically review transit needs in the city and adjust bus routes to accommodate

changing land use and transit demand patterns. The City shall also periodically coordinate with the San Joaquin Regional Transit District to assess the demand for regional transit services.

- C-5b: Explore a transit connections study that would identify improvements to connections and access to the existing ACE station, the Manteca Transit Center, and future planned transit stations.

- C-5c: Update the City's standard plans to include the option for bus turnouts at intersections of major streets.

- C-5d: Review and consider alternatives to conventional bus systems, such as smaller shuttle buses (i.e. micro-transit), on-demand transit services, or transportation networking company services that connect neighborhood centers to local activity centers with greater cost efficiency.

- C-5e: Work with the school districts to identify and implement opportunities for joint-use public transit that would provide both student transportation and local transit service.

- C-5f: Through the development review process, ensure that projects provide increased land use densities and mixed uses, consistent with the Land Use Element to enhance the feasibility of transit and promote alternative transportation modes.

- C-5g: Along fixed route corridors, require that new development to be compatible with and further the achievement of the Circulation Element. Requirements for compatibility may include but are not limited to:

    - Orienting pedestrian access to transit centers and existing and planned transit routes.

    - Orienting buildings, walkways, and other features to provide pedestrian access from the street and locating parking to the side or behind the development, rather than separating the development from the street and pedestrian with parking.

    - Providing clearly delineated routes through parking lots to safely accommodate pedestrian and bicycle circulation.

- C-5h: Review and update the City's funding programs to provide for adequate transit services, including funding for capital, operations, and maintenance, commensurate with growth of the City.

- C-7a: Provide information about transit services, ridesharing, vanpools, and other transportation alternatives to single occupancy vehicles at City Hall, the library, and on the City website.

- C-7b: Develop TDM program requirements with consideration of addressing CEQA vehicle miles traveled impact analysis requirements (i.e., SB 743) in accordance with implementation measure C-1c. TDM programs shall include measures to reduce total vehicle miles traveled and peak hour vehicle trips. A simplified version of the Air District's Rule 9510 could be used to implement this measure.

- C-7c: Coordinate with the San Joaquin Council of Governments on a Congestion/Mobility Management Program to identify TDM strategies to reduce VMT and mitigate peak-hour congestion impacts. Strategies may include: growth management and activity center strategies, telecommuting, increasing transit service frequency and speed, transit information systems, subsidized and discount transit programs, alternative work hours, carpooling, vanpooling, guaranteed ride home program, parking management, addition of general purpose lanes, channelization, computerized signal systems, intersection or midblock widenings, and Intelligent Transportation Systems.

- C-7d: Proposed development projects shall consider the list of potential measures below. This list is not intended to be exhaustive, and not all measures may be feasible, reasonable, or applicable to all projects. The purpose of this list is to identify options for future development proposals, not to constrain projects to this list, or to require that a project examine or include all measures from this list. Potential measures, with possible ranges of VMT reduction for a project, include:*

    - *Increase density of development (up to 10.75 percent)*
    - *Increase diversity of land uses (up to 12 percent)*
    - *Encourage telecommuting and alternative work schedules (up to 4.5 percent)*
    - *Implement car-sharing programs (up to 5 percent)*
    - *Implement parking management and pricing (up to 6 percent)*
    - *Implement subsidized or discounted transit program (up to 0.7 percent)*
    - *Implement commute trip reduction marketing and launch targeted behavioral interventions (up to 3 percent)*

    **Note: VMT reduction ranges based on Quantifying Greenhouse Gas Mitigation Measures, California Air Pollution Control Officers Association (2010) and new research compiled by Fehr & Peers (2020). Additional engineering analysis is required prior to applying reductions to specific projects. Actual reductions will vary by project and project context.*

- C-7e: Partner with SJCOG, San Joaquin County, and neighboring cities to evaluate a potential regional VMT impact fee program, bank, or exchange.

- C-7f: Implement the Active Transportation Plan and other Bikeway and Pedestrian Systems goals and polices (C-4).

- C-7g: Expand transit service and increase transit frequency and implement Public Transit goals and policies (C-5).

Policies: Community Facilities and Services Element

- CF-11.2: Implement and enforce the provisions of the City's Source Reduction and Recycling Program and update the program as necessary to meet or exceed the State waste diversion requirements.

- CF-11.3: Reduce municipal waste generation by increasing recycling, on-site composting, and mulching, where feasible, at municipal facilities, as well as using resource efficient landscaping techniques in new or renovated medians and parks.

- CF-11.4: Encourage residential, commercial, and industrial recycling and reuse programs and techniques.

- CF-11.5: Coordinate with and support other local agencies and jurisdictions in the region to develop and implement effective waste management strategies and waste-to-energy technologies.

Policies: Resource Conservation Element

- RC-4.1: Prepare for and respond to the expected impacts of climate change.
- RC-4.2: Assess and monitor the effects of climate change and the associated levels of risk in order to adapt to changing climate conditions and be resilient to negative changes and impacts associated with climate change.
- RC-5.1: Ensure that land use and circulation improvements are coordinated to reduce the number and length of vehicle trips.
- RC-5.2: Encourage private development to explore and apply non-traditional energy sources such as co-generation, wind, and solar to reduce dependence on traditional energy sources.
- RC-5.3: Require all new public and privately constructed buildings to meet and comply with construction and design standards that promote energy conservation, including the most current "green" development standards in the California Green Building Standards Code.
- RC-5.4: Support innovative and green building best practices including, but not limited to, LEED certification for all new development, and encourage public and private projects to exceed the most current "green" development standards in the California Green Building Standards Code.
- RC-5.5: Encourage the conservation of public utilities.
- RC-5.6: Encourage the conservation of petroleum products.
- RC-6.1: Coordinate with the San Joaquin Valley Air Pollution Control District (Air District), San Joaquin Council of Governments, and the California Air Resources Board (State Air Board), and other agencies to develop and implement regional and county plans, programs, and mitigation measures that address cross-jurisdictional and regional air quality impacts, including land use, transportation, and climate change impacts, and incorporate the relevant provisions of those plans into City planning and project review procedures. Also cooperate with the Air District, SJCOG, and State Air Board in:
    - Enforcing the provisions of the California and Federal Clean Air Acts, state and regional policies, and established standards for air quality.
    - Identifying baseline air pollutant and greenhouse gas emissions.
    - Encouraging economy clean fuel for city vehicle fleets, when feasible.
    - Developing consistent procedures for evaluating and mitigating project-specific and cumulative air quality impacts of projects.
- RC-6.2: Minimize exposure of the public to toxic or harmful air emissions and odors through requiring an adequate buffer or distance between residential and other sensitive land uses

and land uses that typically generate air pollutants, toxic air contaminants, or obnoxious fumes or odors, including but not limited to industrial, manufacturing, and processing facilities, highways, and rail lines.

- RC-6.3: Ensure that new construction is managed to minimize fugitive dust and construction vehicle emissions.

- RC-6.4: Require appliances and equipment, including wood-burning devices, in development projects to meet current standards for controlling air pollution, including particulate matter and toxic air contaminants.

- RC-6.5: Require and/or cooperate with the Air District to ensure that burning of any combustible material within the City is consistent with Air District regulations to minimize particulate air pollution.

Implementation: Resource Conservation Element

- RC-4a: Continue to assess and monitor performance of greenhouse gas emissions reduction efforts, including progress toward meeting longer-term GHG emissions reduction goals for 2035 and 2050 by reporting on the City's progress annually, updating the Climate Action Plan and GHG inventory regularly to demonstrate consistency with State-adopted GHG reduction targets, including those targets established beyond 2020, and updating the GHG Strategy in the General Plan, as appropriate.

- RC-4b: When updating master plans for infrastructure, including water supply, flood control, and drainage, and critical facilities, review relevant climate change scenarios and ensure that the plans consider the potential effects of climate change and include measures to provide resilience.

- RC-4c: Incorporate the likelihood of climate change impacts into City emergency response planning and training.

- RC-5a: Implement development standards and best practices that promote energy conservation and the reduction in greenhouse gases, including:

    - Require new development to be energy-efficient through passive design concepts (e.g., techniques for heating and cooling, building siting orientation, street and lot layout, landscape placement, and protection of solar access;

    - Require construction standards which promote energy conservation including window placement, building eaves, and roof overhangs;

    - Require all projects to meet minimum State and local energy conservation standards;

    - Require best practices in selecting construction methods, building materials, project appliances and equipment, and project design;

    - Encourage and accommodate projects that incorporate alternative energy;

    - Encourage projects to incorporate enhanced energy conservation measures and other voluntary methods of reducing energy usage and greenhouse gas emissions; and

- Require large energy users to implement an energy conservation plan as part of the project review and approval process, and develop a program to monitor compliance with and effectiveness of that plan.

- RC-5b: Continue to review development projects to ensure that all new public and private development complies with the California Code of Regulations, Title 24 standards as well as the energy efficiency standards established by the General Plan and the Municipal Code.

- RC-5c: Develop a public education program to increase public participation in energy conservation.

- RC-5d: Connect residents and businesses with programs that provide free or low-cost energy efficiency audits and retrofits to existing buildings.

- RC-5e: Update the Municipal Code to incentivize the use of small-scale renewable energy facilities and, where appropriate, to remove impediments to such uses.

- RC-5f: Cooperate with other agencies, jurisdictions, and organizations to expand energy conservation programs.

- RC-5g: Explore alternative energy sources, including co-generation, active solar energy, and wind generation, and identify opportunities for alternative energy to be used in public and private projects.

- RC-5h: Implement transportation measures, as outlined in the Circulation Element, which reduce the need for automobile use and petroleum products.

- RC-6a: Work with the Air District to implement the Air Quality Management Plan (AQMP).

    - Cooperate with the Air District to develop consistent and accurate procedures for evaluating project-specific and cumulative air quality impacts.

    - Cooperate with the Air District and the State Air Board in their efforts to develop a local airshed model.

    - Cooperate with the Air District in its efforts to develop a cost/benefit analysis of possible control strategies (mitigation measures to minimize short and long-term stationary and area source emissions as part of the development review process, and monitoring measures to ensure that mitigation measures are implemented.

- RC-6b: Review development, land use, transportation, and other projects that are subject to CEQA for potentially significant climate change and air quality impacts, including toxic and hazardous emissions and require that projects provide adequate, appropriate, and cost-effective mitigation measures reduce significant and potentially significant impacts. This includes, but is not limited to, the following:

    - *Use of the Air District "Guide for Assessing and Mitigating Air Quality Impacts", as may be amended or replaced from time to time, in identifying thresholds, evaluating potential project and cumulative impacts, and determining appropriate mitigation measures;*

- *Contact the Air District for comment regarding potential impacts and mitigation measures as part of the evaluation of air quality effects of discretionary projects that are subject to CEQA;*
- *Require projects to participate in regional air quality mitigation strategies, including Air District-required regulations, as well as recommended best management practices when applicable and appropriate ;*
- *Promote the use of new and replacement fuel storage tanks at refueling stations that are clean fuel compatible, if technically and economically feasible;*
- *The use of energy efficient lighting (including controls) and process systems beyond Title 24 requirements shall be encouraged where practicable (e.g., water heating, furnaces, boiler units, etc.);*
- *The use of energy efficient automated controls for air conditioning beyond Title 24 requirements shall be encouraged where practicable; and*
- *Promote solar access through building siting to maximize natural heating and cooling, and landscaping to aid passive cooling and to protect from winds;*
- *The developer of a sensitive air pollution receptor shall submit documentation that the project design includes appropriate buffering (e.g., setbacks, landscaping) to separate the use from highways, arterial streets, hazardous material locations and other sources of air pollution or odor;*
- *Identify sources of toxic air emissions and, if appropriate, require preparation of a health risk assessment in accordance with Air District-recommended procedures; and*
- *Circulate the environmental documents for projects with significant air quality impacts to the Air District for review and comment.*

- RC-6c: Review area and stationary source projects that could have a significant air quality impact, either individually or cumulatively, to identify the significance of potential impacts and ensure that adequate air quality mitigation is incorporated into the project, including:

  - *The use of best available and economically feasible control technology for stationary industrial sources;*
  - *All applicable particulate matter control requirements of Air District Regulation VIII;*
  - *The use of new and replacement fuel storage tanks at refueling stations that are clean fuel compatible, if technically and economically feasible;*
  - *Provision of adequate electric or natural gas outlets to encourage use of natural gas or electric barbecues and electric gardening equipment; and*
  - *Use of alternative energy sources.*

- RC-6d: Maintain adequate data to analyze cumulative land use impacts on air quality and climate change. This includes tracking proposed, planned, and approved General Plan amendments, development, and land use decisions so that projects can be evaluated for cumulative air quality impacts, including impacts associated with transportation and land use decisions.

- RC-6e: Prior to entitlement of a project that may be an air pollution point source, such as a manufacturing and extracting facility, the developer shall provide documentation that the use is located and appropriately separated from residential areas and sensitive receptors (e.g., homes, schools, and hospitals).

- RC-6f: Construction activity plans shall include and/or provide for a dust management plan

to prevent fugitive dust from leaving the property boundaries and causing a public nuisance or a violation of an ambient air standard.

Project development applicants shall be responsible for ensuring that all adequate dust control measures are implemented in a timely manner during all phases of project development and construction.

City of Manteca Municipal Code

Chapter 17.58 of the Manteca Municipal Code describes the odor, particulate matter, and air containment standards (consistent with the rules and regulations of the SJVAPCD and the California Health and Safety Code. Chapter 15.62 of the Municipal Code provides expedited permitting procedures for electric vehicle charging stations. Furthermore, Chapter 15.60 describes the solar energy system requirements associated with small residential rooftop solar energy systems within the City.

San Joaquin Valley Air Pollution Control District

The primary role of SJVAPCD is to develop plans and implement control measures in the SJVAB to control air pollution. These controls primarily affect stationary sources such as industry and power plants. Rules and regulations have been developed by SJVAPCD to control air pollution from a wide range of air pollution sources. SJVAPCD also provides uniform procedures for assessing potential air quality impacts of proposed projects and for preparing the air quality section of environmental documents.

AIR QUALITY PLANNING

The U.S. EPA requires states that have areas that do not meet the National AAQS to prepare and submit air quality plans showing how the National AAQS will be met. If the states cannot show how the National AAQS will be met, then the states must show progress toward meeting the National AAQS. These plans are referred to as the State Implementation Plans (SIP). California's adopted 2007 State Strategy was submitted to the U.S. EPA as a revision to its SIP in November 2007.[2] More recently, in October 2018, the CARB adopted the 2018 Updates to the California State Implementation Plan.

In addition, the CARB requires regions that do not meet California AAQS for ozone to submit clean air plans (CAPs) that describe measures to attain the standard or show progress toward attainment. To ensure federal CAA compliance, SJVAPCD is currently developing plans for meeting new National AAQS for ozone and $PM_{2.5}$ and the California AAQS for PM_{10} in the SJVAB (for California CAA compliance)[3] The following describes the air plans prepared by the SJVAPCD, which are incorporated by reference per CEQA Guidelines Section 15150.

[2] Note that the plan was adopted by CARB on September 27, 2007; California Air Resources Board. 2007. California Air Resources Board's Proposed State Strategy for California's 2007 State Implementation Plan.
[3] SJVAPCD, 2012. 2012 $PM_{2.5}$ Plan, December 20.

1-HOUR OZONE PLAN

Although U.S. EPA revoked its 1979 1-hour ozone standard in June 2005, many planning requirements remain in place, and SJVAPCD must still attain this standard before it can rescind CAA Section 185 fees. The SJVAPCD's most recent 1-hour ozone plan, the 2013 Plan for the Revoked 1-hour Ozone Standard, demonstrated attainment of the 1-hour ozone standard by 2017. However, on July 18, 2016, the U.S. EPA published in the Federal Register a final action determining that SJVAB has attained the 1-hour ozone NAAQS based on the 2012 to 2014 three-year period allowing nonattainment penalties to be lifted under federal Clean Air Act section 179b (SJVAPCD, 2015).

8-HOUR OZONE PLAN

The SJVAPCD's Governing Board adopted the 2007 Ozone Plan on April 30, 2007. This far-reaching plan, with innovative measures and a "dual path" strategy, assures expeditious attainment of the federal 8-hour ozone standard as set by U.S. EPA in 1997. The plan projects that the valley will achieve the 8-hour ozone standard for all areas of the SJVAB no later than 2023. The CARB approved the plan on June 14, 2007. The U.S. EPA approved the 2007 Ozone Plan effective April 30, 2012. SJVAPCD adopted the 2016 Ozone Plan to address the federal 2008 8-hour ozone standard, which must be attained by end of 2031.[4,5]

PM_{10} PLAN

Based on PM_{10} measurements from 2003 to 2006, the U.S. EPA found that the SJVAB has reached federal PM_{10} standards. On September 21, 2007, the SJVAPCD's Governing Board adopted the 2007 PM_{10} Maintenance Plan and Request for Redesignation. This plan demonstrates that the valley will continue to meet the PM_{10} standard. U.S. EPA approved the document and on September 25, 2008, the SJVAB was redesignated to attainment/maintenance (SJVAPCD, 2015).

PM2.5 PLAN

The SJVAPCD adopted the 2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards on November 15, 2018.[6] This plan addresses the U.S. EPA federal 1997 annual $PM_{2.5}$ standard of 15 µg/m³ and 24-hour $PM_{2.5}$ standard of 65 µg/m³; the 2006 24-hour $PM_{2.5}$ standard of 35 µg/m³; and the 2012 annual $PM_{2.5}$ standard of 12 µg/m³. This plan demonstrates attainment of the federal $PM_{2.5}$ standards as expeditiously as practicable (SJVAPCD, 2020).

All of the above-referenced plans include measures (i.e., federal, state, and local) that would be implemented through rule making or program funding to reduce air pollutant emissions in the

[4] SJVAPCD. Ozone Plans. http://www.valleyair.org/ Air_Quality_Plans/Ozone_Plans.htm, accessed March 3, 2020.

[5] SJVAPCD. 2016 Plan for the 2008 8-Hour Ozone Standard, http://www.valleyair.org/Air_Quality_Plans/Ozone-Plan-2016.htm, accessed March 3, 2020.

[6] SJVAPCD. Particulate Matter Plans. http://valleyair.org/Air_Quality_Plans/PM_Plans.htm, accessed March 9, 2020.

SJVAB. Transportation control measures are part of these plans.

SJVAPCD RULES AND REGULATIONS

SJVAPCD Indirect Source Review

On December 15, 2005, SJVAPCD adopted the Indirect Source Review Rule (ISR or Rule 9510) to reduce ozone precursors (i.e., ROG and NOx) and PM_{10} emissions from new land use development projects. Specifically, Rule 9510 targets the indirect emissions from vehicles and construction equipment associated with these projects and applies to both construction and operational-related impacts. The rule applies to any applicant that seeks to gain a final discretionary approval for a development project, or any portion thereof, which upon full buildout would include any one of the following:

- 50 residential units.
- 2,000 square feet of commercial space.
- 25,000 square feet of light industrial space.
- 100,000 square feet of heavy industrial space.
- 20,000 square feet of medical office space.
- 39,000 square feet of general office space.
- 9,000 square feet of educational space.
- 10,000 square feet of government space.
- 20,000 square feet of recreational space.
- 9,000 square feet of space not identified above.
- Transportation/transit projects with construction exhaust emissions of two or more tons of NOx or two or more tons of PM_{10}.
- Residential projects on contiguous or adjacent property under common ownership of a single entity in whole or in part, that is designated and zoned for the same development density and land use, regardless of the number of tract maps, and has the capability of accommodating more than 50 residential units.
- Nonresidential projects on contiguous or adjacent property under common ownership of a single entity in whole or in part, that is designated and zoned for the same development density and land use, and has the capability of accommodating development projects that emit two or more tons per year of NOx or PM_{10} during project operations.

The rule requires all subject, nonexempt projects to mitigate both construction and operational period emissions by (1) applying feasible SJVAPCD-approved mitigation measures, or (2) paying any applicable fees to support programs that reduce emissions. Off-site emissions reduction fees (off-site fee) are required for projects that do not achieve the required emissions reductions through on-site emission reduction measures. Phased projects can defer payment of fees in accordance with an Off-site Emissions Reduction Fee Deferral Schedule (FDS) approved by the SJVAPCD.

To determine how an individual project would satisfy Rule 9510, each project would submit an air quality impact assessment (AIA) to the SJVAPCD as early as possible, but no later than prior to the project's final discretionary approval, to identify the project's baseline unmitigated emissions

inventory for indirect sources: on-site exhaust emissions from construction activities and operational activities from mobile and area sources of emissions (excludes fugitive dust and permitted sources). Rule 9510 requires the following reductions, which are levels that the SJVAPCD has identified as necessary, based on their air quality management plans, to reach attainment for ozone and particulate matter:

Construction Equipment Emissions

The exhaust emissions for construction equipment greater than 50 horsepower (hp) used or associated with the development project shall be reduced by the following amounts from the statewide average as estimated by CARB:

- 20 percent of the total NOx emissions
- 45 percent of the total PM_{10} exhaust emissions

Mitigation measures may include those that reduce construction emissions on-site by using less polluting construction equipment, which can be achieved by utilizing add-on controls, cleaner fuels, or newer, lower emitting equipment.

Operational Emissions

- NOx Emissions. Applicants shall reduce 33.3 percent of the project's operational baseline NOx emissions over a period of 10 years as quantified in the approved AIA.
- PM_{10} Emissions. Applicants shall reduce of 50 percent of the project's operational baseline PM_{10} emissions over a period of 10 years as quantified in the approved AIA.

These requirements listed above can be met through any combination of on-site emission reduction measures. In the event that a project cannot achieve the above standards through imposition of mitigation measures, then the project would be required to pay the applicable off-site fees. These fees are used to fund various incentive programs that cover the purchase of new equipment, engine retrofit, and education and outreach.

Fugitive PM_{10} Prohibitions

SJVAPCD controls fugitive PM_{10} through Regulation VIII, Fugitive PM_{10} Prohibitions. The purpose of this regulation is to reduce ambient concentrations of PM_{10} and $PM_{2.5}$ by requiring actions to prevent, reduce, or mitigate anthropogenic (human caused) fugitive dust emissions.

- Regulation VIII, Rule 8021 applies to any construction, demolition, excavation, extraction, and other earthmoving activities, including, but not limited to, land clearing, grubbing, scraping, travel on-site, and travel on access roads to and from the site.
- Regulation VIII, Rule 8031 applies to the outdoor handling, storage, and transport of any bulk material.
- Regulation VIII, Rule 8041 applies to sites where carryout or trackout has occurred or may occur on paved roads or the paved shoulders of public roads.
- Regulation VIII, Rule 8051 applies to any open area having 0.5 acre or more within urban areas or 3.0 acres or more within rural areas, and contains at least 1,000 square feet of disturbed surface area.

- Regulation VIII, Rule 8061 applies to any new or existing public or private paved or unpaved road, road construction project, or road modification project.
- Regulation VIII, Rule 8071 applies to any unpaved vehicle/equipment traffic area.
- Regulation VIII, Rule 8081 applies to off-field agricultural sources.

Sources regulated are required to provide Dust Control Plans that meet the regulation requirements. Under Rule 8021, a Dust Control Plan is required for any residential project that will include 10 or more acres of disturbed surface area, a nonresidential project with 5 or more acres of disturbed surface area, or a project that relocates 2,500 cubic yards per day of bulk materials for at least three days. The Dust Control Plan is required to be submitted to SJVAPCD prior to the start of any construction activity. The Dust Control Plan must also describe fugitive dust control measure to be implemented before, during, and after any dust-generating activity. For sites smaller than those listed above, the project is still required to notify SJVAPCD a minimum of 48 hours prior to commencing earthmoving activities.

National Emission Standards for Hazardous Air Pollutants

Rule 4002 applies in the event an existing building will be renovated, partially demolished or removed (National Emission Standards for Hazardous Air Pollutants); this rule applies to all sources of Hazardous Air Pollutants.

Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations

If asphalt paving will be used, then paving operations of the proposed Project will be subject to Rule 4641. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.

Nuisance Odors

SJVAPCD controls nuisance odors through implementation of Rule 4102, Nuisance. Pursuant to this rule, "a person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such person or the public or which cause or have a natural tendency to cause injury or damage to business or property."

Employer Based Trip Reduction Program

SJVAPCD has implemented Rule 9410, Employer Based Trip Reduction. The purpose of this rule is to reduce VMT from private vehicles used by employees to commute to and from their worksites to reduce emissions of NOx, ROG, and particulate matter (PM_{10} and $PM_{2.5}$). The rule applies to employers with at least 100 employees. Employers are required to implement an Employer Trip Reduction Implementation Plan (ETRIP) for each worksite with 100 or more eligible employees to meet applicable targets specified in the rule. Employers are required to facilitate the participation of the development of ETRIPs by providing information to its employees explaining the requirements and applicability of this rule. Employers are required to prepare and submit an ETRIP for each worksite to the District. The ETRIP must be updated annually. Under this rule, employers shall collect information on the modes of transportation used for each eligible employee's commutes both to and from work for every day of the commute verification period, as defined in using either the

mandatory commute verification method or a representative survey method. Annual reporting includes the results of the commute verification for the previous calendar year along with the measures implemented as outlined in the ETRIP and, if necessary, any updates to the ETRIP.

1.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact on the environment associated with air quality if it will:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; and/or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

CRITERIA POLLUTANT EMISSIONS MODELING

California Emission Estimator Model (CalEEMod)™ (v.2022.1), developed for the California Air Pollution Officers Association (CAPCOA) in collaboration with California air districts, was used to estimate emissions for the proposed Project. Project buildout was assumed to be completed in 2025. This may prove to be a conservative estimate, because criteria pollutant emission rates are reduced over time (due to state and federal mandates) and would be expected to be even lower than reported in this analysis, should the Project buildout be completed after 2025.

The assumptions for the modeling were selected on a best-fit basis, and are consistent with information provided by the Project applicant and the *Trip Generation and VMT Memo* prepared by Fehr & Peers. The land uses modeled include: Health Club – (82,000 square feet); Quality Restaurant – (54,090 square feet). Vehicle trip rates estimated in the modeling are consistent with the vehicle trips rates included in the modeling developed by Fehr & Peers. The construction phase includes site preparation, grading, building construction, paving, and architectural coating phases. See Appendix B for further detail.

IMPACTS RELATED TO PROJECT-GENERATED POLLUTANTS OF HUMAN HEALTH CONCERN

In December 2018, the California Supreme Court issued its decision in *Sierra Club v. County of Fresno* (226 Cal.App.4th 704) (hereafter referred to as the Friant Ranch Decision). The case reviewed the long-term, regional air quality analysis contained in the EIR for the proposed Friant Ranch development. The Friant Ranch Project is a 942-acre master-plan development in unincorporated Fresno County within the San Joaquin Valley Air Basin. The Court found that the air quality analysis was inadequate because it failed to provide enough detail "for the public to translate the bare [criteria pollutant emissions] numbers provided into adverse health impacts or to understand why

such a translation is not possible at this time." The Court's decision clarifies that the agencies authoring environmental documents must make reasonable efforts to connect a project's air quality impacts to specific health effects or explain why it is not technically feasible to perform such an analysis.

All criteria pollutants that would be generated by the Project are associated with some form of health risk (e.g., asthma). Criteria pollutants can be classified as either regional or localized pollutants. Regional pollutants can be transported over long distances and affect ambient air quality far from the emissions source. Localized pollutants affect ambient air quality near the emissions source. Ozone is considered a regional criteria pollutant, whereas CO, NO_2, SO_2, and lead (Pb) are localized pollutants. PM can be both a local and a regional pollutant, depending on its composition. As discussed above, the primary criteria pollutants of concern generated by the Project are ozone precursors (ROG and NO_x) and PM (including Diesel PM). The lead agency has determined that, given the nature and size of the Project, a qualitative approach to correlating the expected air quality emissions of Projects to the likely health consequences of the increased emissions is appropriate.

Regional Project-Generated Criteria Pollutants (Ozone Precursors and Regional PM)

Adverse health effects induced by regional criteria pollutant emissions generated by the Project (ozone precursors and PM) are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, the number and character of exposed individuals [e.g., age, gender]). For these reasons, ozone precursors (ROG and NO_x) contribute to the formation of ground-borne ozone on a regional scale, where emissions of ROG and NO_x generated in one area may not equate to a specific ozone concentration in that same area. Similarly, some types of particulate pollutants may be transported over long-distances or formed through atmospheric reactions. As such, the magnitude and locations of specific health effects from exposure to increased ozone or regional PM concentrations are the product of emissions generated by numerous sources throughout a region, as opposed to a single individual project.

As discussed above, air districts develop region-specific CEQA thresholds of significance in consideration of existing air quality concentrations and attainment or nonattainment designations under the NAAQS and CAAQS. The NAAQS and CAAQS are informed by a wide range of scientific evidence that demonstrates there are known safe concentrations of criteria pollutants. While recognizing that air quality is a cumulative problem, air districts typically consider projects that generate criteria pollutant and ozone precursor emissions below these thresholds to be minor in nature and would not adversely affect air quality such that the NAAQS or CAAQS would be exceeded. Emissions generated by the Project could increase photochemical reactions and the formation of tropospheric ozone and secondary PM, which at certain concentrations, could lead to increased incidence of specific health consequences. Although these health effects are associated with ozone and particulate pollution, the effects are a result of cumulative and regional emissions. As such, a project's incremental contribution to specific health outcomes on a regional scale would be very minimal, given the size of the Project. Therefore, a quantitative correlation of Project-generated regional criteria pollutant emissions to specific human health impacts is not included in this analysis.

Other Pollutants of Human Health Concern

The impact analysis does not directly evaluate airborne lead. Neither construction nor future operations would generate quantifiable lead emissions because of regulations that require unleaded fuel and that prohibit lead in new building materials.

TAC emissions associated with Project construction that could affect surrounding areas are evaluated qualitatively. The potential for the Project operations to expose residents to TAC emissions that would exceed applicable health standards is analyzed qualitatively.

Lastly, the SJVPACD recommends that odor impacts be addressed in a qualitative manner. Such an analysis must determine if the Project would result in excessive nuisance odors, as defined under the SJVAPCD's Rule 4102 and California Code of Regulations, Health and Safety Code Section 41700, Air Quality Public Nuisance.

IMPACTS AND MITIGATION MEASURES

Impact 1-1: Project operation would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in non-attainment, or conflict or obstruct implementation of the District's air quality plan. (Less than Significant)

The SJVAPCD is tasked with implementing programs and regulations required by the Federal Clean Air Act and the California Clean Air Act. In that capacity, the SJVAPCD has prepared plans to attain Federal and State ambient air quality standards. To achieve attainment with the standards, the SJVAPCD has established thresholds of significance for criteria pollutant emissions in their *SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts* (2015). Projects with emissions below the thresholds of significance for criteria pollutants would be determined to "Not conflict or obstruct implementation of the District's air quality plan."

The proposed Project would be both a direct and indirect source of air pollution. Direct sources of pollution include area, energy, and water and waste sources, due to development of the on-site buildings and associated infrastructure. Indirect sources of pollution would be due to the generation of trips of from vehicles traveling to and from the Project site.

CalEEMod™ (v.2022.1) was used to model operational emissions of the proposed Project. Table 1-6 shows proposed Project emissions as provided by CalEEMod. The SJVAPCD provides a list of applicable air quality emissions thresholds.

TABLE 1-6: OPERATIONAL PROJECT GENERATED EMISSIONS (TONS PER YEAR)

POLLUTANT	*CO*	*NOX*	*ROG*	*SOX*	*PM_{10}*	*$PM_{2.5}$*
THRESHOLD	100	10	10	27	15	15
EMISSIONS	1.89	0.37	0.62	<0.01	0.29	0.08
EXCEEDS THRESHOLD?	**N**	**N**	**N**	**N**	**N**	**N**

SOURCES: CALEEMOD (V.2022.1)

The SJVAPCD has established their thresholds of significance by which the Project emissions are compared against to determine the level of significance. The SJVAPCD has established operations related emissions thresholds of significance as follows: 100 tons per year of carbon monoxide (CO, 10 tons per year of oxides of nitrogen (NO_x), 10 tons per year of reactive organic gases (ROG), 27 tons per year of sulfur oxides (SO_x), 15 tons per year particulate matter of 10 microns or less in size (PM_{10}), and 15 tons per year particulate matter of 2.5 microns or less in size ($PM_{2.5}$). If the proposed Project's emissions will exceed the SJVAPCD's threshold of significance for operational-generated emissions, the proposed Project will have a significant impact on air quality and all feasible mitigation are required to be implemented to reduce emissions to the extent feasible. As shown in Table 1-6 above, operational emissions would not exceed any of the SJVACPD operational thresholds of significance.

PROJECT EFFECTS ON PUBLIC HEALTH

Fresno County has a state designation of Nonattainment for ozone, PM_{10} and $PM_{2.5}$. The SJVAPCD developed these Project-level thresholds based on the emissions that would exceed a CAAQS or contribute substantially to an existing or projected violation of a CAAQS. Ambient levels of these criteria pollutants are likely to decrease in the future, based on current and future implementation of federal and/or state regulatory requirements, such as improvements to the statewide vehicle fleet over time (including the long-term replacement of internal combustion engine vehicles with electric vehicles in coming decades).

Ozone

O_3 is not emitted directly into the air, but is formed through complex chemical reactions between precursor emissions of volatile organic compounds (VOC) (also known as ROG) and oxides of nitrogen (NO_x) in the presence of sunlight. The reactivity of O_3 causes health problems because it damages lung tissue, reduces lung function and sensitizes the lungs to other irritants. Scientific evidence indicates that ambient levels of O_3 not only affect people with impaired respiratory systems, such as asthmatics, but healthy adults and children as well. Exposure to O_3 for several hours at relatively low concentrations has been found to significantly reduce lung function and induce respiratory inflammation in normal, healthy people during exercise. This decrease in lung function generally is accompanied by symptoms including chest pain, coughing, sneezing and pulmonary congestion.

Studies show associations between short-term ozone exposure and non-accidental mortality, including deaths from respiratory issues. Studies also suggest long-term exposure to ozone may increase the risk of respiratory-related deaths (U.S. Environmental Protection Agency, 2019a). The concentration of ozone at which health effects are observed depends on an individual's sensitivity, level of exertion (i.e., breathing rate), and duration of exposure. Studies show large individual differences in the intensity of symptomatic responses, with one study finding no symptoms to the least responsive individual after a 2-hour exposure to 400 parts per billion of ozone and a 50 percent decrement in forced airway volume in the most responsive individual. Although the results vary, evidence suggest that sensitive populations (e.g., asthmatics) may be affected on days when the 8-hour maximum ozone concentration reaches 80 parts per billion (U.S. Environmental Protection Agency, 2019b).

The Project would generate emissions of ROG and NO_x during Project operational activities, as shown in Table 1-6. Although the exact effects of Project-level emissions on local health are not precisely known, it is likely that the increases in ROG and NO_x generated by the proposed Project would especially affect people with impaired respiratory systems, but also healthy adults and children located in the immediate vicinity of the Project site. However, the increases of these pollutants generated by the proposed Project are not on their own likely to generate an increase in the number of days exceeding the NAAQS or CAAQS standards, based on the size of the proposed Project in comparison to Fresno County as a whole. Instead, the increases in ROG and NO_x generated by the proposed Project when combined with the existing ROG and NO_x emitted regionally, would affect people, especially those with impaired respiratory systems located in the immediate vicinity of the Project site.

Particulate Matter

Based on studies of human populations exposed to high concentrations of particles (sometimes in the presence of SO_2) and laboratory studies of animals and humans, PM can cause major effects of concern for human health. These include effects on breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular disease, alterations in the body's defense systems against foreign materials, damage to lung tissue, carcinogenesis and premature death. Small particulate pollution has health impacts even at very low concentrations – indeed no threshold has been identified below which no damage to health is observed. The major subgroups of the population that appear to be most sensitive to the effects of particulate matter include individuals with chronic obstructive pulmonary or cardiovascular disease or influenza, asthmatics, the elderly and children.

Numerous studies have linked PM exposure to premature death in people with preexisting heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms. Studies show that every 1 microgram per cubic meter reduction in $PM_{2.5}$ results in a one percent reduction in mortality rate for individuals over 30 years old (Bay Area Air Quality Management District, 2017). Long-term exposures, such as those experienced by people living for many years in areas with high particle levels, have been associated with problems such as reduced lung function and the development of chronic bronchitis – and even premature death. Additionally, depending on its composition, both PM_{10} and $PM_{2.5}$ can also affect water quality and acidity, deplete soil nutrients, damage sensitive forests and crops, affect ecosystem diversity, and contribute to acid rain (U.S. Environmental Protection Agency, 2019c).

The Project would generate emissions of PM during Project operational activities, as shown in Table 1-6. Although the exact effects of such emissions on local health are not known, it is likely that the increases in PM generated by the proposed Project would especially affect people with impaired respiratory systems, but also healthy adults and children located in the immediate vicinity of the Project site. However, the increases of these pollutants generated by the proposed Project are not on their own likely to generate an increase in the number of days exceeding the NAAQS or CAAQS standards, based on the size of the Project in comparison the Fresno County as a whole. Instead, the increases in PM generated by the proposed Project when combined with the existing PM emitted regionally, would affect people, especially those with impaired respiratory systems located in the

immediate vicinity of the Project site.

CONCLUSION

As shown in Table 1-6, the proposed Project's operational criteria pollutant would not exceed the applicable SJVAPCD thresholds of significance. Therefore, the Project's criteria pollutant emissions would be considered to have a **less than significant** impact.

Impact 1-2: Proposed Project construction activities would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in non-attainment, or conflict or obstruct implementation of the District's air quality plan. (Less than Significant)

Emissions from construction activities represent temporary impacts that are typically short in duration, depending on the size, phasing, and type of project. Air quality impacts can nevertheless be acute during construction periods, resulting in significant localized impacts to air quality. Construction-related activities would result in Project-generated emissions from demolition, site preparation, grading, paving, building construction, and architectural coatings. CalEEMod™ (v.2022.1) was used to estimate construction emissions for the proposed Project. Table 1-7, below, provides the construction criteria pollutant emissions associated with implementation of the proposed Project.

TABLE 1-7: MAXIMUM CONSTRUCTION PROJECT GENERATED EMISSIONS (TONS PER YEAR)

POLLUTANT	*CO*	*NOX*	*ROG*	*SOX*	*PM_{10}*	*$PM_{2.5}$*
THRESHOLD	100	10	10	27	15	15
EMISSIONS	1.92	1.60	0.18	<0.01	0.28	0.16
EXCEEDS THRESHOLD?	**N**	**N**	**N**	**N**	**N**	**N**

SOURCES: CALEEMOD (V.2022.1)

If the proposed Project's emissions will exceed the SJVAPCD's threshold of significance for construction-generated emissions, the proposed Project will have a significant impact on air quality and all feasible mitigation are required to be implemented to reduce emissions. As shown in Table 1-7, Project maximum construction emissions would not exceed the SJVAPCD thresholds of significance. Nevertheless, regardless of emission quantities, the SJVAPCD requires construction related control measures in accordance with their rules and regulations. Implementation of these control measures (provided in further detail below) would further reduce proposed Project construction related emissions to the extent possible.

The first step is to prepare a Dust Control Plan that meets all of the applicable requirements of APCD Rule 8021. All construction activities are required to implement dust control measures, as required by APCD Rules 8011-8081, to limit Visible Dust Emissions to 20% opacity or less. Dust control measures include application of water or chemical dust suppressants to unpaved roads and graded areas, covering or stabilization of transported bulk materials, prevention of carryout or trackout of soil materials to public roads, limiting the area subject to soil disturbance, construction of wind barriers, access restrictions to inactive sites as required by the applicable rules. The following dust

control practices are identified in Tables 6-2 and 6-3 of the GAMAQI (2002):

a. *All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover.*
b. *All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.*
c. *All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall control fugitive dust emissions by application of water or by presoaking.*
d. *When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least six inches of freeboard space from the top of the container shall be maintained.*
e. *All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.*
f. *Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.*
g. *Limit traffic speeds on unpaved roads to 15 mph.*
h. *Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.*

The proposed Project would comply with pre-existing requisite federal, State, SJVAPCD, and other local regulations and requirements, as well as implement the control measures provided by the SJVAPCD for construction-related PM_{10} emissions.

CONCLUSION

The proposed Project would comply with pre-existing requisite federal, State, SJVAPCD, and other local regulations and requirements, as well as implement the control measures provided by the SJVAPCD for construction-related PM_{10} emissions. Compliance with the existing rules and regulations would ensure that the Project's criteria pollutant emissions would be considered to have a **less than significant** impact.

Impact 1-3: The proposed Project would not generate carbon monoxide hotspot impacts. (Less than Significant)

Very high levels of CO are not likely to occur outdoors. However, when CO levels are elevated outdoors, they can be of particular concern for people with some types of heart disease. These people already have a reduced ability for getting oxygenated blood to their hearts in situations where the heart needs more oxygen than usual. They are especially vulnerable to the effects of CO when exercising or under increased stress. In these situations, short-term exposure to elevated CO may result in reduced oxygen to the heart accompanied by chest pain also known as angina (U.S.

EPA, 2016). Such acute effects may occur under current ambient conditions for some sensitive individuals, while increases in ambient CO levels could increase the risk of such incidences.

The Project site is located in a State attainment area and a federal attainment-unclassified area for carbon monoxide. In addition, CO emissions under Project operation are below the applicable significance threshold promulgated by the SJVAPCD. Therefore, no project-level conformity analysis is necessary for CO. Increases in proposed Project VMT would increase concentrations of carbon monoxide (CO) along streets and intersections that provide access to the Project site. Carbon monoxide is a local pollutant (i.e., high concentrations are normally only found very near sources), and can form local elevated concentrations under specific conditions. The major source of carbon monoxide, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations (i.e., hotspots), therefore, are usually only found near areas of very high traffic volume and congestion.

Several factors combine to make substantial concentrations of carbon monoxide unlikely. Existing physical constraints such as high-density, high-profile buildings or other obstructions that could prevent dispersion of carbon monoxide are largely absent. Predominant weather conditions in the area include air movement that would help facilitate carbon monoxide dispersion. Congested traffic conditions that otherwise could result in concentration of carbon monoxide would be of short duration. Further, under existing regulatory and legislative mandates, emissions volumes from all vehicles classes will continue to decline. Given these factors, substantial concentrations of carbon monoxide are not expected at or along any affected roadways or intersections.

CONCLUSION

This Project is located in an area that is designated attainment and attainment-unclassified for carbon monoxide. No Project-level conformity analysis is necessary for CO. Substantial concentrations of carbon monoxide are not expected at or along any streets or intersections affected by the development of the Project site. Impacts associated with carbon monoxide hotspots would be **less than significant***,* and no additional mitigation is required.

Impact 1-4: The proposed Project does not have the potential for public exposure to toxic air contaminants. (Less than Significant)

A toxic air contaminant (TAC) is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at very low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the state and federal governments have set ambient air quality standards.

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. EPA regulate 188 air toxics, also known as hazardous air pollutants. The U.S. EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile

sources. In addition, the U.S. EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment. These are acrolein, benzene, 1,3-butidiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter.

The 2007 U.S. EPA rule requires controls that will dramatically decrease Mobile Source Air Toxics (MSAT) emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (VMT) increases by 145 percent, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050. California maintains stricter standards for clean fuels and emissions compared to the national standards, therefore it is expected that MSAT trends in California will decrease consistent with or more than the U.S. EPA's national projections.

The California Air Resources Board (CARB) published the *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB, 2005) to provide information to local planners and decision-makers about land use compatibility issues associated with emissions from industrial, commercial and mobile sources of air pollution. The CARB Handbook indicates that mobile sources continue to be the largest overall contributors to the State's air pollution problems, representing the greatest air pollution health risk to most Californians. The most serious pollutants on a statewide basis include diesel exhaust particulate matter (diesel PM), benzene, and 1,3-butadiene, all of which are emitted by motor vehicles. These mobile source air toxics are largely associated with freeways and high traffic roads. Non-mobile source air toxics are largely associated with industrial and commercial uses. Table 1-8 provides the California Air Resources Board minimum separation recommendations on siting sensitive land uses.

TABLE 1-8: CARB MINIMUM SEPARATION RECOMMENDATIONS ON SITING SENSITIVE LAND USES

SOURCE CATEGORY	*ADVISORY RECOMMENDATIONS*
Freeways and High-Traffic Roads	• Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	• Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). • Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	• Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. • Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	• Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the CARB on the status of pending analyses of health risks.
Refineries	• Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	• Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.

Dry Cleaners Using Perchloro-ethylene	• Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. • Do not site new sensitive land uses in the same building with perc dry cleaning operations.
Gasoline Dispensing Facilities	• Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities.

SOURCES: AIR QUALITY AND LAND USE HANDBOOK: A COMMUNITY HEALTH PERSPECTIVE" (CARB 2005)

The proposed Project does not include any sensitive land uses. Additionally, the proposed Project itself is not a sensitive land use. Since the proposed Project would not site land uses that would generate a significant risk of public exposure to TACs, the proposed Project would have a **less than significant** impact relative to this topic.

Impact 1-5: The proposed Project would not cause exposure to other emissions (such as those leading to odors) adversely affecting a substantial number of people. (Less than Significant)

The following text addresses odors. Other emissions (including criteria pollutants and TACs) are addressed in Impacts 1-1 through 1-4.

While offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the SJVAPCD. The general nuisance rule (Health and Safety Code §41700) is the basis for the threshold.

Examples of facilities that are known producers of odors include: Wastewater Treatment Facilities, Chemical Manufacturing, Sanitary Landfill, Fiberglass Manufacturing, Transfer Station, Painting/Coating Operations (e.g. auto body shops), Composting Facility, Food Processing Facility, Petroleum Refinery, Feed Lot/Dairy, Asphalt Batch Plant, and Rendering Plant.

If a project proposes to locate receptors and known odor sources in proximity to each other, further analysis may be warranted. However, if a project would not locate receptors and known odor sources in proximity to each other, then further analysis is not warranted. The proposed Project does not include new industrial uses that are not already present in the vicinity of the Project site. Air district Rule 402 prohibits any mobile or stationary source generating an objectionable odor, with the exception of odors emanating from certain agricultural operations. The California Health and Safety Code §41700 and Air District Rule 402 prohibit emissions of air contaminants from any source that cause nuisance or annoyance to a considerable number of people or that present a threat to public health or cause property damage. Compliance with these rules would preclude land uses proposed under the proposed Project from emitting objectionable odors.

CONCLUSION

The proposed Project does not propose sensitive receptors that would be exposed to odors in the vicinity; nor does it propose uses that would create new odors that would expose substantial

numbers of people. Therefore, operation of the proposed Project would not result in significant objectionable odors. Impacts associated with exposure to odors would be **less than significant.**

This section discusses regional greenhouse gas (GHG) emissions, climate change, and energy conservation impacts that could result from Project implementation. The analysis contained in this section is intended to be at a Project-level, and covers impacts associated with the conversion of the entire site to urban uses. This section provides a background discussion of greenhouse gases and climate change linkages and effects of global climate change. This section is organized with an existing setting, regulatory setting, approach/methodology, and impact analysis. The analysis and discussion of the GHG, climate change, and energy conservation impacts in this section focuses on the proposed Project's consistency with local, regional, and statewide climate change planning efforts and discusses the context of these planning efforts as they relate to the proposed Project. Disclosure and discussion of the Project's estimated energy usage and greenhouse gas emissions are provided.

2.1 ENVIRONMENTAL SETTING

GREENHOUSE GASES AND CLIMATE CHANGE LINKAGES

Various gases in the Earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the Earth's surface temperature. Solar radiation enters Earth's atmosphere from space, and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation.

Naturally occurring GHGs include water vapor (H_2O), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3). Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also GHGs, but they are, for the most part, solely a product of industrial activities. Although the direct GHGs CO_2, CH_4, and N_2O occur naturally in the atmosphere, human activities have changed their atmospheric concentrations. From the pre-industrial era (i.e., ending about 1750) to 2011, concentrations of these three GHGs have increased globally by 40, 150, and 20 percent, respectively (IPCC, 2013).

GHGs, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), ozone (O_3), water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs).

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. In California, the transportation sector is the largest emitter of GHGs, followed by the industrial and electricity generation sectors (California Energy Commission, 2023).

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California produced 369 million gross metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2022 (California Air Resources Board, 2023).

Carbon dioxide equivalents are a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2022, accounting for 38% of total GHG emissions in the State. This category was followed by the industrial sector (23%), the electricity generation sector (including both in-state and out of-state sources) (16%), the agriculture and forestry sector (9%), the residential energy consumption sector (8%), and the commercial energy consumption sector (6%) (California Air Resources Board, 2023).

EFFECTS OF GLOBAL CLIMATE CHANGE

The effects of increasing global temperature are far-reaching and extremely difficult to quantify. The scientific community continues to study the effects of global climate change. In general, increases in the ambient global temperature as a result of increased GHGs are anticipated to result in rising sea levels, which could threaten coastal areas through accelerated coastal erosion, threats to levees and inland water systems and disruption to coastal wetlands and habitat.

If the temperature of the ocean warms, it is anticipated that the winter snow season would be shortened. Snowpack in the Sierra Nevada provides both water supply (runoff) and storage (within the snowpack before melting), which is a major source of supply for the State. The snowpack portion of the supply could potentially decline by 50% to 75% by the end of the 21st century (National Resources Defense Council, 2014). This phenomenon could lead to significant challenges securing an adequate water supply for a growing state population. Further, the increased ocean temperature could result in increased moisture flux into the State; however, since this would likely increasingly come in the form of rain rather than snow in the high elevations, increased precipitation could lead to increased potential and severity of flood events, placing more pressure on California's levee/flood control system.

Sea level has risen approximately seven inches during the last century and it is predicted to rise an additional 22 to 35 inches by 2100, depending on the future GHG emissions levels (California Environmental Protection Agency, 2010). If this occurs, resultant effects could include increased coastal flooding, saltwater intrusion and disruption of wetlands. As the existing climate throughout California changes over time, mass migration of species, or failure of species to migrate in time to adapt to the perturbations in climate, could also result. Under the emissions scenarios of the Climate Scenarios report (California Environmental Protection Agency, 2010), the impacts of global warming in California are anticipated to include, but are not limited to, the following.

Public Health

Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to ozone formation are projected to increase from 25% to 35% under the lower warming range and to 75% to 85% under the medium warming range. In addition, if global background ozone levels increase as predicted in some scenarios, it may become impossible to meet local air quality standards. Air quality could be further compromised by increases in wildfires, which emit fine particulate matter that can travel long distances depending on wind conditions. The Climate Scenarios report indicates that large wildfires could become up to 55% more frequent if GHG emissions are not significantly reduced.

In addition, under the higher warming scenario, there could be up to 100 more days per year with temperatures above 90°F in Los Angeles and 95°F in Sacramento by 2100. This is a large increase over historical patterns and approximately twice the increase projected if temperatures remain within or below the lower warming range. Rising temperatures will increase the risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

Water Resources

A vast network of man-made reservoirs and aqueducts capture and transport water throughout the State from northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada snow pack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snow pack, increasing the risk of summer water shortages.

The State's water supplies are also at risk from rising sea levels. An influx of saltwater would degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta, a major State fresh water supply. Global warming is also projected to seriously affect agricultural areas, with California farmers projected to lose as much as 25% of the water supply they need; decrease the potential for hydropower production within the State (although the effects on hydropower are uncertain); and seriously harm winter tourism. Under the lower warming range, the snow dependent winter recreational season at lower elevations could be reduced by as much as one month. If temperatures reach the higher warming range and precipitation declines, there might be many years with insufficient snow for skiing, snowboarding, and other snow dependent recreational activities.

If GHG emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snow pack by as much as 70% to 90%. Under the lower warming scenario, snow pack losses are expected to be only half as large as those expected if temperatures were to rise to the higher warming range. How much snow pack will be lost depends in part on future precipitation patterns, the projections for which remain uncertain. However, even under the wetter climate projections, the loss of snow pack would pose challenges to water managers, hamper hydropower generation, and nearly eliminate all skiing and other snow-related recreational activities.

Agriculture

Increased GHG emissions are expected to cause widespread changes to the agriculture industry, reducing the quantity and quality of agricultural products statewide. Although higher carbon dioxide levels can stimulate plant production and increase plant water-use efficiency, California's farmers will face greater water demand for crops and a less reliable water supply as temperatures rise.

Plant growth tends to be slow at low temperatures, increasing with rising temperatures up to a threshold. However, faster growth can result in less-than-optimal development for many crops, so rising temperatures are likely to worsen the quantity and quality of yield for a number of California's agricultural products. Products likely to be most affected include wine grapes, fruits and nuts, and milk.

Crop growth and development will be affected, as will the intensity and frequency of pest and disease outbreaks. Rising temperatures will likely aggravate ozone pollution, which makes plants more susceptible to disease and pests and interferes with plant growth.

In addition, continued global warming will likely shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. Range expansion is expected in many species while range contractions are less likely in rapidly evolving species with significant populations already established. Should range contractions occur, it is likely that new or different weed species will fill the emerging gaps. Continued global warming is also likely to alter the abundance and types of many pests, lengthen pests' breeding season, and increase pathogen growth rates.

Forests and Landscapes

Global warming is expected to alter the distribution and character of natural vegetation thereby resulting in a possible increased risk of large wildfires. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55%, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the State. For example, if precipitation increases as temperatures rise, wildfires in southern California are expected to increase by approximately 30% toward the end of the century. In contrast, precipitation decreases could increase wildfires in northern California by up to 90%.

Moreover, continued global warming will alter natural ecosystems and biological diversity within the State. For example, alpine and sub-alpine ecosystems are expected to decline by as much as 60% to 80% by the end of the century as a result of increasing temperatures. The productivity of the State's forests is also expected to decrease as a result of global warming.

Rising Sea Levels

Rising sea levels, more intense coastal storms, and warmer water temperatures will increasingly threaten the State's coastal regions. Under the higher warming scenario, sea level is anticipated to rise 22 to 35 inches by 2100. Elevations of this magnitude would inundate coastal areas with

saltwater, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.

ENERGY CONSUMPTION

Energy in California is consumed from a wide variety of sources. Fossil fuels (including gasoline and diesel fuel, natural gas, and energy used to generate electricity) are most widely used form of energy in the State. However, renewable sources of energy (such as solar and wind) are growing in proportion to California's overall energy mix. A large driver of renewable sources of energy in California is the State's current Renewable Portfolio Standard (RPS), which requires the State to derive at least 33% of electricity generated from renewable resources by 2020, 60 percent by 2030, and to achieve zero-carbon emissions by 2045 (as passed in September 2018, under AB 100).

Overall, in 2018, California's per capita energy usage was ranked fourth-lowest in the nation (U.S. EIA, 2023). California's per capita rate of energy usage has remained relatively constant since the 1970's. Many State regulations since the 1970's, including new building energy efficiency standards, vehicle fleet efficiency measures, as well as growing public awareness, have helped to keep per capita energy usage in the State in check.

The consumption of non-renewable energy (i.e. fossil fuels) associated with the operation of passenger, public transit, and commercial vehicles, results in GHG emissions that contribute to global climate change. Alternative fuels such as natural gas, ethanol, and electricity (unless derived from solar, wind, nuclear, or other energy sources that do not produce carbon emissions) also result in GHG emissions and contribute to global climate change.

Electricity Consumption

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. In 2022, approximately one quarter of the electricity supply comes from facilities outside of the State. Much of the power delivered to California from states in the Pacific Northwest was generated by wind. States in the Southwest delivered power generated at coal-fired power plants, at natural gas-fired power plants, and from nuclear generating stations (U.S. EIA, 2023b). In 2016, approximately 42 percent of California's utility-scale net electricity generation was fueled by natural gas. In addition, about 42 percent of the State's utility-scale net electricity generation came from non-hydroelectric renewable technologies, such as solar, wind, geothermal, and biomass. Another 7 percent of the State's utility-scale net electricity generation came from hydroelectric generation, and nuclear energy powered an additional 88 percent. The amount of electricity generated from coal is negligible (U.S. EIA, 2023a). The percentage of renewable resources as a proportion of California's overall energy portfolio is increasing over time, as directed by the State's Renewable Portfolio Standard (RPS).

According to the California Energy Commission (CEC), total statewide electricity consumption increased from 166,979 gigawatt-hours (GWh) in 1980 to 228,038 GWh in 1990, which is an estimated annual growth rate of 3.66 percent. The statewide electricity consumption in 1997 was 246,225 GWh, reflecting an annual growth rate of 1.14 percent between 1990 and 1997 (U.S. EIA, 2023b). Statewide consumption was 274,985 GWh in 2010, an annual growth rate of 0.9 percent

between 1997 and 2010. In 2021, electricity consumption in San Joaquin County was 5,608 GWh (California Energy Commission, 2023).

Oil

The primary energy source for the United States is oil, which is refined to produce fuels like gasoline, diesel, and jet fuel. Oil is a finite, nonrenewable energy source. World consumption of petroleum products has grown steadily in the last several decades. As of 2016, world consumption of oil had reached 96 million barrels per day. The United States, with approximately five percent of the world's population, accounts for approximately 19 percent of world oil consumption, or approximately 18.6 million barrels per day (U.S. EIA, 2023c). The transportation sector relies heavily on oil. In California, petroleum-based fuels currently provide approximately 96 percent of the State's transportation energy needs.

Natural Gas/Propane

The State produces approximately 12 percent of its natural gas, while obtaining 22 percent from Canada and 65 percent from the Rockies and the Southwest (California Energy Commission, 2012). In 2006, California produced 325.6 billion cubic feet of natural gas (California Energy Commission, 2012). PG&E is the largest publicly-owned utility in California and provides natural gas for residential, industrial, and agency consumers within the San Joaquin County area. In 2021, natural gas consumption in San Joaquin County was 186 million therms (California Energy Commission, 2023).

2.2 REGULATORY SETTING

FEDERAL

Clean Air Act

The Federal Clean Air Act (FCAA) was first signed into law in 1970. In 1977, and again in 1990, the law was substantially amended. The FCAA is the foundation for a national air pollution control effort, and it is composed of the following basic elements: NAAQS for criteria air pollutants, hazardous air pollutant standards, State attainment plans, motor National Ambient Air Quality Standards (NAAQS) vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The EPA is responsible for administering the FCAA. The FCAA requires the EPA to set NAAQS for several problem air pollutants based on human health and welfare criteria. Two types of NAAQS were established: primary standards, which protect public health, and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction.

On April 2, 2007, in the court case of *Massachusetts et al. vs. the USEPA et al*. (549 U.S. 497), the U.S. Supreme Court found that GHGs are air pollutants covered by the federal Clean Air Act (42 USC Sections 7401-7671q). The Supreme Court held that the Administrator of the United States Environmental Protection Agency must determine whether or not emissions of GHGs from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned

decision. In making these decisions, the Administrator is required to follow the language of Section 202(a) of the Clean Air Act. On December 7, 2009, the Administrator signed two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed GHGs (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) in the atmosphere threaten the public health and welfare of current and future generations.

- Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution, which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action was a prerequisite for implementing GHG emission standards for vehicles. In collaboration with the National Highway Traffic Safety Administration (NHTSA) and CARB, the USEPA developed emission standards for light-duty vehicles (2012-2025 model years), and heavy-duty vehicles (2014-2027 model years).

Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the Act, the National Highway Traffic and Safety Administration, which is part of the U.S. Department of Transportation (USDOT), is responsible for establishing additional vehicle standards and for revising existing standards.

Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, which is administered by the EPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the USDOT is authorized to assess penalties for noncompliance.

Energy Policy Act of 1992 (EPAct)

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, State, and local government and private fleets to purchase a percentage of light duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are included

in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

Energy Policy Act of 2005

The Energy Policy Act of 2005 was signed into law on August 8, 2005. Generally, the act provides for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for a clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Federal Climate Change Policy

According to the EPA, "the United States government has established a comprehensive policy to address climate change" that includes slowing the growth of emissions; strengthening science, technology, and institutions; and enhancing international cooperation. To implement this policy, "the Federal government is using voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science." The EPA administers multiple programs that encourage voluntary GHG reductions, including "ENERGY STAR", "Climate Leaders", and Methane Voluntary Programs. However, as of this writing, there are no adopted federal plans, policies, regulations, or laws directly regulating GHG emissions.

Mandatory Greenhouse Gas Reporting Rule

In 2009, EPA issued a final rule for mandatory reporting of GHGs from large GHG emissions sources in the United States. In general, this national reporting requirement will provide EPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons or more of CO_2 per year. This publicly available data will allow the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost effective opportunities to reduce emissions in the future. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial GHGs along with vehicle and engine manufacturers will report at the corporate level. An estimated 85% of the total U.S. GHG emissions, from approximately 10,000 facilities, are covered by this final rule.

STATE

The California Legislature has enacted a series of statutes in recent years addressing the need to reduce GHG emissions all across the State. These statutes can be categorized into four broad categories: (i) statutes setting numerical statewide targets for GHG reductions, and authorizing CARB to enact regulations to achieve such targets; (ii) statutes setting separate targets for increasing the use of renewable energy for the generation of electricity throughout the State; (iii) statutes addressing the carbon intensity of vehicle fuels, which prompted the adoption of regulations by CARB; and (iv) statutes intended to facilitate land use planning consistent with statewide climate objectives. The discussion below will address each of these key sets of statutes, as well as CARB "Scoping Plans" intended to achieve GHG reductions under the first set of statutes and recent building code requirements intended to reduce energy consumption.

Statutes Setting Statewide GHG Reduction Targets

ASSEMBLY BILL 32 (GLOBAL WARMING SOLUTIONS ACT)

In 2006, the California State Legislature enacted the California Global Warming Solutions Act of 2006 (Health & Safety Code Section 38500 et seq.), also known as Assembly Bill (AB) 32 (Stats. 2006, ch. 488). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be accomplished through an enforceable statewide cap on GHG emissions that was phased in starting in 2012. To effectively implement the cap, AB 32 directs the California Air Resources Board (CARB) to develop and implement regulations to reduce statewide GHG emissions from stationary sources.

SENATE BILL 32

SB 32 (Stats. 2016, ch. 249) added Section 38566 to the Health and Safety Code. It provides that "[i]n adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by [Division 25.5 of the Health and Safety Code], [CARB] shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030." In other words, SB 32 requires California, by 2030, to reduce its statewide GHG emissions so that they are 40 percent below those that occurred in 1990.

Between AB 32 (2006) and SB 32 (2016), the Legislature has codified some of the ambitious GHG reduction targets included within certain high-profile Executive Orders issued by the last two Governors. The 2020 statewide GHG reduction target in AB 32 was consistent with the second of three statewide emissions reduction targets set forth in former Governor Arnold Schwarzenegger's 2005 Executive Order known as S-3-05, which is expressly mentioned in AB 32. (See Health & Safety Code Section 38501, subd. (i).) That Executive Branch document included the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels. To meet the targets, the Governor directed several State agencies to cooperate in the development of a climate action plan. The Secretary of Cal-EPA leads the Climate Action Team, whose goal is to implement global warming emission reduction programs identified in the Climate Action Plan and to report on the progress made toward meeting the emission reduction targets established in the executive order.

In 2015, Governor Brown issued Executive Order, B-30-15, which created a "new interim statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 is established in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050." SB 32 codified this target.

In 2018, the Governor issued Executive Order B-55-18, which established a statewide goal to "achieve carbon neutrality as soon as possible, and no later than 2045, and maintain and achieve negative emissions thereafter." The order directs the CARB to work with other State agencies to identify and recommend measures to achieve those goals.

Notably, the Legislature has not yet set a 2045 or 2050 target in the manner done for 2020 and 2030 through AB 32 and SB 32, though references to a 2050 target can be found in statutes outside the Health and Safety Code. Senate Bill 350 (SB 350) (Stats. 2015, ch. 547) added to the Public Utilities Code language that essentially puts into statute the 2050 GHG reduction target already identified in Executive Order S-3-05, albeit in the limited context of new state policies (i) increasing the overall share of electricity that must be produced through renewable energy sources and (ii) directing certain State agencies to begin planning for the widespread electrification of the California vehicle fleet. Section 740.12(a)(1)(D) of the Public Utilities Code now states that "[t]he Legislature finds and declares [that] … [r]educing emissions of [GHGs] to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050 will require widespread transportation electrification." Furthermore, Section 740.12(b) now states that the California Public Utilities Commission (PUC), in consultation with CARB and the California Energy Commission (CEC), must "direct electrical corporations to file applications for programs and investments to accelerate widespread transportation electrification to reduce dependence on petroleum, meet air quality standards, … and reduce emissions of greenhouse gases to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050."

AB 1279

In September 2022, the Legislature enacted AB 1279 (Stats. 2022, ch. 337). The bill declares the policy of the state to achieve net zero GHG emissions as soon as possible, but no later than 2045, and achieve and maintain net negative GHG emissions thereafter. Additionally, the bill requires that by 2045, statewide anthropogenic GHG emissions be reduced to at least 85% below 1990 levels.

Statute Setting Target for the Use of Renewable Energy for the Generation of Electricity

CALIFORNIA RENEWABLES PORTFOLIO STANDARD

In 2002, the Legislature enacted Senate Bill 1078 (Stats. 2002, ch. 516), which established the Renewables Portfolio Standard program, requiring retail sellers of electricity, including electrical corporations, community choice aggregators, and electric service providers, to purchase a specified minimum percentage of electricity generated by eligible renewable energy resources such as wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas. (See Pub. Utilities Code, Section 399.11 et seq. [subsequently amended].) The legislation set a target by which 20 percent of the State's electricity would be generated by renewable sources. (Pub. Utility Code, Section 399.11, subd. (a) [subsequently amended].) As described in the Legislative Counsel's Digest, Senate Bill 1078 required "[e]ach electrical corporation … to increase its total procurement of eligible renewable energy resources by at least one percent per year so that 20 percent of its retail sales are procured from eligible renewable energy resources. If an electrical corporation fails to procure sufficient eligible renewable energy resources in a given year to meet an annual target, the electrical corporation would be required to procure additional eligible renewable resources in subsequent years to compensate for the shortfall, if funds are made available as described. An electrical corporation with at least 20 percent of retail sales procured from eligible renewable energy resources in any year would not be required to increase its procurement in the following year."

In 2006, the Legislature enacted Senate Bill 107 (Stats. 2006, ch. 464), which modified the Renewables Portfolio Standard to require that at least 20 percent of electricity retail sales be served by renewable energy resources by year 2010. (Pub. Utility Code, Section 399.11, subd (a) [subsequently amended].)

Senate Bill X1-2 (Stats. 2011, 1st Ex. Sess., ch. 1) set even more aggressive statutory targets for renewable electricity, culminating in the requirement that 33 percent of the State's electricity come from renewables by 2020. This legislation applies to all electricity retailers in the State, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. All of these entities must meet renewable energy goals of 20 percent of retail sales from renewables by the end of 2013, 25 percent by the end of 2016, and 33 percent by the end of 2020. (See Pub. Utility Code, Section 399.11 et seq. [subsequently amended].)

SB 350, discussed above, increases the Renewable Portfolio Standard to require 50 percent of electricity generated to be from renewables by 2030. (Pub. Utility Code, Section 399.11, subd (a); see also Section 399.30, subd. (c)(2).) Of equal significance, Senate Bill 350 also embodies a policy encouraging a substantial increase in the use of electric vehicles. As noted earlier, Section 740.12(b) of the Public Utilities Code now states that the PUC, in consultation with CARB and the CEC, must "direct electrical corporations to file applications for programs and investments to accelerate widespread transportation electrification to reduce dependence on petroleum, meet air quality standards, … and reduce emissions of greenhouse gases to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050."

Executive Order, B-16-12, issued in 2012, embodied a similar vision of a future in which zero-emission vehicles (ZEV) will play a big part in helping the State meet its GHG reduction targets. Executive Order B-16-12 directed State government to accelerate the market for in California through fleet replacement and electric vehicle infrastructure. The Executive Order set the following targets:

- By 2015, all major cities in California will have adequate infrastructure and be "ZEV ready";
- By 2020, the State will have established adequate infrastructure to support 1 million ZEVs in California;
- By 2025, there will be 1.5 million ZEVs on the road in California; and
- By 2050, virtually all personal transportation in the State will be based on ZEVs, and GHG emissions from the transportation sector will be reduced by 80 percent below 1990 levels.

In 2018, Senate Bill 100 (Stats. 2018, ch. 312) revised the above-described deadlines and targets so that the State will have to achieve a 50% renewable resources target by December 31, 2026 (instead of by 2030) and achieve a 60% target by December 31, 2030. The legislation also establishes a State policy that eligible renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to California end-use customers and 100% of electricity procured to serve all State agencies by December 31, 2045.

In summary, California has set a statutory goal of requiring that, by the 2030, 60 percent of the electricity generated in California should be from renewable sources, with increased generation

capacity intended to sufficiently allow the mass conversion of the statewide vehicle fleet from petroleum-fueled vehicles to electrical vehicles and/or other ZEVs. By 2045, all electricity must come from renewable resources and other carbon-free resources. Former Governor Brown had an even more ambitious goal for the State of achieving carbon neutrality as soon as possible and by no later than 2045. The Legislature is thus looking to California drivers to buy electric cars, powered by green energy, to help the State meet its aggressive statutory goal, created by SB 32, of reducing statewide GHG emissions by 2030 to 40 percent below 1990 levels. Another key prong to this strategy is to make petroleum-based fuels less carbon-intensive. A number of statutes in recent years have addressed that strategy. These are discussed immediately below.

Statutes and CARB Regulations Addressing the Carbon Intensity of Petroleum-based Transportation Fuels

ASSEMBLY BILL 1493, PAVLEY CLEAN CARS STANDARDS

In 2002, the Legislature enacted Assembly Bill 1493 ("Pavley Bill") (Stats. 2002, ch. 200), which directed the CARB to develop and adopt regulations that achieve the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty trucks beginning with model year 2009. (See Health and Safety Code Section 43018.5.) In September 2004, pursuant to this directive, CARB approved regulations to reduce GHG emissions from new motor vehicles beginning with the 2009 model year. These regulations created what are commonly known as the "Pavley standards." In September 2009, CARB adopted amendments to the Pavley standards to reduce GHG emissions from new motor vehicles through the 2016 model year. These regulations created are what are commonly known as the "Pavley II standards." (See California Code of Regulations, Title 13, Sections 1900, 1961, and 1961.1 et seq.)

In 2012, CARB adopted an Advanced Clean Cars (ACC) program aimed at reducing both smog-causing pollutants and GHG emissions for vehicles model years 2017-2025. This historic program, developed in coordination with the USEPA and NHTSA, combined the control of smog-causing (criteria) pollutants and GHG emissions into a single coordinated set of requirements for model years 2015 through 2025. The regulations focus on substantially increasing the number of plug-in hybrid cars and zero-emission vehicles in the vehicle fleet and on making fuels such as electricity and hydrogen readily available for these vehicle technologies. The components of the ACC program are the Low-Emission Vehicle (LEV) regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the Zero-Emission Vehicle (ZEV) regulation, which requires manufacturers to produce an increasing number of pure ZEVs (meaning battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles in the 2018 through 2025 model years. (See California Code of Regulations, Title 13, Sections 1900, 1961, 1961.1, 1961.2, 1961.3, 1965, 1968.2, 1968.5, 1976, 1978, 2037, 2038, 2062, 2112, 2139, 2140, 2145, 2147, 2235, and 2317 et seq.)

It is expected that the Pavley standards will reduce GHG emissions from California passenger vehicles by about 34 percent below 2016 levels by 2025, all while improving fuel efficiency and reducing motorists' costs.

Cap and Trade Program

In 2011, CARB adopted the final Cap-and-Trade Program for California (See California Code of Regulations, Title 17, Sections 95801-96022.) The California cap-and-trade program creates a market-based system with an overall emissions limit for affected sectors. The program is intended to regulate more than 85 percent of California's emissions and staggers compliance requirements according to the following schedule: (1) electricity generation and large industrial sources (2012); (2) fuel combustion and transportation (2015).

According to 2012 CARB guidance, "[t]he Cap-and-Trade Program will reduce GHG emissions from major sources (covered entities) by setting a firm cap on statewide GHG emissions while employing market mechanisms to cost-effectively achieve the emission-reduction goals. The statewide cap for GHG emissions from major sources, which is measured in metric tons of carbon dioxide equivalent (MTCO2e), will commence in 2013 and decline over time, achieving GHG emission reductions throughout the program's duration. Each covered entity will be required to surrender one permit to emit (the majority of which will be allowances, entities are also allowed to use a limited number of CARB offset credits) for each ton of GHG emissions they emit. Some covered entities will be allocated some allowances and will be able to buy additional allowances at auction, purchase allowances from others, or purchase offset credits."

The guidance goes on to say that "[s]tarting in 2012, major GHG-emitting sources, such as electricity generation (including imports), and large stationary sources (e.g., refineries, cement production facilities, oil and gas production facilities, glass manufacturing facilities, and food processing plants) that emit more than 25,000 $MTCO_2e$ per year will have to comply with the Cap-and-Trade Program. The program expands in 2015 to include fuel distributors (natural gas and propane fuel providers and transportation fuel providers) to address emissions from transportation fuels, and from combustion of other fossil fuels not directly covered at large sources in the program's initial phase." In early April 2017, the Third District Court of Appeal upheld the lawfulness of the Cap-and-Trade program as a "fee" rather than a "tax." (See *California Chamber of Commerce et al. v. State Air Resources Board et al.* (2017) 10 Cal.App.5th 604.)

AB 398 (Stats. 2017, ch. 135) extended the life of the existing Cap and Trade Program through December 2030.

Statute Intended to Facilitate Land Use Planning Consistent with Statewide Climate Objectives

CALIFORNIA SENATE BILL 375 (SUSTAINABLE COMMUNITIES STRATEGY)

This 2008 legislation built on AB 32 by setting forth a mechanism for coordinating land use and transportation on a regional level for the purpose of reducing GHGs. The focus is to reduce miles traveled by passenger vehicles and light trucks. CARB is required to set GHG reduction targets for each metropolitan region for 2020 and 2035. Each of California's metropolitan planning organizations then prepares a sustainable communities strategy that demonstrates how the region will meet its GHG reduction target through integrated land use, housing, and transportation planning. Once adopted by the metropolitan planning organizations, the sustainable communities

strategy is to be incorporated into that region's federally enforceable regional transportation plan. If a metropolitan planning organization is unable to meet the targets through the sustainable communities strategy, then an alternative planning strategy must be developed which demonstrates how targets could be achieved, even if meeting the targets is deemed to be infeasible.

Climate Change Scoping Plans

AB 32 SCOPING PLAN

In 2008, CARB adopted the Climate Change Scoping Plan, which contains the main strategies California will implement to achieve reduction of approximately 118 million metric tons (MMT) CO_2e, or approximately 22 percent from the State's projected 2020 emission level of 545 MMT of CO_2e under a business-as-usual scenario This is a reduction of 47 MMT CO_2e, or almost 10 percent, from 2008 emissions. CARB's original 2020 projection was 596 MMT CO_2e, but this revised 2020 projection takes into account the economic downturn that occurred in 2008. The Scoping Plan also includes CARB recommended GHG reductions for each emissions sector of the State GHG inventory. CARB estimates the largest reductions in GHG emissions would be by implementing the following measures and standards:

- improved emissions standards for light-duty vehicles (26.1 MMT CO_2e);
- the Low Carbon Fuel Standard (15.0 MMT CO_2e);
- energy efficiency measures in buildings and appliances (11.9 MMT CO_2e); and
- renewable portfolio and electricity standards for electricity production (23.4 MMT CO_2e).

In 2011, CARB adopted a Cap-and-Trade regulation. The Cap-and-Trade program covers major sources of GHG emissions in the State such as refineries, power plants, industrial facilities, and transportation fuels. The Cap-and-Trade program includes an enforceable emissions cap that will decline over time. The State distributes allowances, which are tradable permits, equal to the emissions allowed under the cap. Sources under the cap are required to surrender allowances and offsets equal to their emissions at the end of each compliance period. Enforceable compliance obligations started in 2013. The program applies to facilities that comprise 85 percent of the State's GHG emissions.

With regard to land use planning, the Scoping Plan expects that reductions of approximately 3.0 MMT CO_2e will be achieved through implementation of Senate Bill (SB) 375, which is discussed further below.

2014 SCOPING PLAN UPDATE

CARB revised and reapproved the Scoping Plan and prepared the First Update to the 2008 Scoping Plan in 2014 (2014 Scoping Plan). The 2014 Scoping Plan contains the main strategies California will implement to achieve a reduction of 80 MMT of CO_2e emissions, or approximately 16 percent, from the State's projected 2020 emission level of 507 MMT of CO_2e under the business-as-usual scenario defined in the 2014 Scoping Plan. The 2014 Scoping Plan also includes a breakdown of the amount of GHG reductions CARB recommends for each emissions sector of the State's GHG inventory. Several strategies to reduce GHG emissions are included: the Low Carbon Fuel Standard, the Pavley

Rule, the ACC program, the Renewable Portfolio Standard, and the Sustainable Communities Strategy.

2017 SB 32 SCOPING PLAN

With the passage of SB 32, the Legislature also passed companion legislation AB 197, which provides additional direction for developing the scoping plan. In response, CARB adopted an updated Scoping Plan in December 2017. The document reflects the 2030 target of reducing statewide GHG emissions by 40 percent below 1990 levels codified by SB 32. The GHG reduction strategies in the plan that CARB will implement to meet the target include:

- SB 350 - achieve 50 percent Renewables Portfolio Standard (RPS) by 2030 and doubling of energy efficiency savings by 2030;
- Low Carbon Fuel Standard - increased stringency (reducing carbon intensity 18 percent by 2030, up from 10 percent in 2020);
- Mobile Source Strategy (Cleaner Technology and Fuels Scenario) - maintaining existing GHG standards for light- and heavy-duty vehicles, put 4.2 million zero-emission vehicles on the roads, and increase zero-emission buses, delivery and other trucks;
- Sustainable Freight Action Plan - improve freight system efficiency, maximize use of near-zero emission vehicles and equipment powered by renewable energy, and deploy over 100,000 zero-emission trucks and equipment by 2030;
- Short-Lived Climate Pollutant Reduction Strategy - reduce emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030 and reduce emissions of black carbon 50 percent below 2013 levels by 2030;
- SB 375 Sustainable Communities Strategies - increased stringency of 2035 targets;
- Post-2020 Cap-and-Trade Program - declining caps, continued linkage with Québec, and linkage to Ontario, Canada;
- 20 percent reduction in GHG emissions from the refinery sector; and
- By 2018, develop an Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

2022 SB 32 SCOPING PLAN

On December 15, 2022, CARB approved the *Final 2022 Scoping Plan for Achieving Carbon Neutrality*, which outlines the state's plan to reach carbon neutrality by 2045 or earlier, while also assessing the progress the state is making toward reducing GHG emissions by at least 40% below 1990 levels by 2030, as is required by SB 32 and laid out in the Second Update. The carbon neutrality goal requires CARB to expand proposed actions from only the reduction of anthropogenic sources of GHG emissions to also include those that capture and store carbon (e.g., through natural and working lands, or mechanical technologies). The carbon reduction programs build on and accelerate those currently in place, including moving to zero-emission transportation; phasing out use of fossil gas use for heating homes and buildings; reducing chemical and refrigerants with high GWP; providing communities with sustainable options for walking, biking, and public transit; displacement of fossil-fuel fired electrical generation through use of renewable

energy alternatives (e.g., solar arrays and wind turbines); and scaling up new options such as green hydrogen[1] (CARB 2022b).

The *2022 Scoping Plan* also emphasizes that there is no realistic path to carbon neutrality without carbon removal and sequestration, and to achieve the state's carbon neutrality goal, carbon reduction programs must be supplemented by strategies to remove and sequester carbon. Strategies for carbon removal and sequestration include carbon capture and storage (CCS) from anthropogenic point sources, where CO_2 is captured as it leaves a facility's smokestack and is injected into geologic formations or used in industrial materials (e.g., concrete); and carbon dioxide removal (CDR) from ambient air, through mechanical (e.g., direct air capture with sequestration [DACS]) or nature-based (e.g., management of natural and working lands) applications.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32, SB 32, and Executive Orders S-3-05 and B-30-15, by which Governors Schwarzenegger and Brown identified long-term GHG reduction goals for the State of California (80 percent below 1990 levels by 2050 and "carbon neutrality as soon as possible, and no later than 2045, and maintain and achieve negative emissions thereafter"). The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions.

Building Code Requirements Intended to Reduce GHG Emissions

CALIFORNIA ENERGY CODE

The California Energy Code (California Code of Regulations, Title 24, Part 6), which is incorporated into the Building Energy Efficiency Standards, was first established in 1978 in response to a legislative mandate to reduce California's energy consumption. Although these standards were not originally intended to reduce GHG emissions, increased energy efficiency results in decreased GHG emissions because energy efficient buildings require less electricity and thus less consumption of fossil fuels, which emit GHGs. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The current Building Energy Efficiency Standards, commonly referred to as the "Title 24" standards, include changes from the previous standards that were adopted, to do the following:

- Provide California with an adequate, reasonably priced, and environmentally sound supply of energy.
- Respond to Assembly Bill 32, the Global Warming Solutions Act of 2006, which mandates that California must reduce its GHG emissions to 1990 levels by 2020.
- Pursue California energy policy that energy efficiency is the resource of first choice for meeting California's energy needs.

[1]Green hydrogen refers to hydrogen that is generated by renewable energy or from low-carbon power, and has significantly lower associated carbon emissions than grey hydrogen, which is produced using natural gas and makes up the majority of hydrogen production. For the purposes of the *2022 Scoping Plan*, the term "green hydrogen" is not limited to only electrolytic hydrogen produced from renewables.

- Act on the California Energy Commission's Integrated Energy Policy Report, which finds that standards are the most cost effective means to achieve energy efficiency, states an expectation that the Building Energy Efficiency Standards will continue to be upgraded over time to reduce electricity and peak demand, and recognizes the role of the Building Energy Efficiency Standards in reducing energy related to meeting California's water needs and in reducing GHG emissions.
- Meet the West Coast Governors' Global Warming Initiative commitment to include aggressive energy efficiency measures into updates of State building codes.
- Meet Executive Order S-20-04, the Green Building Initiative, to improve the energy efficiency of non-residential buildings through aggressive standards.

The most recent Title 24 standards are the 2022 Title 24 standards. Buildings permitted on or after January 1, 2023, must comply with the 2022 Standards. The California Energy Commission updates the standards every three years. The CEC estimates that the 2022 Title 24 standards will reduce 10 million metric tons of GHG over 30 years. When compared to the 2019 Title 24 standards, the 2022 update focuses on: encouraging electric heat pump technology and use; establishing electric-ready requirements when natural gas is installed; expanding solar photovoltaic (PV) system and battery storage standards; and strengthening ventilation standards to improve indoor air quality.

CALIFORNIA GREEN BUILDING STANDARDS CODE

The purpose of the California Green Building Standards Code (California Code of Regulations Title 24, Part 11) is to improve public health and safety and to promote the general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories: 1) planning and design; 2) energy efficiency; 3) water efficiency and conservation; 4) material conservation and resource efficiency; and 5) environmental quality. The original California Green Building Standards, which became effective on January 1, 2011, instituted mandatory minimum environmental performance standards for all ground-up new construction of commercial, low-rise residential uses, and State-owned buildings, as well as schools and hospitals. The mandatory standards require the following:

- 20 percent mandatory reduction in indoor water use relative to baseline levels;
- 50 percent construction/demolition waste must be diverted from landfills;
- Mandatory inspections of energy systems to ensure optimal working efficiency; and
- Low-pollutant emitting exterior and interior finish materials such as paints, carpets, vinyl flooring, and particle boards.

The voluntary standards require the following:

- **Tier I:** 15 percent improvement in energy requirements, stricter water conservation requirements for specific fixtures, 65 percent reduction in construction waste, 10 percent recycled content, 20 percent permeable paving, 20 percent cement reduction, and cool/solar reflective roof.

- **Tier II:** 30 percent improvement in energy requirements, stricter water conservation requirements for specific fixtures, 75 percent reduction in construction waste, 15 percent recycled content, 30 percent permeable paving, 30 percent cement reduction, and cool/solar reflective roof.

LOCAL

City of Manteca General Plan

The City of Manteca General Plan includes several policies that are relevant to air quality. It is noted that the currently adopted General Plan is the 2023 General Plan; however, the City is currently undergoing an Update to the General Plan. Both the 2023 General Plan policies and the proposed General Plan Update policies applicable to the Project are identified below:

2023 GENERAL PLAN (EXISTING)

Policies: Air Quality- Regional Coordination

- AQ-P-1: Cooperate with other agencies to develop a consistent and coordinated approach to reduction of air pollution and management of hazardous air pollutants.

Implementation: Air Quality- Regional Coordination

- AQ-I-1. Work with the San Joaquin Valley Air Pollution Control District (APCD) to implement the Air Quality Management Plan (AQMP).
  - Cooperate with the APCD to develop consistent and accurate procedures for evaluating project-specific and cumulative air quality impacts.
  - Cooperate with the APCD and the California Air Resources Board in their efforts to develop a local airshed model.
  - Cooperate with the APCD in their efforts to develop a cost/benefit analysis of possible control strategies (mitigation measures to minimize short and long-term stationary and area source emissions as part of the development review process, and monitoring measures to ensure that mitigation measures are implemented.
- AQ-I-2. In accordance with CEQA, submit development proposals to the APCD for review and comment prior to decision.
- AQ-I-3. Cooperate with the San Joaquin County Environmental Health Department in identifying hazardous material users and in developing a hazardous materials management plan.

Policies: Air Quality- Land Use

- AQ-P-2: Develop a land use plan that will help to reduce the need for trips and will facilitate the common use of public transportation, walking, bicycles, and alternative fuel vehicles.
- AQ-P-3: Segregate and provide buffers between land uses that typically generate hazardous or obnoxious fumes and residential or other sensitive land uses.

Implementation: Air Quality- Land Use

- AQ-I-4. Encourage mixed-use development that is conveniently accessible by pedestrians and public transit.
- AQ-I-5. Locate employment, school, and daily shopping destinations near residential areas.
- AQ-I-6. Locate higher intensity development such as multi-family housing, institutional uses, services, employment centers and retail along existing and proposed transit corridors.
- AQ-I-7. Locate public facilities in areas easily served by current and planned public transportation.
- AQ-I-8. Prior to entitlement of a project that may be an air pollution point source, such as a manufacturing and extracting facility, the developer shall provide documentation that the use is located and appropriately separated from residential areas and sensitive receptors (e.g., homes, schools, and hospitals).

Policies: Air Quality- Transportation

- AQ-P-4: Develop and maintain street systems that provide for efficient traffic flow and thereby minimize air pollution from automobile emissions.
- AQ-P-5: Develop and maintain circulation systems that provide alternatives to the automobile for transportation, including bicycles routes, pedestrian paths, bus transit, and carpooling.
- AQ-P-6: Coordinate public transportation networks, including trains, local bus service, regional bus service and rideshare facilities to provide efficient public transit service.

Implementation: Air Quality- Transportation

- AQ-I-9. Maintain acceptable traffic levels of service (LOS) as specified in the Circulation Element.
- AQ-I-10. In new subdivisions, require the internal street system to include the installation of dedicated pedestrian/bicycle pathways connecting to adjacent residential and commercial areas as well as schools, parks and recreational areas.
- AQ-I-11. Provide adequate pedestrian and bikeway facilities for present and future transportation needs throughout the City.

Policies: Air Quality- Dust and Other Airborne Particulate Materials

- AQ-P-7: New construction will be managed to minimize fugitive dust and construction vehicle emissions.
- AQ-P-8: Woodburning devices shall meet current standards for controlling particulate air pollution.
- AQ-P-9: Burning of any combustible material within the City will be controlled to minimize particulate air pollution.

Implementation: Air Quality- Dust and Other Airborne Particulate Materials

- AQ-I-12. Construction activity plans shall include and/or provide for a dust management plan to prevent fugitive dust from leaving the property boundaries and causing a public nuisance or a violation of an ambient air standard.

  - Project development applicants shall be responsible for ensuring that all adequate dust control measures are implemented in a timely manner during all phases of project development and construction.
- AQ-I-13. All residences built in a new subdivision or housing development shall be equipped with conventional heating devices with sufficient capacity to heat all areas of the building without reliance on woodburning heating devices.
- AQ-I-14. All woodburning-heating devices installed shall meet EPA standards applicable at the time of project approval.

Policies: Air Quality- Reduce Emissions From Energy Generating Facilities

- AQ-P-10: Encourage energy efficient building designs.

Implementation: Air Quality- Reduce Emissions From Energy Generating Facilities

- AQ-I-15. Design review criteria shall include the following considerations, at a minimum:
  - The developer of a sensitive air pollution receptor shall submit documentation that the project design includes appropriate buffering (e.g., setbacks, landscaping) to separate the use from highways, arterial streets, hazardous material locations and other sources of air pollution or odor.
  - Promote the use of new and replacement fuel storage tanks at refueling stations that are clean fuel compatible, if technically and economically feasible.
  - The use of energy efficient lighting (including controls) and process systems beyond Title 24 requirements shall be encouraged where practicable (e.g., water heating, furnaces, boiler units, etc.)
  - The use of energy efficient automated controls for air conditioning beyond Title 24 requirements shall be encouraged where practicable.
  - Promote solar access through building siting to maximize natural heating and cooling, and landscaping to aid passive cooling and to protect from winds.

Policies: Air Quality – Greenhouse Gas Emissions

- AQ-P-11: Prepare and maintain a Climate Action Plan and community greenhouse gas emission inventory for sectors with the potential for control or influence by the City that demonstrates consistency with State of California targets.
- AQ-P-12: Development projects shall incorporate the applicable strategies of the City of Manteca Climate Action Plan as needed to demonstrate consistency with CAP reduction targets and AB 32.

Implementation: Air Quality – Greenhouse Gases

- AQ-I-16. Track and monitor aspects of development related to CAP strategies on an ongoing basis to measure progress in achieving CAP reduction targets.
- AQ-I-17. Track implementation of municipal and community projects and programs related to energy efficiency, transit service improvements, transportation facilities such as bicycle paths and lanes, pedestrian infrastructure, and other projects that reduce greenhouse gas emissions throughout the community.

- AQ-I-18. Update CAP emission inventories, targets, and strategies to reflect new State of California greenhouse gas reduction targets when adopted for later years and to reflect the benefits of any new State and federal regulatory actions that reduce greenhouse gas emissions to demonstrate continued consistency with State targets.

GENERAL PLAN UPDATE (PROPOSED)

Policies: Land Use Element

- LU-3.9: Locate residences away from areas of excessive noise, smoke, dust, odor, and lighting, and ensure that adequate provisions, including buffers or transitional uses, such as less intensive renewable energy production, light industrial, office, or commercial uses, separate the proposed residential uses from more intensive uses, including industrial, agricultural, or agricultural industrial uses and designated truck routes, to ensure the health and well-being of existing and future residents.

- LU-6.9: Require mixed-use development to provide strong connections with the surrounding development and neighborhoods through the provision of pedestrian and bicycle facilities and, where feasible, site consolidation.

- LU-6.10: Encourage the reuse of existing buildings within Downtown and in other developed locations designated for mixed-use development by utilizing the California Existing Building Code which provides flexibility in the retrofitting of buildings.

- LU-6.11: Promote the revitalization of underutilized, deteriorated areas and buildings within Downtown and in other developed locations designated for mixed-use development through development incentives, public/private partnerships, and public investments.

- LU-9.1: Require future planning decisions, development, and infrastructure and public projects to consider the effects of planning decisions on the overall health and well-being of the community and its residents, with specific consideration provided regarding addressing impacts to disadvantaged populations and communities and ensuring disadvantaged communities have equitable access to services and amenities.

- LU-9.2: As part of land use decisions, ensure that environmental justice issues related to potential adverse health impacts associated with land use decisions, including methods to reduce exposure to hazardous materials, industrial activity, vehicle exhaust, other sources of pollution, and excessive noise on residents regardless of age, culture, gender, race, socioeconomic status, or geographic location, are considered and addressed.

Implementation: Land Use Element

- LU-1b: Regularly review and revise, as necessary, the Zoning Code to accomplish the following purposes:

    - Ensure consistency with the General Plan in terms of zoning districts and development standards;

    - Provide for a Downtown zone that permits the vibrant mixing of residential, commercial, office, business-professional, and institutional uses within the Central Business District;

  - Ensure adequate buffers and transitions are required between intensive uses, such as industrial and agricultural industrial, and sensitive receptors, including residential uses and schools; and
  - Provide for an Agricultural Industrial zone that accommodates the processing of crops and livestock.
  - Ensure that land use requirements meet actual demand and needs over time as technology, social expectations, and business practices change.

- LU-6a: Consider implementing incentives to support developers who construct vertical mixed-use projects and/or who build housing above non-residential ground-floor uses within Downtown.
- LU-6d: Promote the intensified use and reuse of existing suites above ground floors.
- LU-9a: Review all development proposals, planning projects, and infrastructure projects to ensure that potential adverse impacts to disadvantaged communities, such as exposure to pollutants, including toxic air contaminants, and unacceptable levels of noise and vibration are reduced to the extent feasible and that measures to improve quality of life, such as connections to bicycle and pedestrian paths, community services, schools, and recreation facilities, access to healthy foods, and improvement of air quality are included in the project. The review shall address both the construction and operation phases of the project.
- LU-9c: Encourage and support local transit service providers to increase and expand services for people who are transit-dependent, including seniors, persons with mobility disabilities, and persons without regular access to automobiles by improving connections to regional medical facilities, senior centers, and other support systems that serve residents and businesses.

Policies: Circulation Element

- C-2.7: Provide access for bicycles and pedestrians at the ends of cul-de-sacs, where right-of-way is available, to provide convenient access within and between neighborhoods and to encourage walking and bicycling to neighborhood destinations.
- C-2.8: Signals, roundabouts, traffic circles and other traffic management techniques shall be applied appropriately at residential and collector street intersections with collector and arterial streets in order to allow bicyclists and pedestrians to travel conveniently and safely from one neighborhood to another.
- C-2.15: Ensure that development and infrastructure projects are designed in a way that provides pedestrian and bicycle connectivity to adjacent neighborhoods and areas (such as ensuring that sound walls, berms, and similar physical barriers are considered and gaps or other measures are provided to ensure connectivity).
- C-4.1: Through regular updates to the City's Active Transportation Plan, establish a safe and convenient network of identified bicycle and pedestrian routes connecting residential areas with schools, recreation, shopping, and employment areas within the city, generally as shown in Figure CI-2). The City shall also strive to develop connections with existing and planned regional routes shown in the San Joaquin County Bicycle Master Plan.

- C-4.2: Improve safety conditions, efficiency, and comfort for bicyclists and pedestrians by providing shade trees and controlling traffic speeds by implementing narrow lanes or other traffic calming measures in accordance with the City Neighborhood Traffic Calming Program on appropriate streets, in particular residential and downtown areas.

- C-4.3: Provide a sidewalk and bicycle route system that serves all pedestrian and bicycle users and meets the latest guidelines related to the Americans with Disabilities Act (ADA).

- C-4.4: Provide bicycle parking facilities at commercial, business/professional and light industrial uses in accordance with Part 11 of the California Building Standards Code.

- C-4.5: Expand the existing network of off-street bicycle facilities as shown in the City's Active Transportation Plan to accommodate cyclists who prefer to travel on dedicated trails. Further, the City shall strive to develop: 1) a "city-loop" Class I bike path for use by both bicyclists and pedestrians that links Austin Road, Atherton Drive, Airport Way, and a route along or near Lathrop Road to the Tidewater bike path and its existing and planned extensions, and 2) an off-street bicycle trail extension between the Tidewater Bike Trail near the intersection of Moffat Boulevard and Industrial Park Drive to the proposed regional route between Manteca and Ripon.

- C.4-6: Provide on-street Class II bike lanes, Class IV protected bike lanes, or off-street Class I bike paths along major collector and arterial streets whenever feasible.

- C.4.7: Facilitate bicycle travel through residential streets through signage necessary to communicate the presence of Class III bicycle lanes on residential streets that have sufficiently low volumes as to not require bike lanes or have narrower street cross sections that assist in calming traffic.

- C.4.8: Provide sidewalks and/or walkways connecting to the residential neighborhoods, primary public destinations, major public parking areas, transit stops, and intersections with the bikeway system.

- C.4.9: Provide sidewalks along both sides of all new streets in the City.

- C-5.1: Encourage and plan for the expansion of regional bus service in the Manteca area.

- C-5.2: Promote increased commuter and regional passenger rail service that will benefit the businesses and residents of Manteca. Examples include Amtrak, the Altamont Commuter Express (ACE), and high-speed rail.

- C-5.3: Identify and implement means of enhancing the opportunities for residents to commute from residential neighborhoods to the ACE station or other transit facilities that may develop in the City.

- C-5.4: Include primary locations where the transit systems will connect to the major bikeways and pedestrian ways and primary public parking areas in the Active Transportation Plan (see C-4a).

- C-5.5: Encourage programs that provide ridesharing and vanpool opportunities and other alternative modes of transportation for Manteca residents.

- C-5.6: Promote the development of park-and-ride facilities near I-5, SR 120, SR 99, and transit stations.

- C-5.7: Maintain a working relationship between the City administration and the local management of the Union Pacific Railroad regarding expansion of freight and passenger rail service and economic development of the region.

- C-5.8: Design future roadways to accommodate transit facilities, as appropriate. These design elements should include installation of transit stops adjacent to intersections and provision of bus turnouts and sheltered stops, where feasible.

- C-5.9: Encourage land uses and site developments that promote public transit along fixed route public transportation corridors, with priority given to those projects that will bring the greatest increase in transit ridership.

- C-5.10: Ensure that development projects provide adequate facilities to accommodate school buses, including loading and turn-out locations in multifamily and other projects that include medium and high density residential uses, and that the school districts are provided an opportunity to address specific needs associated with school busing.

- C-5.11: As new areas and neighborhoods of the City are developed, fund transit expansion (including capital, operations, and maintenance) to provide service levels consistent with existing development.

- C-7.1: Encourage employers to provide alternative mode subsidies, bicycle facilities, alternative work schedules, ridesharing, telecommuting, and work-at-home programs employee education and preferential parking for carpools/vanpools.

- C-7.2: Require development projects that accommodate or employee 50 or more full-time equivalent employees to establish a transportation demand management (TDM) program.

- C-7.3: Partner with SJCOG on the Dibs program, which is the regional smart travel program, including rideshare, transit, walking, and biking, operated by SJCOG.

- C-7.4: Require proposed development projects that could have a potentially significant VMT impact to consider reasonable and feasible project modifications and other measures during the project design and environmental review stage of project development that would reduce VMT effects in a manner consistent with state guidance on VMT reduction.

- C-7.5: Evaluate the feasibility of a local or regional VMT impact fee program, bank, or exchange. Such an offset program, if determined feasible, would be administered by the City or a City-approved agency, and would offer demonstrated VMT reduction strategies through transportation demand management programs, impact fee programs, mitigation banks or exchange programs, in-lieu fee programs, or other land use project conditions that reduce VMT in a manner consistent with state guidance on VMT reduction. If, through on-site changes, a subject project cannot eliminate VMT impacts, the project could contribute on a pro-rata basis to a local or regional VMT reduction bank or exchange, as necessary, to reduce net VMT impacts.

- C-7.6: Expand alternatives to driving by increasing opportunities to walk, bike, and use

transit.

Implementation: Circulation Element

- C-1c: Develop a pedestrian, bicycle, and transit improvement plan for the Downtown area to facilitate implementation of level of service policy C-1.4. This plan will develop a list of multi-modal improvements in the Downtown area to increase the viability and encourage the use of non-auto modes.

- C-2b: When planning roadway facilities, incorporate the concept of complete streets. Complete streets include design elements for all modes that use streets, including autos, transit, pedestrians, and bicycles. Complete streets shall be developed in a context-sensitive manner. For example, it may be more appropriate to provide a Class I bike path instead of bike lanes along a major arterial. Pedestrian districts like Downtown Manteca or areas near school entrances should have an enhanced streetscape (e.g., narrower travel lanes, landscape buffers with street trees, etc.) to better accommodate and encourage pedestrian travel.

- C-2f: Ensure that bicycle and pedestrian access is provided through walls and berms to minimize travel distances and increase the viability walking and bicycling.

- C-2i: Pursue funding to improve and address areas of traffic, bicycle, and pedestrian hazards and conflicts with vehicular traffic movements.

- C-4a: Periodically update the Active Transportation Plan to include all areas envisioned for development by this General Plan and to address pedestrian and bicycle facilities needed to provide a complete circulation system that adequately meets the needs of pedestrians and bicyclists.

- C.4b: Utilize the standards set forth in the latest editions of the California MUTCD and American Association of State Highway and Transportation Officials (AASHTO) Green Book for improvement and re-striping of appropriate major collector and arterial streets to accommodate Class II bike lanes or Class IV protected bikeways in both directions, where sufficient roadway width is available. This may include narrowing of travel lanes.

- C.4d: Add bicycle facilities whenever possible in conjunction with road rehabilitation, reconstruction, or re-striping projects.

- C-4e: Update the City's standard plans to accommodate pedestrians and bicyclists, including landscape-separated sidewalks where appropriate, and to include bike lanes on collector and arterial streets, as defined by the Active Transportation Plan.

- C-4f: Encourage and facilitate resident and visitor use of the bike trail system by preparing a map of the pedestrian and bike paths and implementing wayfinding signage.

- C-4g: Update the standard plans to specify a set of roadways with narrower lanes (less than 12 feet) and pedestrian bulb-outs to calm traffic and increase pedestrian and bicycle comfort. These narrow lane standards shall be applied to appropriate streets (e.g., they shall not be applied to outside lanes on major truck routes) and new development.

- C-5a: Periodically review transit needs in the city and adjust bus routes to accommodate

changing land use and transit demand patterns. The City shall also periodically coordinate with the San Joaquin Regional Transit District to assess the demand for regional transit services.

- C-5b: Explore a transit connections study that would identify improvements to connections and access to the existing ACE station, the Manteca Transit Center, and future planned transit stations.

- C-5c: Update the City's standard plans to include the option for bus turnouts at intersections of major streets.

- C-5d: Review and consider alternatives to conventional bus systems, such as smaller shuttle buses (i.e. micro-transit), on-demand transit services, or transportation networking company services that connect neighborhood centers to local activity centers with greater cost efficiency.

- C-5e: Work with the school districts to identify and implement opportunities for joint-use public transit that would provide both student transportation and local transit service.

- C-5f: Through the development review process, ensure that projects provide increased land use densities and mixed uses, consistent with the Land Use Element to enhance the feasibility of transit and promote alternative transportation modes.

- C-5g: Along fixed route corridors, require that new development to be compatible with and further the achievement of the Circulation Element. Requirements for compatibility may include but are not limited to:

    - Orienting pedestrian access to transit centers and existing and planned transit routes.

    - Orienting buildings, walkways, and other features to provide pedestrian access from the street and locating parking to the side or behind the development, rather than separating the development from the street and pedestrian with parking.

    - Providing clearly delineated routes through parking lots to safely accommodate pedestrian and bicycle circulation.

- C-5h: Review and update the City's funding programs to provide for adequate transit services, including funding for capital, operations, and maintenance, commensurate with growth of the City.

- C-7a: Provide information about transit services, ridesharing, vanpools, and other transportation alternatives to single occupancy vehicles at City Hall, the library, and on the City website.

- C-7b: Develop TDM program requirements with consideration of addressing CEQA vehicle miles traveled impact analysis requirements (i.e., SB 743) in accordance with implementation measure C-1c. TDM programs shall include measures to reduce total vehicle miles traveled and peak hour vehicle trips. A simplified version of the Air District's Rule 9410 could be used to implement this measure.

- C-7c: Coordinate with the San Joaquin Council of Governments on a Congestion/Mobility Management Program to identify TDM strategies to reduce VMT and mitigate peak-hour congestion impacts. Strategies may include: growth management and activity center strategies, telecommuting, increasing transit service frequency and speed, transit information systems, subsidized and discount transit programs, alternative work hours, carpooling, vanpooling, guaranteed ride home program, parking management, addition of general purpose lanes, channelization, computerized signal systems, intersection or midblock widenings, and Intelligent Transportation Systems.

- C-7d: Proposed development projects shall consider the list of potential measures below. This list is not intended to be exhaustive, and not all measures may be feasible, reasonable, or applicable to all projects. The purpose of this list is to identify options for future development proposals, not to constrain projects to this list, or to require that a project examine or include all measures from this list. Potential measures, with possible ranges of VMT reduction for a project, include:*

    - *Increase density of development (up to 10.75 percent)*
    - *Increase diversity of land uses (up to 12 percent)*
    - *Encourage telecommuting and alternative work schedules (up to 4.5 percent)*
    - *Implement car-sharing programs (up to 5 percent)*
    - *Implement parking management and pricing (up to 6 percent)*
    - *Implement subsidized or discounted transit program (up to 0.7 percent)*
    - *Implement commute trip reduction marketing and launch targeted behavioral interventions (up to 3 percent)*

    **Note: VMT reduction ranges based on Quantifying Greenhouse Gas Mitigation Measures, California Air Pollution Control Officers Association (2010) and new research compiled by Fehr & Peers (2020). Additional engineering analysis is required prior to applying reductions to specific projects. Actual reductions will vary by project and project context.*

- C-7e: Partner with SJCOG, San Joaquin County, and neighboring cities to evaluate a potential regional VMT impact fee program, bank, or exchange.

- C-7f: Implement the Active Transportation Plan and other Bikeway and Pedestrian Systems goals and polices (C-4).

- C-7g: Expand transit service and increase transit frequency and implement Public Transit goals and policies (C-5).

Policies: Community Facilities and Services Element

- CF-11.2: Implement and enforce the provisions of the City's Source Reduction and Recycling Program and update the program as necessary to meet or exceed the State waste diversion requirements.

- CF-11.3: Reduce municipal waste generation by increasing recycling, on-site composting, and mulching, where feasible, at municipal facilities, as well as using resource efficient landscaping techniques in new or renovated medians and parks.

- CF-11.4: Encourage residential, commercial, and industrial recycling and reuse programs and techniques.

- CF-11.5: Coordinate with and support other local agencies and jurisdictions in the region to develop and implement effective waste management strategies and waste-to-energy technologies.

Policies: Resource Conservation Element

- RC-4.1: Prepare for and respond to the expected impacts of climate change.
- RC-4.2: Assess and monitor the effects of climate change and the associated levels of risk in order to adapt to changing climate conditions and be resilient to negative changes and impacts associated with climate change.
- RC-5.1: Ensure that land use and circulation improvements are coordinated to reduce the number and length of vehicle trips.
- RC-5.2: Encourage private development to explore and apply non-traditional energy sources such as co-generation, wind, and solar to reduce dependence on traditional energy sources.
- RC-5.3: Require all new public and privately constructed buildings to meet and comply with construction and design standards that promote energy conservation, including the most current "green" development standards in the California Green Building Standards Code.
- RC-5.4: Support innovative and green building best practices including, but not limited to, LEED certification for all new development, and encourage public and private projects to exceed the most current "green" development standards in the California Green Building Standards Code.
- RC-5.5: Encourage the conservation of public utilities.
- RC-5.6: Encourage the conservation of petroleum products.
- RC-6.1: Coordinate with the San Joaquin Valley Air Pollution Control District (Air District), San Joaquin Council of Governments, and the California Air Resources Board (State Air Board), and other agencies to develop and implement regional and county plans, programs, and mitigation measures that address cross-jurisdictional and regional air quality impacts, including land use, transportation, and climate change impacts, and incorporate the relevant provisions of those plans into City planning and project review procedures. Also cooperate with the Air District, SJCOG, and State Air Board in:
    - Enforcing the provisions of the California and Federal Clean Air Acts, state and regional policies, and established standards for air quality.
    - Identifying baseline air pollutant and greenhouse gas emissions.
    - Encouraging economy clean fuel for city vehicle fleets, when feasible.
    - Developing consistent procedures for evaluating and mitigating project-specific and cumulative air quality impacts of projects.
- RC-6.2: Minimize exposure of the public to toxic or harmful air emissions and odors through requiring an adequate buffer or distance between residential and other sensitive land uses

and land uses that typically generate air pollutants, toxic air contaminants, or obnoxious fumes or odors, including but not limited to industrial, manufacturing, and processing facilities, highways, and rail lines.

- RC-6.3: Ensure that new construction is managed to minimize fugitive dust and construction vehicle emissions.

- RC-6.4: Require appliances and equipment, including wood-burning devices, in development projects to meet current standards for controlling air pollution, including particulate matter and toxic air contaminants.

- RC-6.5: Require and/or cooperate with the Air District to ensure that burning of any combustible material within the City is consistent with Air District regulations to minimize particulate air pollution.

Implementation: Resource Conservation Element

- RC-4a: Continue to assess and monitor performance of greenhouse gas emissions reduction efforts, including progress toward meeting longer-term GHG emissions reduction goals for 2035 and 2050 by reporting on the City's progress annually, updating the Climate Action Plan and GHG inventory regularly to demonstrate consistency with State-adopted GHG reduction targets, including those targets established beyond 2020, and updating the GHG Strategy in the General Plan, as appropriate.

- RC-4b: When updating master plans for infrastructure, including water supply, flood control, and drainage, and critical facilities, review relevant climate change scenarios and ensure that the plans consider the potential effects of climate change and include measures to provide resilience.

- RC-4c: Incorporate the likelihood of climate change impacts into City emergency response planning and training.

- RC-5a: Implement development standards and best practices that promote energy conservation and the reduction in greenhouse gases, including:

    - Require new development to be energy-efficient through passive design concepts (e.g., techniques for heating and cooling, building siting orientation, street and lot layout, landscape placement, and protection of solar access;

    - Require construction standards which promote energy conservation including window placement, building eaves, and roof overhangs;

    - Require all projects to meet minimum State and local energy conservation standards;

    - Require best practices in selecting construction methods, building materials, project appliances and equipment, and project design;

    - Encourage and accommodate projects that incorporate alternative energy;

    - Encourage projects to incorporate enhanced energy conservation measures and other voluntary methods of reducing energy usage and greenhouse gas emissions; and

- Require large energy users to implement an energy conservation plan as part of the project review and approval process, and develop a program to monitor compliance with and effectiveness of that plan.

- RC-5b: Continue to review development projects to ensure that all new public and private development complies with the California Code of Regulations, Title 24 standards as well as the energy efficiency standards established by the General Plan and the Municipal Code.

- RC-5c: Develop a public education program to increase public participation in energy conservation.

- RC-5d: Connect residents and businesses with programs that provide free or low-cost energy efficiency audits and retrofits to existing buildings.

- RC-5e: Update the Municipal Code to incentivize the use of small-scale renewable energy facilities and, where appropriate, to remove impediments to such uses.

- RC-5f: Cooperate with other agencies, jurisdictions, and organizations to expand energy conservation programs.

- RC-5g: Explore alternative energy sources, including co-generation, active solar energy, and wind generation, and identify opportunities for alternative energy to be used in public and private projects.

- RC-5h: Implement transportation measures, as outlined in the Circulation Element, which reduce the need for automobile use and petroleum products.

- RC-6a: Work with the Air District to implement the Air Quality Management Plan (AQMP).

    - Cooperate with the Air District to develop consistent and accurate procedures for evaluating project-specific and cumulative air quality impacts.

    - Cooperate with the Air District and the State Air Board in their efforts to develop a local airshed model.

    - Cooperate with the Air District in its efforts to develop a cost/benefit analysis of possible control strategies (mitigation measures to minimize short and long-term stationary and area source emissions as part of the development review process, and monitoring measures to ensure that mitigation measures are implemented.

- RC-6b: Review development, land use, transportation, and other projects that are subject to CEQA for potentially significant climate change and air quality impacts, including toxic and hazardous emissions and require that projects provide adequate, appropriate, and cost-effective mitigation measures reduce significant and potentially significant impacts. This includes, but is not limited to, the following:

    - *Use of the Air District "Guide for Assessing and Mitigating Air Quality Impacts", as may be amended or replaced from time to time, in identifying thresholds, evaluating potential project and cumulative impacts, and determining appropriate mitigation measures;*

- *Contact the Air District for comment regarding potential impacts and mitigation measures as part of the evaluation of air quality effects of discretionary projects that are subject to CEQA;*
- *Require projects to participate in regional air quality mitigation strategies, including Air District-required regulations, as well as recommended best management practices when applicable and appropriate ;*
- *Promote the use of new and replacement fuel storage tanks at refueling stations that are clean fuel compatible, if technically and economically feasible;*
- *The use of energy efficient lighting (including controls) and process systems beyond Title 24 requirements shall be encouraged where practicable (e.g., water heating, furnaces, boiler units, etc.);*
- *The use of energy efficient automated controls for air conditioning beyond Title 24 requirements shall be encouraged where practicable; and*
- *Promote solar access through building siting to maximize natural heating and cooling, and landscaping to aid passive cooling and to protect from winds;*
- *The developer of a sensitive air pollution receptor shall submit documentation that the project design includes appropriate buffering (e.g., setbacks, landscaping) to separate the use from highways, arterial streets, hazardous material locations and other sources of air pollution or odor;*
- *Identify sources of toxic air emissions and, if appropriate, require preparation of a health risk assessment in accordance with Air District-recommended procedures; and*
- *Circulate the environmental documents for projects with significant air quality impacts to the Air District for review and comment.*

- RC-6c: Review area and stationary source projects that could have a significant air quality impact, either individually or cumulatively, to identify the significance of potential impacts and ensure that adequate air quality mitigation is incorporated into the project, including:

  - *The use of best available and economically feasible control technology for stationary industrial sources;*
  - *All applicable particulate matter control requirements of Air District Regulation VIII;*
  - *The use of new and replacement fuel storage tanks at refueling stations that are clean fuel compatible, if technically and economically feasible;*
  - *Provision of adequate electric or natural gas outlets to encourage use of natural gas or electric barbecues and electric gardening equipment; and*
  - *Use of alternative energy sources.*

- RC-6d: Maintain adequate data to analyze cumulative land use impacts on air quality and climate change. This includes tracking proposed, planned, and approved General Plan amendments, development, and land use decisions so that projects can be evaluated for cumulative air quality impacts, including impacts associated with transportation and land use decisions.

- RC-6e: Prior to entitlement of a project that may be an air pollution point source, such as a manufacturing and extracting facility, the developer shall provide documentation that the use is located and appropriately separated from residential areas and sensitive receptors (e.g., homes, schools, and hospitals).

- RC-6f: Construction activity plans shall include and/or provide for a dust management plan

to prevent fugitive dust from leaving the property boundaries and causing a public nuisance or a violation of an ambient air standard.

Project development applicants shall be responsible for ensuring that all adequate dust control measures are implemented in a timely manner during all phases of Project development and construction.

City of Manteca Climate Action Plan

The City of Manteca adopted its Climate Action Plan (CAP) in October 2013. The purpose of the CAP is to: 1) outline a course of action for the City government and the community of Manteca to reduce per capita greenhouse gas emissions by amounts required to show consistency with AB 32 goals for 2020 and adapt to effects of climate change, and 2) provide clear guidance to City staff regarding when and how to implement key provisions of the CAP, and 3) provide a streamlined mechanism for projects that are consistent with the CAP to demonstrate that they would not contribute significant greenhouse gas impacts.

The GHG Plan is considered a "Qualified Plan," according to CEQA Guidelines Section 15183.5.2. The City's GHG Inventory is evaluated for baselines years 2005 and 2010 and is projected for years 2020 and 2035. The baseline and Business-As-Usual (BAU) emissions GHG inventories for the City of Manteca is summarized in Table 2-1. Table 2-2 provides a summary of the City's 2020 target, adjusted-BAU emissions, and the local reductions included within the CAP.

TABLE 2-1: CITY OF MANTECA BASELINE EMISSIONS INVENTORY AND BUSINESS-AS-USUAL (BAU) EMISSIONS INVENTORY PROJECTIONS (MT CO_2E)

EMISSIONS SECTOR	*2005*	*2010*	*2020*	*2035*
Transportation	214,075	210,901	275,507	368,297
Electricity – Residential	44,108	47,343	61,212	83,668
Electricity – Commercial	25,014	31,146	35,646	49,327
Natural Gas – Residential	45,527	50,466	65,249	89,186
Natural Gas – Commercial	9,856	11,818	13,526	18,717
Waste	42,305	30,454	21,586	29,505
Ozone Depleting Substance (ODS) substitutes	19,461	26,741	75,711	103,486
Total	**400,346**	**408,869**	**548,437**	**742,186**

NOTE: TOTALS MAY NOT ADD UP DUE TO ROUNDING.
SOURCE: CITY OF MANTECA CLIMATE ACTION PLAN, 2013

TABLE 2-2: CITY OF MANTECA 2020 TARGET EMISSIONS INVENTORY (MT CO_2E)

INVENTORY	*COMMUNITY EMISSIONS*	*PER CAPITA EMISSIONS (MT CO_2E/PERSON)*
2020 BAU	548,437	6.27
2020 Adjusted	441,707	5.05
2020 Target	429,693	4.91
2020 Local Reductions Required	12,014	0.14
2020 Local Reductions Proposed	12,289	0.14
Target Achieved?	Yes	Yes

NOTE: TOTALS MAY NOT ADD UP DUE TO ROUNDING.
SOURCE: CITY OF MANTECA CLIMATE ACTION PLAN, 2013

2.3 IMPACTS AND MITIGATION MEASURES

GREENHOUSE GAS EMISSIONS THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, climate change-related impacts are considered significant if implementation of the proposed Project would do any of the following:

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.

Based on these standards and significance thresholds and criteria, the Project's effects have been categorized as either "no impact," a "less than significant impact," or a "potentially significant impact." Mitigation measures are recommended for potentially significant impacts. If a potentially significant impact cannot be reduced to a less than significant impact through the application of mitigation, it is categorized as a "significant unavoidable impact."

ANALYSIS APPROACH AND METHODOLOGY

Cumulative impacts are the collective impacts of one or more past, present, and future projects that, when combined, result in adverse changes to the environment. In determining the significance of a project's contribution to anticipated adverse future conditions, a lead agency should generally undertake a two-step analysis. The first question is whether the *combined* effects from *both* the proposed Project *and* other projects would be cumulatively significant. If the agency answers this inquiry in the affirmative, the second question is whether "the project's *incremental* effects are cumulatively considerable" and thus significant in and of themselves. The cumulative global project list for this issue (climate change) comprises anthropogenic (i.e., human-made) GHG emissions sources across the globe. No project alone would reasonably be expected to contribute to a noticeable incremental change to the global climate, but rather effects are shown to be caused by the cumulative emissions from across the globe. However, legislation and executive orders on the subject of climate change in California have established a Statewide context and process for developing an enforceable Statewide cap on GHG emissions. Given the nature of environmental consequences from GHGs and global climate change, CEQA requires that lead agencies consider evaluating the cumulative impacts of GHGs. Small contributions to this cumulative impact (from which significant effects are occurring and are expected to worsen over time) may be potentially considerable and, therefore, significant.

The baseline against which to compare potential impacts of the Project includes the natural and anthropogenic drivers of global climate change, including worldwide GHG emissions from human activities that have increased by about 90 percent since 1970.[2] As a result, the study area for climate change and the analysis of GHG emissions is broad. However, the study area is also limited by CEQA

[2] U.S. EPA, Global Greenhouse Gas Emissions Data, https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data, accessed July 14, 2022.

Guidelines Section 15064.4(b), which directs lead agencies to consider an "indirect physical change" only if that change is a reasonably foreseeable impact, which may be caused by the Project.

CEQA Guidelines Section 15064.4 recommends that lead agencies quantify GHG emissions of projects and consider several other factors that may be used in the determination of significance of GHG emissions from a project, including the extent to which the project may increase or reduce GHG emissions; whether a project exceeds an applicable significance threshold; and the extent to which the project complies with regulations or requirements adopted to implement a plan for the reduction or mitigation of GHG emissions.

CEQA Guidelines Section 15064.4 does not establish a threshold of significance. CEQA Guidelines Section 15064.7 provides lead agencies the discretion to establish significance thresholds for their respective jurisdictions, and in establishing those thresholds, a lead agency may appropriately look to thresholds developed by other public agencies or suggested by other experts, as long as any threshold chosen is supported by substantial evidence. The City of Manteca has not adopted a numerical significance threshold for assessing impacts related to GHG emissions. Similarly, the SJVACPD, the Governor's Office of Planning and Research, CARB, California Air Pollution Control Officers Association (CAPCOA), or any other State or applicable regional agency has yet to adopt a numerical significance threshold for assessing GHG emissions that is applicable to the Project. Therefore, the significance of the Project's potential impacts with regard to GHG emissions and climate change will be assessed solely on its consistency with plans and policies adopted for the purposes of reducing GHG emissions and mitigating the effects of climate change and the Project's ability to incorporate sustainable features and strategies in its design to reduce GHG emissions. The analysis has also quantified the Project's GHG emissions for informational purposes. The methodology for quantifying GHG emissions is the same as the methodology for quantifying criteria pollutants and is discussed in detail in Section 3.3, Air Quality, and in Appendix B, of this Draft EIR.

IMPACTS AND MITIGATION MEASURES

Impact 2-1: Project implementation would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. (Less than Significant)

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, and 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. Implementation of the proposed Project would contribute to increases of GHG emissions that are associated with global climate change. Estimated GHG emissions attributable to future

development would be primarily associated with increases of CO_2 and other GHG pollutants, such as methane (CH_4) and nitrous oxide (N_2O), from mobile sources and utility usage.

The proposed Project's short-term construction-related and long-term operational GHG emissions were estimated using the California Emission Estimator Model (CalEEMod)™. CalEEMod is a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify GHG emissions from land use projects. The model quantifies direct GHG emissions from construction and operation (including vehicle use), as well as indirect GHG emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Emissions are expressed in annual metric tons of CO_2 equivalent units of measure (i.e., MT CO_2e), based on the global warming potential of the individual pollutants.

SHORT-TERM CONSTRUCTION GHG EMISSIONS

Estimated maximum mitigated GHG emissions associated with construction of the proposed Project are summarized in Table 2-3. These emissions include all worker vehicle, vendor vehicle, hauler vehicle, and off-road construction vehicle GHG emissions. For the purposes of this analysis, based on input from the Project Proponents, the proposed Project is assumed to commence construction in 2024 and finish in 2025. It should be noted that this schedule is an approximation and may change over time. A regularized construction schedule was utilized for modelling purposes for the sake of simplicity.

TABLE 2-3: MAXIMUM CONSTRUCTION GHG EMISSIONS (MITIGATED AVERAGE MT CO_2E/YEAR)

YEAR	BIO- CO_2	NON-BIO- CO_2	TOTAL CO_2	CH_4	N_2O	CO_2E
2024	0	346	346	<0.1	<0.1	349

SOURCE: CALEEMOD (V.2022.1)

As presented in the table above, short-term construction emissions of GHGs are estimated at a maximum of approximately 349 MT CO_2e per year.

OPERATIONAL GHG EMISSIONS

The operational GHG emissions estimate for the proposed Project includes on-site area, energy, mobile, waste, and water emissions generated by the Project during its operation. Estimated GHG emissions associated with the proposed Project are summarized in Table 2-4, below. It should be noted that CalEEMod does not account for the Governor Newsom's Zero-Emission by 2035 Executive Order (N-79-20), which requires that all new cars and passenger trucks sold in California be zero-emission vehicles by 2035. Additionally, the CalEEMod modeling conducted does not account for the incorporation of additional Renewables Portfolio Standard attainment beyond CalEEMod defaults, incorporation of AB 341, and incorporation of Title 24 requirements for the EV charging stations. This is anticipated to substantially reduce the operational emissions associated with passenger vehicles (i.e. mobile emissions), energy emissions, and waste emissions, over time, including prior the 2035 final implementation year. Therefore, the operational emissions results are likely an overestimate for mobile, energy, and waste emissions. As shown in the following table, as

conservatively modeled, the annual GHG emissions associated with the proposed Project would be approximately 777 MT CO_2e.

TABLE 2-4: OPERATIONAL GHG EMISSIONS AT BUILDOUT (METRIC TONS/YEAR)

	Bio- CO_2	*Non-Bio- CO_2*	*Total CO_2*	*CH_4*	*N_2O*	*CO_2E*
Area	1.2	1.2	<0.1	<0.1	0	1.2
Energy	0	278	278	<0.1	<0.1	279
Mobile	0	294	294	<0.1	<0.1	300
Waste	46.1	0	46.1	4.6	0	161
Water	6.8	6.4	13.2	0.7	<0.1	35.4
Total	**52.9**	**580**	**633**	**5.4**	**<0.1**	**777**

SOURCE: CALEEMOD (V.2022.1)

Pacific Gas & Electric (PG&E), the electrical service provider for the Project site, will need to continue to annually increase renewable electricity through 2045 in order to meet the carbon-free electricity target set by SB 100. The Project would need to comply with AB 341, which set a target of reducing landfill waste by 75 percent by 2020, and the Title 24 standards, which require incorporation of rooftop PV systems and solar panels, as well as electric vehicle charging capabilities. The potential reductions in GHG emission associated with this requirement were not incorporated in the reductions, as the amount would be confirmed at a later stage; therefore, the operational emissions shown in Table 2-4 are conservative.

PROJECT CONSISTENCY WITH APPLICABLE PLANS

Several plans and policies have been adopted to reduce GHG emissions in the San Joaquin Valley region. The Project's consistency with the State's 2022 Scoping Plan, as well as the Fresno Council of Governments' (Fresno COG's) 2022 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS), and the City of Clovis General Plan are discussed below.

The CARB's 2022 Scoping Plan

The 2022 Scoping Plan strategies that are applicable to the Project include reducing fossil fuel use, energy demand, and vehicle miles traveled (VMT); maximizing recycling and diversion from landfills; and increasing water conservation. The Project would be consistent with these goals through Project design, which includes complying with the latest requirements of the CALGreen Code and Building Energy Efficiency Standards, providing EV parking spaces and charging equipment, and complying with the AB 341 waste diversion goal of 75 percent. In addition, the Project would receive electricity from PG&E, which is required to reduce GHG emissions by increasing procurement from eligible renewable energy by set target years. Moreover, the Project would provide extensive pedestrian connectivity to encourage alternative modes of transportation, and be consistent with the requirements of the latest (2022) version of the Title 24 Energy Code, or better. Therefore, the Project would be consistent with the 2022 Scoping Plan.

SJCOG 2022 RTP/SCS

The SJCOG's 2022 RTP/SCS includes eight policies with corresponding implementation strategies for conserving energy, maximizing mobility and accessibility, increasing safety and security, preserving the transportation system, supporting economic development, promoting interagency cooperation and public participation, maximizing cost effectiveness, and improving quality of life for residents. These strategies include similar measures to the 2022 Scoping Plan, such as supporting energy and water efficiency. The Project's consistency with the applicable 2022 RTP/SCS strategies is discussed in Table 2-5, below. As shown therein, the Project would be consistent with the GHG emissions reduction strategies contained in the SJCOG's 2022 RTP/SCS.

TABLE 2-5: PROJECT CONSISTENCY WITH THE SJCOG'S 2022 RTP/SCS

POLICY	*PROJECT CONSISTENCY*
Enhance the Environment for Existing and Future Generations and Conserve Energy	No Conflict. The Project would utilize electricity provided by Pacific Gas & Electric (PG&E) which is required to meet the year 2030, 2045, and 2050 performance standards. In addition, future development associated with Project implementation would be required to meet the applicable requirements of the 2022 (or more current) Title 24 Building Energy Efficiency Standards.
Maximize Mobility and Accessibility	No Conflict. The Project would support the use of zero-emission and low-emission vehicles, by implementing EV-ready charging spaces, consistent with the requirements of the 2022 Title 24 Building Energy Efficiency Standards.
Increase Safety and Security	No Conflict. The Project would be developed using the latest State and local requirements relating to safety and security. Development of the Project site would include other uses to support and compliment the proposed residential development include public utility infrastructure, public and private roadways, curb/gutters/sidewalks, other pedestrian facilities, private parking, street lighting, and street signage, which would enhance the safety and security of the site and it surroundings, by connecting to existing development.
Preserve the Efficiency of the Existing Transportation System	Not applicable. This is not a transportation improvement project and is therefore not applicable.
Support Economic Vitality	No Conflict. The Project would add commercial activities to the local community, adding tax revenues, thereby supporting economic vitality.
Promote Interagency Coordination and Public Participation for Transportation Decision-Making and Planning Efforts	Not applicable. This is not a transportation improvement project and is therefore not applicable.
Maximize the Cost Effectiveness	No Conflict. The Project would add commercial activities to the local community, in a location that is logical and appropriate form a cost effectiveness perspective.
Improve the Quality of Life for Residents	No Conflict. The Project would add recreational and other in-demand commercial activities the community.

SOURCE: SJCOG 2022 RTP/SCS

Consistency with the City of Manteca Climate Action Plan: The City of Manteca adopted its Climate Action Plan (CAP) in October 2013. The GHG Plan is considered a "Qualified Plan," according to CEQA Guidelines Section 15183.5.2. The City's GHG Inventory is evaluated for baselines years 2005 and

2010 and is projected for years 2020 and 2035. The baseline and Business-As-Usual (BAU) emissions GHG inventories for the City of Manteca is summarized in Table 2-1. Table 2-2 provides a summary of the City's 2020 target, adjusted-BAU emissions, and the local reductions included within the CAP. The proposed Project would not conflict with the City of Manteca Climate Action Plan. For example, the proposed Project would comply with the applicable GHG reduction strategies identified in the CAP, such as CAP Strategy POD-3, which requires the City to ensure that all commercial projects to design parking lots to allow safe and comfortable walking routes between businesses within the development, and CAP Strategy PI-1 requires the City to ensure that all projects comply with the General Plan policies regarding pedestrian infrastructure during the development review process.

Consistency with the SJVAPCD Requirements: The proposed Project would be required to comply with all applicable SJVAPCD (i.e. Air District) Rules and regulations. For example, Regulations and rules that may apply to the proposed Project could include Regulation VIII provides fugitive PM_{10} dust prohibitions; Rule 8021 provides rules for PM_{10} dust prohibition associated with construction, demolition activities, excavation, extraction, and other earthmoving activities; Rule 4601 provides rules to limit VOC emissions for architectural coatings. In sum, the proposed Project would comply with all applicable SJVAPCD Rules and regulations.

CONCLUSION

In summary, the Project, including the off-site improvements, would be consistent with the plans, policies, regulations, and GHG emissions reduction actions/strategies outlined in the 2022 Scoping Plan Update, the SJCOG's 2022 RTP/SCS, and the City of Manteca Climate Action Plan. Furthermore, because the Project is consistent and does not conflict with these plans, policies, and regulations, the Project's incremental increase in GHG emissions as described above would not result in a significant impact on the environment. Therefore, Project-related impacts related to GHG emissions would be **less than significant** relative to this topic.

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APPENDIX A –AIR QUALITY & GREENHOUSES GASES MODELING

Manteca - Three Strikes Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year, Unmitigated

2.4. Operations Emissions Compared Against Thresholds

2.5. Operations Emissions by Sector, Unmitigated

3. Construction Emissions Details

3.1. Site Preparation (2024) - Unmitigated

3.3. Grading (2024) - Unmitigated

3.5. Building Construction (2024) - Unmitigated

3.7. Building Construction (2025) - Unmitigated

3.9. Paving (2025) - Unmitigated

3.11. Architectural Coating (2025) - Unmitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Manteca - Three Strikes
Construction Start Date	1/1/2024
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	9.00
Location	37.782502363023184, -121.24541379990916
County	San Joaquin
City	Manteca
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2162
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.16

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Health Club	82.0	1000sqft	1.88	82,000	0.00	0.00	—	—
Quality Restaurant	54.1	1000sqft	1.24	0.00	0.00	0.00	—	—
Parking Lot	5.43	Acre	5.43	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.63	1.38	11.8	15.2	0.03	0.50	0.39	0.90	0.46	0.10	0.56	—	3,110	3,110	0.12	0.09	2.35	3,143
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.42	22.5	36.0	33.7	0.05	1.60	19.8	21.4	1.47	10.1	11.6	—	5,445	5,445	0.22	0.09	0.06	5,465
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.18	1.39	8.79	10.5	0.02	0.38	1.16	1.54	0.35	0.52	0.87	—	2,088	2,088	0.08	0.05	0.60	2,107
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.22	0.25	1.60	1.92	< 0.005	0.07	0.21	0.28	0.06	0.10	0.16	—	346	346	0.01	0.01	0.10	349

2.2. Construction Emissions by Year, Unmitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.63	1.38	11.8	15.2	0.03	0.50	0.39	0.90	0.46	0.10	0.56	—	3,110	3,110	0.12	0.09	2.35	3,143
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	4.42	3.72	36.0	33.7	0.05	1.60	19.8	21.4	1.47	10.1	11.6	—	5,445	5,445	0.22	0.09	0.06	5,465
2025	1.51	22.5	11.1	14.6	0.03	0.44	0.39	0.83	0.40	0.10	0.50	—	3,066	3,066	0.11	0.09	0.06	3,095
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.18	0.99	8.79	10.5	0.02	0.38	1.16	1.54	0.35	0.52	0.87	—	2,088	2,088	0.08	0.05	0.60	2,107
2025	0.15	1.39	1.11	1.52	< 0.005	0.05	0.03	0.08	0.04	0.01	0.05	—	281	281	0.01	0.01	0.07	283
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.22	0.18	1.60	1.92	< 0.005	0.07	0.21	0.28	0.06	0.10	0.16	—	346	346	0.01	0.01	0.10	349
2025	0.03	0.25	0.20	0.28	< 0.005	0.01	0.01	0.01	0.01	< 0.005	0.01	—	46.5	46.5	< 0.005	< 0.005	0.01	46.9

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.11	3.82	1.93	13.1	0.02	0.09	1.49	1.59	0.09	0.38	0.47	319	3,612	3,931	32.3	0.21	7.38	4,807
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.37	3.12	2.05	8.76	0.02	0.09	1.49	1.58	0.08	0.38	0.46	319	3,463	3,782	32.3	0.21	0.57	4,655

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.68	3.41	2.00	10.3	0.02	0.09	1.48	1.57	0.09	0.38	0.46	319	3,502	3,821	32.3	0.21	3.41	4,694
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.31	0.62	0.37	1.89	< 0.005	0.02	0.27	0.29	0.02	0.07	0.08	52.9	580	633	5.35	0.03	0.56	777

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.38	1.29	0.98	8.74	0.02	0.02	1.49	1.51	0.01	0.38	0.39	—	1,880	1,880	0.09	0.09	6.99	1,916
Area	0.63	2.48	0.03	3.57	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	14.7	14.7	< 0.005	< 0.005	—	14.7
Energy	0.10	0.05	0.91	0.77	0.01	0.07	—	0.07	0.07	—	0.07	—	1,679	1,679	0.19	0.01	—	1,688
Water	—	—	—	—	—	—	—	—	—	—	—	40.8	38.7	79.5	4.19	0.10	—	214
Waste	—	—	—	—	—	—	—	—	—	—	—	279	0.00	279	27.8	0.00	—	974
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.39	0.39
Total	2.11	3.82	1.93	13.1	0.02	0.09	1.49	1.59	0.09	0.38	0.47	319	3,612	3,931	32.3	0.21	7.38	4,807
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.27	1.17	1.14	7.99	0.02	0.02	1.49	1.51	0.01	0.38	0.39	—	1,746	1,746	0.10	0.10	0.18	1,778
Area	—	1.90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.10	0.05	0.91	0.77	0.01	0.07	—	0.07	0.07	—	0.07	—	1,679	1,679	0.19	0.01	—	1,688
Water	—	—	—	—	—	—	—	—	—	—	—	40.8	38.7	79.5	4.19	0.10	—	214
Waste	—	—	—	—	—	—	—	—	—	—	—	279	0.00	279	27.8	0.00	—	974
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.39	0.39

Total	1.37	3.12	2.05	8.76	0.02	0.09	1.49	1.58	0.08	0.38	0.46	319	3,463	3,782	32.3	0.21	0.57	4,655
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.27	1.18	1.07	7.82	0.02	0.02	1.48	1.50	0.01	0.38	0.39	—	1,777	1,777	0.10	0.10	3.02	1,811
Area	0.31	2.18	0.01	1.76	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.23	7.23	< 0.005	< 0.005	—	7.26
Energy	0.10	0.05	0.91	0.77	0.01	0.07	—	0.07	0.07	—	0.07	—	1,679	1,679	0.19	0.01	—	1,688
Water	—	—	—	—	—	—	—	—	—	—	—	40.8	38.7	79.5	4.19	0.10	—	214
Waste	—	—	—	—	—	—	—	—	—	—	—	279	0.00	279	27.8	0.00	—	974
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.39	0.39
Total	1.68	3.41	2.00	10.3	0.02	0.09	1.48	1.57	0.09	0.38	0.46	319	3,502	3,821	32.3	0.21	3.41	4,694
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.23	0.22	0.20	1.43	< 0.005	< 0.005	0.27	0.27	< 0.005	0.07	0.07	—	294	294	0.02	0.02	0.50	300
Area	0.06	0.40	< 0.005	0.32	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.20	1.20	< 0.005	< 0.005	—	1.20
Energy	0.02	0.01	0.17	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	278	278	0.03	< 0.005	—	279
Water	—	—	—	—	—	—	—	—	—	—	—	6.75	6.42	13.2	0.69	0.02	—	35.4
Waste	—	—	—	—	—	—	—	—	—	—	—	46.1	0.00	46.1	4.61	0.00	—	161
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.07	0.07
Total	0.31	0.62	0.37	1.89	< 0.005	0.02	0.27	0.29	0.02	0.07	0.08	52.9	580	633	5.35	0.03	0.56	777

3. Construction Emissions Details

3.1. Site Preparation (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.34	3.65	36.0	32.9	0.05	1.60	—	1.60	1.47	—	1.47	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.99	0.90	< 0.005	0.04	—	0.04	0.04	—	0.04	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	—	0.54	0.54	—	0.28	0.28	—	—	—	—	—	—	—
Onsite truck	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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.18	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.0	24.0	< 0.005	< 0.005	—	24.1
Dust From Material Movement	—	—	—	—	—	—	0.10	0.10	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.07	0.79	0.00	0.00	0.15	0.15	0.00	0.03	0.03	—	149	149	0.01	0.01	0.02	—
Vendor	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	—
Hauling	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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.20	4.20	< 0.005	< 0.005	0.01	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.69	0.69	< 0.005	< 0.005	< 0.005	—
Vendor	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	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—

3.3. Grading (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.26	1.90	18.2	18.8	0.03	0.84	—	0.84	0.77	—	0.77	—	2,958	2,958	0.12	0.02	—	2,969

Dust From Material Movement	—	—	—	—	—	—	7.08	7.08	—	3.42	3.42	—	—	—	—	—	—	—
Onsite truck	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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	1.00	1.03	< 0.005	0.05	—	0.05	0.04	—	0.04	—	162	162	0.01	< 0.005	—	163
Dust From Material Movement	—	—	—	—	—	—	0.39	0.39	—	0.19	0.19	—	—	—	—	—	—	—
Onsite truck	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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.18	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.8	26.8	< 0.005	< 0.005	—	26.9
Dust From Material Movement	—	—	—	—	—	—	0.07	0.07	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.06	0.67	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	128	128	0.01	0.01	0.01	—
Vendor	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	—
Hauling	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	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.19	7.19	< 0.005	< 0.005	0.01	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.19	1.19	< 0.005	< 0.005	< 0.005	—
Vendor	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	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—

3.5. Building Construction (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.44	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.44	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.82	0.69	6.43	7.52	0.01	0.29	—	0.29	0.26	—	0.26	—	1,375	1,375	0.06	0.01	—	1,379
Onsite truck	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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.17	1.37	< 0.005	0.05	—	0.05	0.05	—	0.05	—	228	228	0.01	< 0.005	—	228
Onsite truck	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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.16	0.11	1.96	0.00	0.00	0.29	0.29	0.00	0.07	0.07	—	326	326	0.02	0.01	1.30	—
Vendor	0.02	0.02	0.49	0.17	< 0.005	0.01	0.10	0.11	0.01	0.03	0.03	—	387	387	0.01	0.06	1.05	—
Hauling	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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.14	0.14	1.55	0.00	0.00	0.29	0.29	0.00	0.07	0.07	—	294	294	0.02	0.01	0.03	—
Vendor	0.02	0.01	0.53	0.17	< 0.005	0.01	0.10	0.11	0.01	0.03	0.03	—	387	387	0.01	0.06	0.03	—
Hauling	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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.07	0.91	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	173	173	0.01	0.01	0.32	—
Vendor	0.01	0.01	0.30	0.10	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	222	222	< 0.005	0.03	0.26	—
Hauling	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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.01	0.17	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.6	28.6	< 0.005	< 0.005	0.05	—
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	36.7	36.7	< 0.005	0.01	0.04	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—

3.7. Building Construction (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.61	0.77	< 0.005	0.03	—	0.03	0.02	—	0.02	—	141	141	0.01	< 0.005	—	141
Onsite truck	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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.11	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.3	23.3	< 0.005	< 0.005	—	23.4
Onsite truck	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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.15	0.13	0.13	1.43	0.00	0.00	0.29	0.29	0.00	0.07	0.07	—	288	288	0.01	0.01	0.03	—
Vendor	0.02	0.01	0.50	0.16	< 0.005	0.01	0.10	0.11	0.01	0.03	0.03	—	381	381	0.01	0.06	0.03	—
Hauling	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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.3	17.3	< 0.005	< 0.005	0.03	—
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	22.3	22.3	< 0.005	< 0.005	0.03	—
Hauling	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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.87	2.87	< 0.005	< 0.005	< 0.005	—
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.70	3.70	< 0.005	< 0.005	< 0.005	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—

3.9. Paving (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.71	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.05	0.04	0.41	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.06	0.62	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	125	125	< 0.005	0.01	0.01	—
Vendor	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	—
Hauling	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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.04	7.04	< 0.005	< 0.005	0.01	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.17	1.17	< 0.005	< 0.005	< 0.005	—
Vendor	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	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—

3.11. Architectural Coating (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	22.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
Architectural Coatings	—	1.22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Architectural Coatings	—	0.22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.29	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	57.6	57.6	< 0.005	< 0.005	0.01	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.23	3.23	< 0.005	< 0.005	0.01	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.54	0.54	< 0.005	< 0.005	< 0.005	—
Vendor	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	—
Hauling	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	—

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	1.38	1.29	0.98	8.74	0.02	0.02	1.49	1.51	0.01	0.38	0.39	—	1,880	1,880	0.09	0.09	6.99	1,916
Quality Restaurant	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	0.00
Parking Lot	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	0.00
Total	1.38	1.29	0.98	8.74	0.02	0.02	1.49	1.51	0.01	0.38	0.39	—	1,880	1,880	0.09	0.09	6.99	1,916
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	1.27	1.17	1.14	7.99	0.02	0.02	1.49	1.51	0.01	0.38	0.39	—	1,746	1,746	0.10	0.10	0.18	1,778
Quality Restaurant	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	0.00
Parking Lot	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	0.00
Total	1.27	1.17	1.14	7.99	0.02	0.02	1.49	1.51	0.01	0.38	0.39	—	1,746	1,746	0.10	0.10	0.18	1,778
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	0.23	0.22	0.20	1.43	< 0.005	< 0.005	0.27	0.27	< 0.005	0.07	0.07	—	294	294	0.02	0.02	0.50	300
Quality Restaurant	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	0.00
Parking Lot	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	0.00
Total	0.23	0.22	0.20	1.43	< 0.005	< 0.005	0.27	0.27	< 0.005	0.07	0.07	—	294	294	0.02	0.02	0.50	300

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	473	473	0.08	0.01	—	478
Quality Restaurant	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	116	116	0.02	< 0.005	—	117
Total	—	—	—	—	—	—	—	—	—	—	—	—	589	589	0.10	0.01	—	595
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	473	473	0.08	0.01	—	478
Quality Restaurant	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	116	116	0.02	< 0.005	—	117
Total	—	—	—	—	—	—	—	—	—	—	—	—	589	589	0.10	0.01	—	595
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	78.4	78.4	0.01	< 0.005	—	79.1
Quality Restaurant	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	19.2	19.2	< 0.005	< 0.005	—	19.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	97.5	97.5	0.02	< 0.005	—	98.5

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	0.10	0.05	0.91	0.77	0.01	0.07	—	0.07	0.07	—	0.07	—	1,090	1,090	0.10	< 0.005	—	1,093
Quality Restaurant	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
Parking Lot	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
Total	0.10	0.05	0.91	0.77	0.01	0.07	—	0.07	0.07	—	0.07	—	1,090	1,090	0.10	< 0.005	—	1,093
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	0.10	0.05	0.91	0.77	0.01	0.07	—	0.07	0.07	—	0.07	—	1,090	1,090	0.10	< 0.005	—	1,093
Quality Restaurant	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
Parking Lot	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
Total	0.10	0.05	0.91	0.77	0.01	0.07	—	0.07	0.07	—	0.07	—	1,090	1,090	0.10	< 0.005	—	1,093
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	0.02	0.01	0.17	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	180	180	0.02	< 0.005	—	181
Quality Restaurant	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
Parking Lot	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
Total	0.02	0.01	0.17	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	180	180	0.02	< 0.005	—	181

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	1.77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.63	0.59	0.03	3.57	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	14.7	14.7	< 0.005	< 0.005	—	14.7
Total	0.63	2.48	0.03	3.57	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	14.7	14.7	< 0.005	< 0.005	—	14.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	1.77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	1.90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.06	0.05	< 0.005	0.32	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.20	1.20	< 0.005	< 0.005	—	1.20
Total	0.06	0.40	< 0.005	0.32	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.20	1.20	< 0.005	< 0.005	—	1.20

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	9.29	8.84	18.1	0.95	0.02	—	48.8
Quality Restaurant	—	—	—	—	—	—	—	—	—	—	—	31.5	29.9	61.4	3.23	0.08	—	165
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	40.8	38.7	79.5	4.19	0.10	—	214
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	9.29	8.84	18.1	0.95	0.02	—	48.8
Quality Restaurant	—	—	—	—	—	—	—	—	—	—	—	31.5	29.9	61.4	3.23	0.08	—	165
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	—	40.8	38.7	79.5	4.19	0.10	—	214
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	1.54	1.46	3.00	0.16	< 0.005	—	8.08
Quality Restaurant	—	—	—	—	—	—	—	—	—	—	—	5.21	4.95	10.2	0.53	0.01	—	27.3
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	6.75	6.42	13.2	0.69	0.02	—	35.4

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	252	0.00	252	25.2	0.00	—	881
Quality Restaurant	—	—	—	—	—	—	—	—	—	—	—	26.6	0.00	26.6	2.66	0.00	—	93.1
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	279	0.00	279	27.8	0.00	—	974
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	252	0.00	252	25.2	0.00	—	881

Quality Restaurant	—	—	—	—	—	—	—	—	—	—	—	26.6	0.00	26.6	2.66	0.00	—	93.1
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	279	0.00	279	27.8	0.00	—	974
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	41.7	0.00	41.7	4.17	0.00	—	146
Quality Restaurant	—	—	—	—	—	—	—	—	—	—	—	4.40	0.00	4.40	0.44	0.00	—	15.4
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	46.1	0.00	46.1	4.61	0.00	—	161

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.39	0.39
Quality Restaurant	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.39	0.39
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Health Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.39	0.39
Quality Restaurant	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.39	0.39
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.07	0.07
Quality Restaurant	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.07	0.07

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	1/30/2024	2/13/2024	5.00	10.0	—
Grading	Grading	2/14/2024	3/13/2024	5.00	20.0	—
Building Construction	Building Construction	3/14/2024	1/30/2025	5.00	230	—
Paving	Paving	1/31/2025	2/28/2025	5.00	20.0	—
Architectural Coating	Architectural Coating	3/1/2025	3/29/2025	5.00	20.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40

Site Preparation	Tractors/Loaders/Backh	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backh oes	Diesel	Average	3.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backh oes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	11.9	LDA,LDT1,LDT2
Site Preparation	Vendor	—	9.10	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	11.9	LDA,LDT1,LDT2

Grading	Vendor	—	9.10	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	34.4	11.9	LDA,LDT1,LDT2
Building Construction	Vendor	13.4	9.10	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	11.9	LDA,LDT1,LDT2
Paving	Vendor	—	9.10	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	6.89	11.9	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	9.10	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	123,000	41,000	14,192

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Ton of Debris)	Material Exported (Ton of Debris)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	0.00	0.00	15.0	0.00	—
Grading	0.00	0.00	20.0	0.00	—
Paving	0.00	0.00	0.00	0.00	5.43

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Health Club	0.00	0%
Quality Restaurant	0.00	0%
Parking Lot	5.43	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Health Club	322	322	322	117,530	2,097	2,097	2,097	765,235
Quality Restaurant	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	123,000	41,000	14,192

5.10.3. Landscape Equipment

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

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Health Club	847,057	204	0.0330	0.0040	3,399,606
Quality Restaurant	0.00	204	0.0330	0.0040	0.00

Parking Lot	207,201	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Health Club	4,849,738	0.00
Quality Restaurant	16,418,139	0.00
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Health Club	467	—
Quality Restaurant	49.4	—
Parking Lot	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Health Club	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Health Club	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Quality Restaurant	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00

Quality Restaurant	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
Quality Restaurant	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	20.4	annual days of extreme heat
Extreme Precipitation	1.60	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

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

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

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

Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	59.7
AQ-PM	54.7
AQ-DPM	72.6
Drinking Water	99.0
Lead Risk Housing	11.8
Pesticides	94.2
Toxic Releases	43.0
Traffic	62.5
Effect Indicators	—
CleanUp Sites	81.4
Groundwater	59.6
Haz Waste Facilities/Generators	78.4
Impaired Water Bodies	0.00
Solid Waste	86.5

Sensitive Population	—
Asthma	83.6
Cardio-vascular	91.0
Low Birth Weights	28.4
Socioeconomic Factor Indicators	—
Education	42.3
Housing	15.1
Linguistic	34.6
Poverty	22.5
Unemployment	36.4

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	56.89721545
Employed	56.93571154
Median HI	74.2846144
Education	—
Bachelor's or higher	33.29911459
High school enrollment	100
Preschool enrollment	58.59104324
Transportation	—
Auto Access	88.68215065
Active commuting	17.60554344
Social	—
2-parent households	95.0468369

Voting	64.72475298
Neighborhood	—
Alcohol availability	93.5711536
Park access	81.35506224
Retail density	23.46978057
Supermarket access	19.32503529
Tree canopy	48.95418966
Housing	—
Homeownership	70.64031823
Housing habitability	66.84203773
Low-inc homeowner severe housing cost burden	56.25561401
Low-inc renter severe housing cost burden	47.45284229
Uncrowded housing	40.20274605
Health Outcomes	—
Insured adults	85.66662389
Arthritis	71.8
Asthma ER Admissions	14.4
High Blood Pressure	56.0
Cancer (excluding skin)	68.9
Asthma	37.3
Coronary Heart Disease	83.6
Chronic Obstructive Pulmonary Disease	59.8
Diagnosed Diabetes	76.6
Life Expectancy at Birth	39.0
Cognitively Disabled	43.0
Physically Disabled	93.4
Heart Attack ER Admissions	7.2

Mental Health Not Good	43.4
Chronic Kidney Disease	85.5
Obesity	38.6
Pedestrian Injuries	19.6
Physical Health Not Good	57.2
Stroke	80.6
Health Risk Behaviors	—
Binge Drinking	21.6
Current Smoker	35.6
No Leisure Time for Physical Activity	47.2
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	31.0
Elderly	87.4
English Speaking	63.7
Foreign-born	34.9
Outdoor Workers	27.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	55.7
Traffic Density	68.1
Traffic Access	0.0
Other Indices	—
Hardship	51.8
Other Decision Support	—
2016 Voting	53.6

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	73.0
Healthy Places Index Score for Project Location (b)	66.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

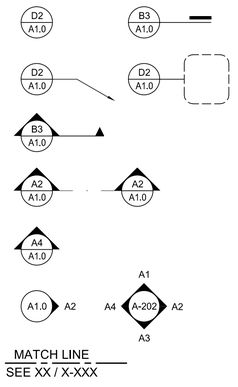
No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Parking lot estimated to be approximately 5.43 acres of asphalt, based on site plan.
Construction: Construction Phases	No demolition phase.
Operations: Vehicle Data	Trip rates modified to reflect trips provided in traffic study.

APPENDIX B – SITE PLANS

ARCHITECTURAL SYMBOLS LEGEND



PROJECT DIRECTORY

ARCHITECT

SMITH ARCHITECTURE

ARCHITECT — JUSTIN K. SMITH

7037 DUSTY LN
MODESTO, CA 95357
P: 209.614.3725
JUSTIN@SMITHARCHITECTUREINC.COM

PROJECT DATA

SITE ADDRESS: **3 STRIKES BOWLING**
WEST ATHERTON DRIVE
MANTECA CA. 95337

APN: 226-16-020

PROJECT AREA: 1ST FLOOR: 45,600 SQ.FT.
2ND FLOOR: 36,409 SQ.FT.
OVERALL: 82,009 SQ.FT.

CONSTRUCTION: IIA

OCCUPANCY TYPE: A-3 (BOWLING ALLEY) & A-2 (RESTAURANT)

SPRINKLERED: YES (FULLY SPRINKLERED)
NUMBER OF FLOORS: 2

DEFERRED APPROVALS: FIRE ALARM
FIRE SPRINKLER

SITE ADDRESS: **VILLA BANCHETO BANQUET HALL**
WEST ATHERTON DRIVE
MANTECA CA. 95337

APN: 226-16-020

PROJECT AREA: 1ST FLOOR: 27,045 SQ.FT.
2ND FLOOR: 27,045 SQ.FT.
OVERALL: 54,090 SQ.FT.

CONSTRUCTION: II-A

OCCUPANCY TYPE: A-2 (BANQUET HALL)

SPRINKLERED: YES (FULLY SPRINKLERED)
NUMBER OF FLOORS: 2

DEFERRED APPROVALS: FIRE ALARM
FIRE SPRINKLER

PROJECT SCOPE

OVERALL SCOPE OF WORK IS THE CONSTRUCTION OF TWO NEW TILT-UP BUILDINGS. BUILDING #1 IS A 3 STRIKES BOWLING CENTER WITH BOWLING, ARCADE, RESTAURANT, BARS AND PARTY ROOMS. BUILDIING #2 IS VILLA BANCHETO BANQUET HALL WITH BANQUET HALLS, A CHAPPEL, AND CATERING KITCHEN.
THE GENERAL CONTRACTOR SHALL THUROUGHLY REVIEW THE PLANS AND SPECIFICATIONS HIMSELF AND WITH ALL TRADES AND ACCEPTS THE MATERIALS, SYSTEMS, DETAILS AND ASSEMBLIES AS BEING CONSTRUCTABLE AND CAN BE WARRANTED FOR A TIME PERIOD CONSISTANT WITH INDUSTRY STANDARDS UNLESS A SPECIFIC TIME PERIOD IS NOTED HEREIN.

3 STRIKES BOWLING & VILLA BANCHETO BANQUET HALL

WEST ATHERTON DRIVE
MANTECA CA. 95337

PROJECT STATUS: PLANNING PKG. ISSUE DATE: 10-05-2023

ABBREVIATIONS

AC	ASPHALTIC CONCRETE
ACC	ACCESSIBLE
AGG	AGGREGATE
A/C	AIR CONDITIONER
AL	ALUMINUM
AB	ANCHOR BOLT
@	AT
ABV	ABOVE
AFF	ABOVE FINISH FLOOR
BLK	BLOCK
BLKG	BLOCKING
BD	BOARD
CB	CATCH BASIN
CFCI	CONTRACTOR FURNISHED & INSTALLED
CG	CORNER GUARD
CLG	CEILING
COL	COLUMN
CONC	CONCRETE
CMU	CONCRETE MASONRY UNIT
CONT	CONTINUOUS OR CONTINUE
DIAG	DIAGONAL
DS	DOWN SPOUT
DWGS	DRAWINGS
"	DIAMETER
ELECT	ELECTRICAL
ELEV	ELEVATION
EQ	EQUAL
(E)	EXISTING
EXH	EXHAUST
EXT	EXTERIOR
FOS	FACE OF STUD
FLUOR	FLUORESCENT
FIN	FINISH
FLR	FLOOR
FD	FLOOR DRAIN
FTG	FOOTING
FND	FOUNTATION
GA	GAUGE
GALV	GALVANIZED
GL	GLASS OR GLAZING
GYP BD	GYPSUM BOARD
HDR	HEADER
HVAC	HEATING/VENTILATION/ AIR CONDITIONING
HT	HEIGHT
HORIZ	HORIZONTAL
HB	HOSE BIB
INT	INTERIOR
JT	JOINT
LB	LAG BOLT
LAV	LAVATORY
LT	LIGHT
MAX	MAXIMUM
MECH	MECHANICAL
MTL	METAL
MIN	MINIMUM
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OBS	OBSCURE
OC	ON CENTER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED
OR	OPERATION ROOM
OH	OVER HEAD
PVMT	PAVEMENT
PL	PLATE
PLN	PLAN
PLWD	PLYWOOD
RAD	RADIUS
RD	ROOF DRAIN
RM	ROOM
RR	RESTROOM
SCH	SCHEDULE
SHT	SHEET
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
STD	STANDARD
STOR	STORAGE
SAT	SUSPENDED ACOUSTICAL TILE
SYS	SYSTEM
TEL	TELEPHONE
THK	THICK
T&G	TONGUE & GROOVE
T.O.P.	TOP OF PLATE (ELEV.)
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VCT	VINYL COMPOSITIONAL TILE
VB	VINYL BASE
V.I.F.	VARIFY IN FIELD
WC	WATER CLOSET
WP	WEATHER OR WATER PROOF
WD	WOOD

SHEET INDEX

ARCHITECTURAL SHEETS

A0.1	COVER SHEET - PLANNING
A1.1	SITE PLAN
A2.1	1ST FLOOR PLAN - 3 STRIKES
A2.2	2ND FLOOR PLAN - 3 STRIKES
A2.3	1ST FLOOR PLAN - BANQUET HALL
A2.4	2ND FLOOR PLAN - BANQUET HALL
A4.1	ROOF PLAN - 3 STRIKES
A4.2	ROOF PLAN - BANQUET HALL
A5.1	EXTERIOR ELEVATIONS - 3 STRIKES
A5.2	EXTERIOR ELEVATIONS - BANQUET HALL
A6.1	SECTIONS - 3 STRIKES
A6.2	SECTIONS - BANQUET HALL
A7.1	COLOR BOARD
A8.1	3D VIEWS - 3 STRIKES
A8.2	3D VIEWS - BANQUET HALL

GENERAL NOTES

1. CODES: ALL WORK SHALL CONFORM TO THE FOLLOWING CODES, CONTRACTOR AND THEIR SUB-CONTRACTORS SHALL HAVE WORKING KNOWLEDGE OF ALL CODES, REGULATIONS AND/OR STANDARDS APPLICABLE TO THEIR WORK. CONTRACTOR SHALL MAKE AVAILABLE LISTED CODES AT JOB SITE AT ALL TIMES.
   2022 CALIFORNIA BUILDING CODE (CBC)
   [2021 INTERNATIONAL BUILDING CODE (IBC)]

   2022 CALIFORNIA ELECTRICAL CODE (CEC)
   [2020 NATIONAL ELECTRICAL CODE (NEC)]

   2022 CALIFORNIA MECHANICAL CODE (CMC)
   [2021 UNIFORM MECHANICAL CODE (UMC)]

   2022 CALIFORNIA PLUMBING CODE (CPC)
   [2021 UNIFORM PLUMBING CODE (UPC)]

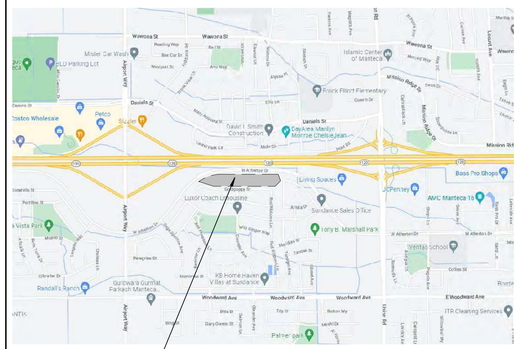
   2022 CALIFORNIA ENERGY CODE
   [2021 BUILDING ENERGY EFFICIENCY STANDARDS]

   2022 CALIFORNIA FIRE CODE (CFC)
   [2021 INTERNATIONAL FIRE CODE (IFC)]

   2022 CALIFORNIA EXISTING BUILDING CODE (CEBC)
   [2021 INTERNATIONAL EXISTING BUILDING CODE (IEBC)]

   2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGreen Code)
2. EXISTING CONDITIONS: ALL EXISTING CONDITIONS NOT SHOWN OR INDICATED ON THESE PLANS ARE TO REMAIN UNCHANGED. FIELD VERIFY EXISTING CONDITIONS AND ALL DIMENSIONS. ANY DISCREPANCY BETWEEN DRAWINGS AND ACTUAL WORK SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR CORRECTION PRIOR TO COMMENCING WITH THE WORK.
3. INSULATION: ALL INSULATION MATERIALS, INCLUDING FACINGS, SUCH AS VAPOR BARRIERS OR BREATHER PAPERS INSTALLED WITHIN FLOOR-CEILING ASSEMBLIES, ROOF-CEILING ASSEMBLIES, WALLS, CRAWL SPACES OR ATTICS, SHALL HAVE A FLAME SPREAD RATING NOT TO EXCEED 25 AND A SMOKE DENSITY NOT TO EXCEED 450 WHEN TESTED IN ACCORDANCE WITH SECTION 803 IN THE 2019 CBC.
4. WORK: ALL WORK SHALL BE DONE IN A NEAT AND WORKMAN LIKE MANNER ACCORDING TO THE BEST TRADE PRACTICE BY THOSE SKILLED IN THE PARTICULAR TRADE, EQUIPMENT, FIXTURES, PIPING, ETC., SHALL BE PLUMB, LEVEL, SQUARE OR CENTERED ETC., EQUIPMENT TO BE INSTALLED IN STRICT COMPLIANCE WITH MANUFACTURERS' RECOMMENDATIONS.
5. ANCHORS: WHEN INSTALLING DRILLED-IN ANCHORS AND/OR POWDER DRIVEN PINS IN EXISTING NON-PRESTRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. WHEN INSTALLING THEM INTO EXISTING PRE STRESSED TENDONS, USE A NONDESTRUCTIVE METHOD PRIOR TO INSTALLATION. EXERCISE EXTREME CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE TENDONS.
6. PLANS: GENERAL CONTRACTOR SHALL MAKE AVAILABLE COMPLETE SETS OF APPROVED CONSTRUCTION DOCUMENTS TO HIS OR HER SUBCONTRACTORS FOR REVIEW. EACH SUBCONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING THE COMPLETE SET AND COORDINATING ITEMS WHICH PERTAIN TO HIS OR HER WORK WITH OTHER TRADES PRIOR TO COMMENCING WITH THE WORK. MAKE SURE THE DRAWINGS YOU USE ARE APPROVED AND UP TO DATE.
7. ACCESS: ALL VALVES, DETECTORS, FIRE AND SMOKE DAMPERS SHALL BE ACCESSIBLE. WHETHER OR NOT SHOWN ON PLANS AT EACH LOCATION.
8. HAZMAT: PER HAZARD MANAGEMENT SERVICES, INC. REPORT DATED NOVEMBER 24, 2014,
   (THAT IS, ASBESTOS, LEAD PAINT, ETC.) SHOULD THE CONTRACTOR ENCOUNTER SUCH MATERIALS, CONTACT THE OWNER IMMEDIATELY FOR REMOVAL AND DISPOSAL.
9. SCOPE OF WORK: IT IS NOT INTENDED THAT THE CONTRACT DOCUMENTS INCLUDE EACH AND EVERY SUBSYSTEM AND SUBCOMPONENT NECESSARY TO FULLY AND PROPERLY COMPLETE THE WORK. SUBSYSTEMS, SUBCOMPONENTS OR DETAILS REQUIRED OR NORMALLY INCLUDED AS TRADE PRACTICE MAY NOT BE SPECIFICALLY MENTIONED OR SHOWN. NEVERTHELESS, CONTRACTOR SHALL BE RESPONSIBLE FOR EACH ELEMENT OF THE WORK.
10. FIRE EXTINGUISHERS: NECESSARY 2A:10BC OR BETTER PORTABLE FIRE EXTINGUISHERS ARE PER SECTION 906, PART 9 (CFC), TITLE 24, CAC AND TITLE 19, CCR. AT REMODELS, PROTECT AND PROVIDE ADEQUATE CLEARANCES AROUND EXISTING EXTINGUISHERS CONSTRUCTION AS NECESSARY. ADDITIONAL FIRE EXTINGUISHERS, BY CONTRACTOR, MAY BE NEEDED CONSTRUCTION. PERMANENT FACILITIES REQUIRE A MINIMUM OF ONE PORTABLE FIRE EXTINGUISHER IN APPLICABLE BUILDINGS. LIMIT TRAVEL DISTANCE TO 75 FEET. VERIFY LOCATION(S) WITH OWNER & FLSO IF NOT ALREADY SHOWN ON PLANS. EXTINGUISHERS ARE REQUIRED IN ELEVATOR EQUIPMENT ROOMS. ACCESSIBLE PORTIONS SHALL NOT EXCEED 48" AFF. 20BC OR BETTER
11. SPECIAL TESTING AND INSPECTION FOR EXPANSION ANCHORS, CONCRETE CEILING WIRES ETC. TO BE COORDINATED BY CONTRACTOR, TESTING LAB CONTRACTED BY OWNER. COST OF REINSPECTION TO BE PAID BY CONTRACTOR.

VICINITY MAP



IF THIS SHEET IS NOT 24"x36", IT HAS BEEN RESIZED - SCALE ACCORDINGLY 0 1/4" 1/2" 1" 2"

SMITH ARCHITECTURE
7037 Dusty Lane
Modesto, CA 95357
209.614.3725
justin@smitharchitectureinc.com

CONSULTING ENGINEER

AUTHORITY HAVING JURISDICTION

PROJECT

3 STRIKES BOWLING & VILLA BANCHETO BANQUET HALL
WEST ATHERTON DRIVE
MANTECA CA. 95337

PROJECT DETAILS

PROJECT	22017
SUBMITTAL	

PROJECT REVISIONS

MARK	DATE	DESCRIPTION

SHEET DETAILS

DRAWN	JG
CHECKED	JS

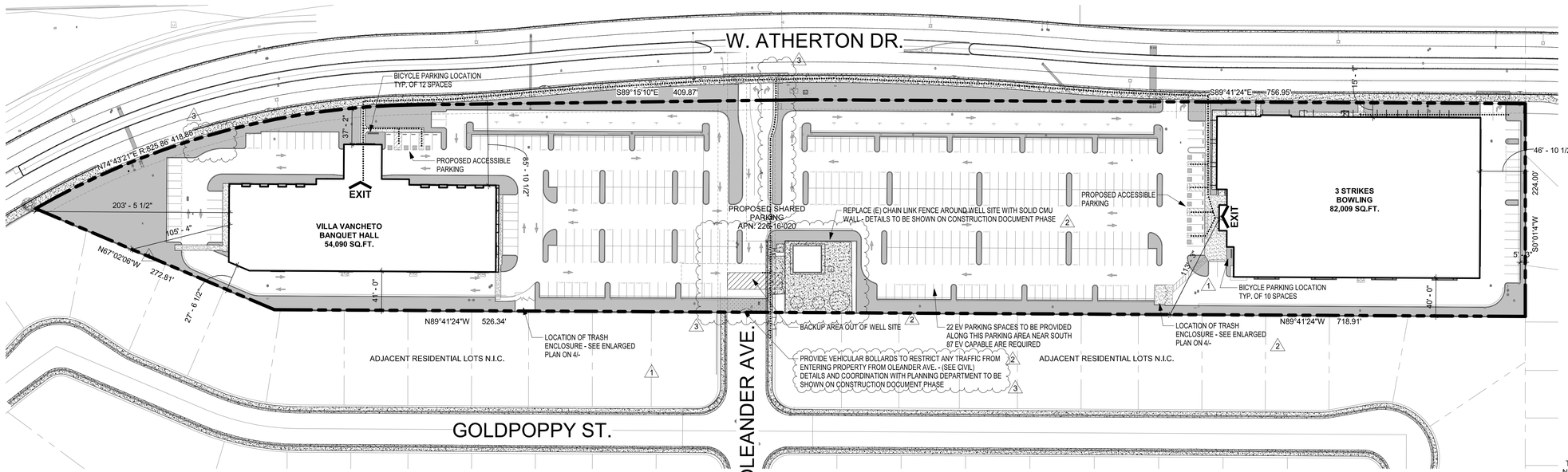
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COVER SHEET - PLANNING

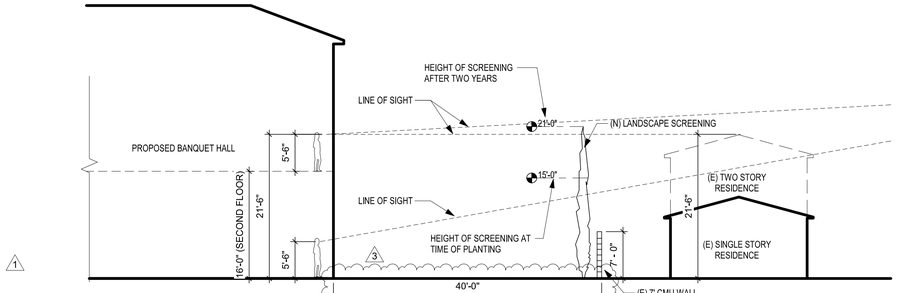
SHEET

A0.1

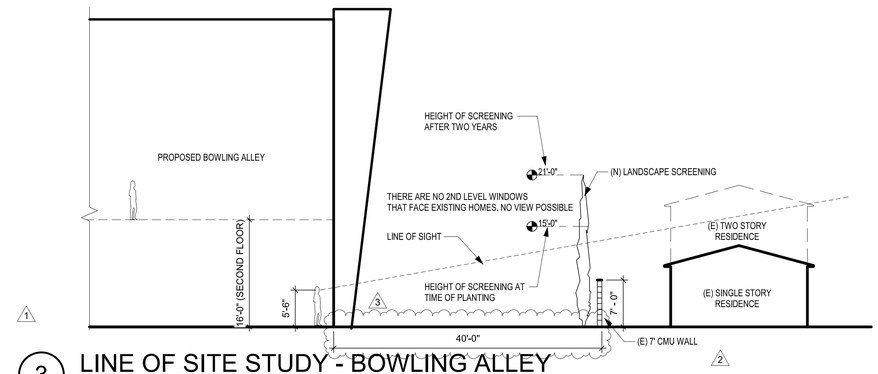
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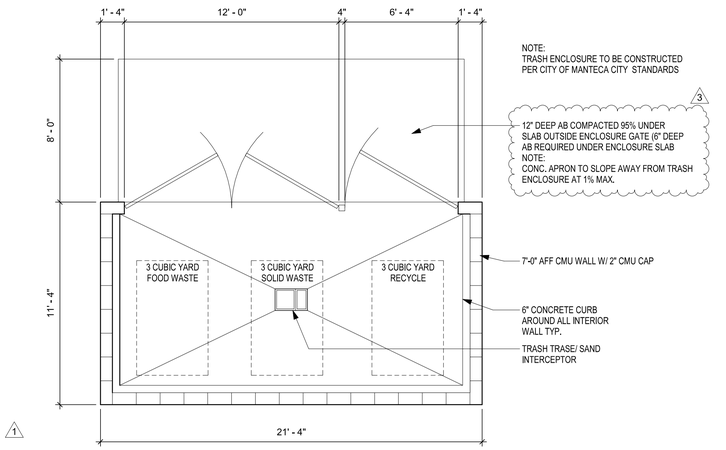
1 SITE PLAN
1" = 60'-0"



2 LINE OF SITE STUDY - BANQUET HALL
3/32" = 1'-0"



3 LINE OF SITE STUDY - BOWLING ALLEY
3/32" = 1'-0"



4 TRASH ENCLOSURE
1/4" = 1'-0"

PARKING COUNT

309	REGULAR PARKING STALLS
114	COMPACT PARKING STALLS
12	ACCESSIBLE PARKING STALLS
435	TOTAL PARKING

TOTAL LANDSCAPE AREA

EXISTING PARCEL AREA:	318,175 SQ.FT.
PROPOSED LANDSCAPE AREA:	67,910 SQ.FT.
% OF LANDSCAPE AREA:	21.34%

SITE LEGEND

EXIT — MAIN ACCESSIBLE ENTRANCE/ EXIT TO BUILDING

ACCESSIBLE PATH OF TRAVEL

IF THIS SHEET IS NOT 24"x36", IT HAS BEEN RESIZED - SCALE ACCORDINGLY 0 1/4" 1/2" 1" 2"

11/16/2023 8:49:29 AM D:_Side Projects\SMITH ARCHITECTURE\2023\22017 - 3 Strikes And Banquet Hall Manteca_Revit\CENTRAL\22017_Ten Pin and Banquet Hall - Manteca_R21.rvt

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PROJECT

3 STRIKES BOWLING & VILLA BANCHETO BANQUET HALL

WEST ATHERTON DRIVE
MANTECA CA. 95337

PROJECT DETAILS

PROJECT SUBMITTAL	22017

PROJECT REVISIONS

MARK	DATE	DESCRIPTION
1	7-8-23	PLANNING P.C.#1
2	10-4-23	PLANNING P.C. #2
3	11-15-23	PLANNING P.C. #3

SHEET DETAILS

DRAWN	Author
CHECKED	Checker

SHEET TITLE

SITE PLAN & LINE OF SITE STUDY

SHEET

A1.1

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APPENDIX B: NOISE STUDY

Environmental Noise Assessment

Manteca Banquet and Bowling Facility

City of Manteca, California

January 24, 2024

Project #230405

Prepared for:

De Novo Planning Group
1020 Suncast Lane #106
El Dorado Hills, CA 95762

Prepared by:

Saxelby Acoustics LLC





Luke Saxelby, INCE Bd. Cert.
Principal Consultant
Board Certified, Institute of Noise Control Engineering (INCE)

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www.SaxNoise.com | Luke@SaxNoise.com
915 Highland Pointe Drive, Suite 250
Roseville, CA 95678

INTRODUCTION

The Manteca Bowling and Banquet Facility project is located in the City of Manteca, California. The project will consist of the construction of a new bowling facility and a two-story banquet hall on a vacant parcel. The primary noise sources associated with operation of the proposed project are parking lot circulation, HVAC equipment, the balcony/patio area, and indoor amplified music. Single family residential uses are located to the south and east of the project site. The purpose of this analysis is to predict the noise generation associated with these uses and to achieve compliance with the applicable City of Manteca noise level standards.

Figure 1 shows the project site plan. **Figure 2** shows an aerial photo of the project site and noise measurement locations.

ENVIRONMENTAL SETTING

BACKGROUND INFORMATION ON NOISE

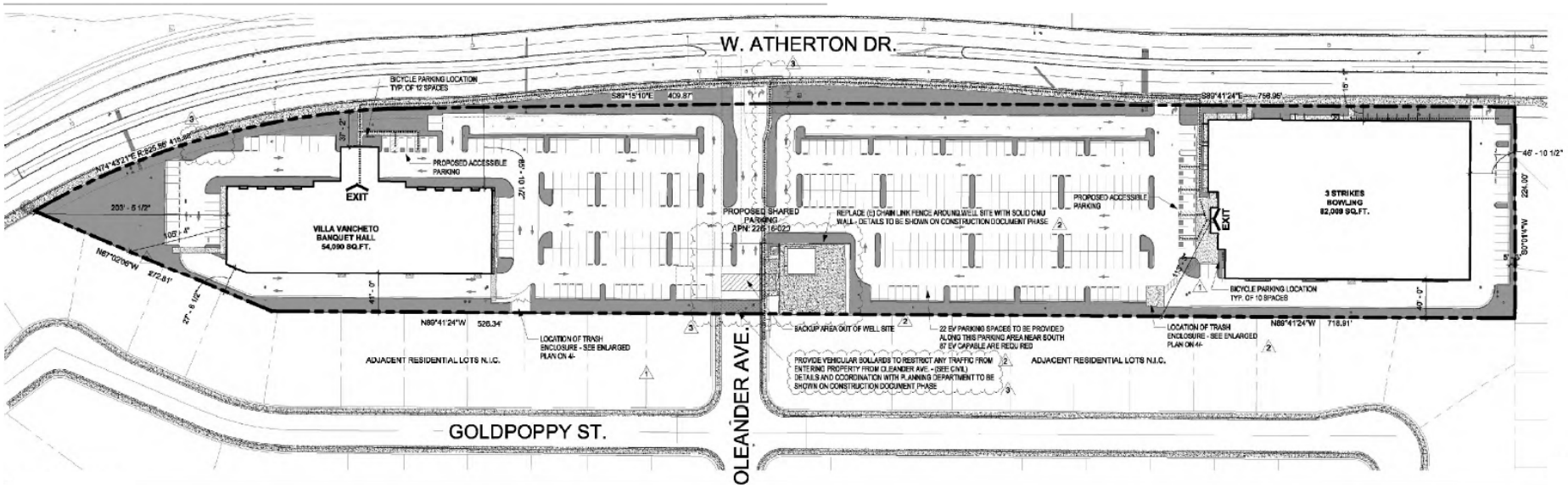
Fundamentals of Acoustics

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.



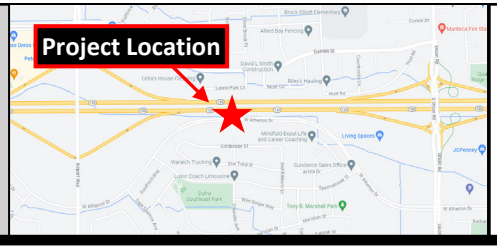
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Feet

Manteca Banquet and Bowling Facility

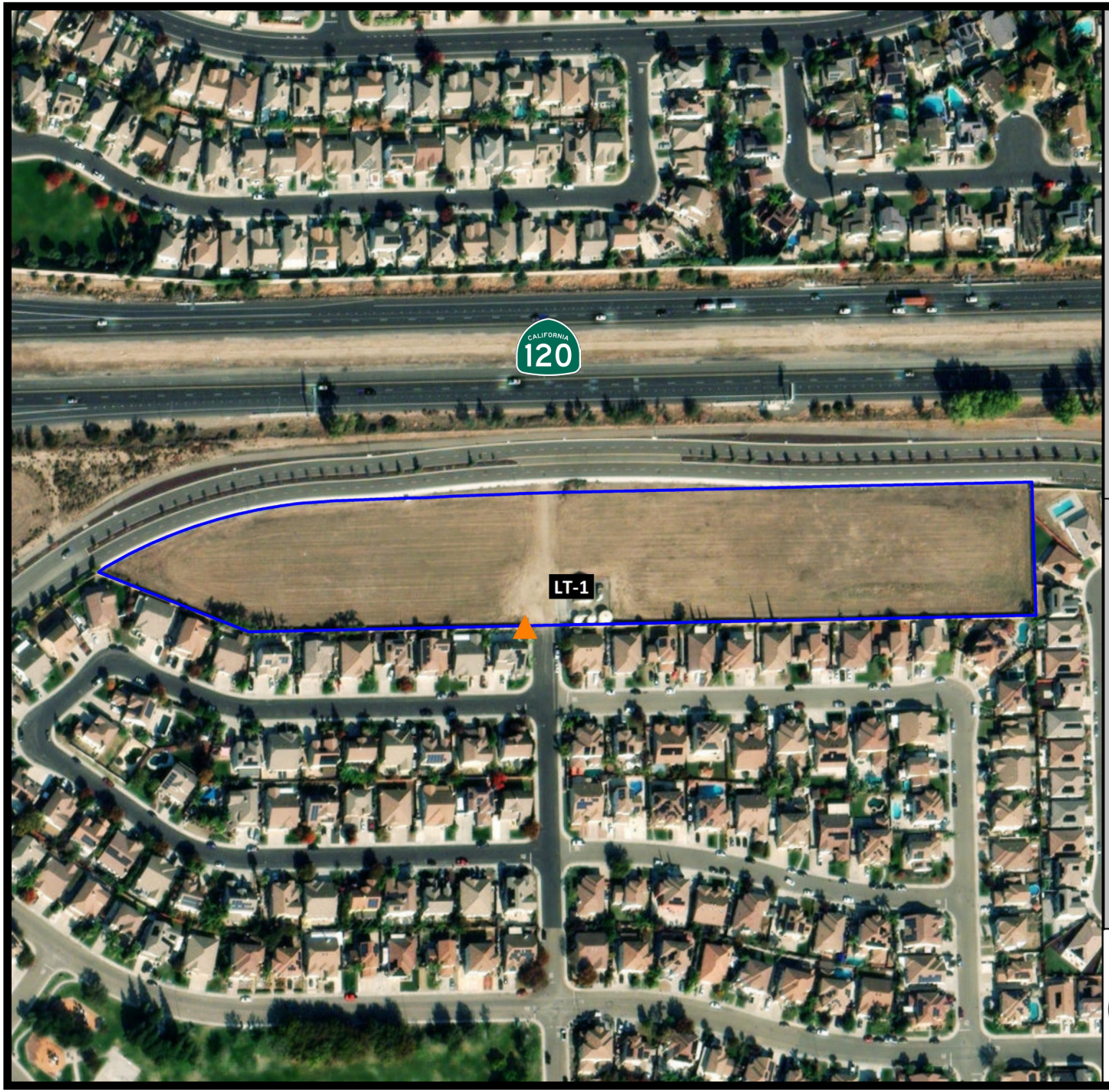
City of Manteca, California

Figure 1

Project Site Plan



SAXELBY ACOUSTICS
Acoustics · Noise · Vibration



Manteca Banquet and Bowling Facility

City of Manteca, California

Figure 2

Noise Measurement Sites

Legend

Project Site

Noise Measurement - Long Term

0 ft 500 ft 1000 ft 1500 ft 2000 ft 2500 ft 3000 ft

Projection: UTM Zone 10 / WGS84 / meters
Rev. Date: 04/25/2023

SAXELBY ACOUSTICS
Acoustics · Noise · Vibration

The decibel scale is logarithmic, not linear. In other words, two sound levels 10-dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10-dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A-weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10-decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 1 lists several examples of the noise levels associated with common situations. **Appendix A** provides a summary of acoustical terms used in this report.

TABLE 1: TYPICAL NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft.)	--100--	
Gas Lawn Mower at 1 m (3 ft.)	--90--	
Diesel Truck at 15 m (50 ft.), at 80 km/hr. (50 mph)	--80--	Food Blender at 1 m (3 ft.) Garbage Disposal at 1 m (3 ft.)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft.)	--70--	Vacuum Cleaner at 3 m (10 ft.)
Commercial Area Heavy Traffic at 90 m (300 ft.)	--60--	Normal Speech at 1 m (3 ft.)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. September, 2013.

Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1-dBA cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- A change in level of at least 5-dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6-dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING AMBIENT NOISE LEVELS

The existing noise environment in the project area is defined primarily by traffic on California State Route 120. To quantify the existing ambient noise environment in the project vicinity, Saxelby Acoustics conducted a continuous (24-hr.) noise level measurement at one location on the project site. The noise measurement location is shown on **Figure 2**. A summary of the noise level measurement survey results is provided in **Table 2**. **Appendix B** contains the complete results of the noise monitoring.

The sound level meter was programmed to record the maximum, median, and average noise levels at each site during the survey. The maximum value, denoted L_{max}, represents the highest noise level measured. The average value, denoted L_{eq}, represents the energy average of all of the noise received by the sound level meter microphone during the monitoring period. The median value, denoted L_{50}, represents the sound level exceeded 50 percent of the time during the monitoring period.

A Larson Davis Laboratories (LDL) model 820 integrating sound level meter was used for the ambient noise level measurement survey. The meter was calibrated before and after use with a CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

TABLE 2: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

Location	Date	L_{dn}	Daytime L_{eq}	Daytime L_{50}	Daytime L_{max}	Nighttime L_{eq}	Nighttime L_{50}	Nighttime L_{max}
LT-1: 460 ft. to CL of SR 120	4/21/23	71	67	65	80	64	63	78
	4/22/23	69	65	65	79	63	62	75
	4/23/23	68	64	63	77	61	61	73

Notes:

- *All values shown in dBA*
- *Daytime hours: 7:00 a.m. to 10:00 p.m.*
- *Nighttime Hours: 10:00 p.m. to 7:00 a.m.*
- *Source: Saxelby Acoustics 2023*

REGULATORY CONTEXT

FEDERAL

There are no federal regulations related to noise that apply to the Proposed Project.

STATE

There are no state regulations related to noise that apply to the Proposed Project.

LOCAL

City of Manteca General Plan

Exterior and interior noise standards for residential land uses are established within the City of Manteca General Plan Noise Element. Policies contained in the Noise Element applicable to the proposed project include:

The City of Manteca General Plan – Existing (2003) General Plan

The City of Manteca General Plan Noise Element contains goals, policies, and implementation measures for assessing noise impacts within the City. Listed below are the noise goals, policies, and implementation measures that are applicable to the proposed Project (City of Manteca as amended through 2016):

Goals: Noise

- N-1. Protect the residents of Manteca from the harmful and annoying effects of exposure to excessive noise.
- N-3. Ensure that the downtown core noise levels remain acceptable and compatible with commercial and higher density residential land uses.
- N-4. Protect public health and welfare by eliminating existing noise problems where feasible, by establishing standards for acceptable indoor and outdoor noise, and by preventing significant increases in noise levels.
- N-5. Incorporate noise considerations into land use planning decisions, and guide the location and design of transportation facilities to minimize the effects of noise on adjacent land uses.

Policies: Noise

- N-P-2. New development of residential or other noise-sensitive land uses will not be permitted in noise-impacted areas unless effective mitigation measures are incorporated into the project design to satisfy the performance standards in Table 9-1 [**Table 3**].

TABLE 3: MAXIMUM ALLOWABLE NOISE EXPOSURE MOBILE NOISE SOURCES

Land Use[4]	Outdoor Activity Areas[1]	Interior Spaces	
		Ldn/CNEL, dB	Leq/CNEL, dB[3]
Residential	60[2]	45	--
Transient Lodging	60[2]	45	--
Hospitals, Nursing Homes	60[2]	45	--
Theatres, Auditoriums, Music Halls	--	--	35
Churches, Music Halls	60[2]	--	40
Office Buildings	65	--	45
Schools, Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

Notes: [1] Outdoor activity areas for residential development are considered to be backyard patios or decks of single family dwellings, and the common areas where people generally congregate for multi-family developments. Outdoor activity areas for non-residential developments are considered to be those common areas where people generally congregate, including pedestrian plazas, seating areas, and outside lunch facilities. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.

[2] In areas where it is not possible to reduce exterior noise levels to 60 dB L_{dn} or below using a practical application of the best noise-reduction technology, an exterior noise level of up to 65 L_{dn} will be allowed.

[3] Determined for a typical worst-case hour during periods of use.

[4] Where a proposed use is not specifically listed on the table, the use shall comply with the noise exposure standards for the nearest similar use as determined by the City.

Source: City of Manteca General Plan, Noise Element, Table 9-1.

- N-P-3. The City may permit the development of new noise-sensitive uses only where the noise level due to fixed (non-transportation) noise sources satisfies the noise level standards of Table 9-2 [**Table 4**]. Noise mitigation may be required to meet Table 9-2 [**Table 4**] performance standards.

TABLE 4: PERFORMANCE STANDARDS FOR STATIONARY NOISE SOURCES OR PROJECTS AFFECTED BY STATIONARY NOISE SOURCES [1,2]

Noise Level Descriptor	Daytime (7 AM – 10 PM)	Nighttime (10 PM – 7 AM)
Hourly L_{eq}, dB	50	45
Maximum Level, dB	70	65

Notes: [1] Each of the noise levels specified above should be lowered by five (5) dB for simple noise tones, noises consisting primarily of speech or music, or recurring impulsive noises. Such noises are generally considered by residents to be particularly annoying and are a primary source of noise complaints.

[2] No standards have been included for interior noise levels. Standard construction practices should, with the exterior noise levels identified, result in acceptable interior noise levels.

Source: City of Manteca General Plan, Noise Element, Table 9-2.

- N-P-5. In accord with the Table 9-2 [**Table 4**] standards, the City shall regulate construction-related noise impacts on adjacent uses.

Implementation Measures: Noise

- N-I-1. New development in residential areas with an actual or projected exterior noise level of greater than 60 dB L_{dn} will be conditioned to use mitigation measures to reduce exterior noise levels to less than or equal to 60 dB L_{dn}.
- N-I-3. In making a determination of impact under the California Environmental Quality Act (CEQA), a substantial increase will occur if ambient noise levels are increased by 10 dB or more. An increase from 5-10 dB may be substantial. Factors to be considered in determining the significance of increases from 5-10 dB include:
  - the resulting noise levels
  - the duration and frequency of the noise
  - the number of people affected
  - the land use designation of the affected receptor sites
  - public reactions or controversy as demonstrated at workshops or hearings, or by correspondence
  - prior CEQA determinations by other agencies specific to the project
- N-I-4. Control noise at the source through use of insulation, berms, building design and orientation, buffer space, staggered operating hours and other techniques. Use noise barriers to attenuate noise to acceptable levels.

The City of Manteca General Plan – Proposed General Plan Update

It is expected that the City's General Plan update may be adopted prior to the approval of the proposed project. Therefore, the goals and policies of the proposed General Plan are also considered in this document. The City of Manteca General Plan Update noise goals, policies, and implementation measures are included below:

Goals

Goal S-5: Protect the quality of life by protecting the community from harmful and excessive noise.

Policies

S-5.1 Incorporate noise considerations into land use, transportation, and infrastructure planning decisions, and guide the location and design of noise-producing uses to minimize the effects of noise on adjacent noise-sensitive land uses, including residential uses and schools.

S-5.2 Ensure that Downtown noise levels remain acceptable and compatible with a pedestrian-oriented environment and higher density residential land uses.

S-5.3 Areas within Manteca exposed to existing or projected exterior noise levels from mobile noise sources exceeding the performance standards in Table S-1 (**Table 5**) shall be designated as noise-impacted areas.

S-5.4 Require residential and other noise-sensitive development projects to satisfy the noise level criteria in Tables S-1 and S-2.

S-5.5 Require new stationary noise sources proposed adjacent to noise sensitive uses to be mitigated so as to not exceed the noise level performance standards in Table S-2 (Table 5), or a substantial increase in noise levels established through a detailed ambient noise survey.

S-5.6 Regulate construction-related noise to reduce impacts on adjacent uses to the criteria identified in Table S-2 (**Table 6**) or, if the criteria in Table S-2 (**Table 6**) cannot be met, to the maximum level feasible using best management practices and complying with the MMC Chapter 9.52.

S-5.7 Where the development of residential or other noise-sensitive land use is proposed for a noise-impacted area or where the development of a stationary noise source is proposed in the vicinity of noise-sensitive uses, an acoustical analysis is required as part of the environmental review process so that noise mitigation may be considered in the project design. The acoustical analysis shall:

Be the responsibility of the applicant.

Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics.

Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions and the predominant noise sources.

Estimate existing and projected (20 years) noise levels in terms of the standards of Table S-1

(Table 4) or Table S-2 (Table 5), and compare those levels to the adopted policies of the Noise Element.

Recommend appropriate mitigation measures to achieve compliance with the adopted policies and standards of the Noise Element.

Estimate noise exposure after the prescribed mitigation measures have been implemented.

If necessary, describe a post-project assessment program to monitor the effectiveness of the proposed mitigation measures.

S-5.8 Apply noise level criteria applied to land uses other than residential or other noise-sensitive uses consistent with noise performance levels of Table S-1 (Table 4) and Table S-2 (Table 5).

S-5.9 Enforce the Sound Transmission Control Standards of the California Building Code concerning the construction of new multiple occupancy dwellings such as hotels, apartments, and condominiums.

S-5.10 Ensure that new equipment and vehicles purchased by the City comply with noise level performance standards consistent with the best available noise reduction technology.

S-5.11 Require the Manteca Police Department to actively enforce requirements of the California Vehicle Code relating to vehicle mufflers and modified exhaust systems.

S-5.12 For new residential development backing on to a freeway or railroad right-of-way, the developer shall be required to provide appropriate mitigation measures to satisfy the performance standards in Table S-1 (Table 4).

S-5.13 It is recognized that the City and surrounding areas are considered to be urban in nature and rely upon both the industrial and agricultural economy of the area. Therefore, it is recognized that noise sources of existing uses may exceed generally accepted standards.

S-5.14 Carefully review and give potentially affected residents an opportunity to fully review any proposals for the establishment of helipads or heliports.

S-5.15 Recognizing that existing noise-sensitive uses may be exposed to increase noise levels due to circulation improvement projects associated with development under the General Plan and that it may not be feasible to reduce increased traffic noise levels to the criteria identified in Table S-1 (Table 4), the following criteria may be used to determine the significance of noise impacts associated with circulation improvement projects:

Where existing traffic noise levels are less than 60 dB Ldn at the outdoor activity areas of noise-sensitive uses, a +5 dB Ldn increase in noise levels due to roadway improvement projects will be considered significant; and

Where existing traffic noise levels range between 60 and 65 dB Ldn at the outdoor activity areas of noise-sensitive uses, a +3 dB Ldn increase in noise levels due to roadway improvement projects will be considered significant; and

Where existing traffic noise levels are greater than 65 dB Ldn at the outdoor activity areas of

noise-sensitive uses, a + 1.5 dB Ldn increase in noise levels due to roadway improvement projects will be considered significant.

S-5.16 Work with the Federal Railroad Administration and passenger and freight rail operators to reduce exposure to rail and train noise, including establishing train horn "quiet zones" consistent with the federal regulations.

Implementation

S-5a *Require an acoustical analysis that complies with the requirements of S-5.7 where:*

*Noise sensitive land uses are proposed in areas exposed to existing or projected noise levels exceeding the levels specified in Table S-1 (**Table 5**) or S-2 (**Table 6**).*

*Proposed transportation projects are likely to produce noise levels exceeding the levels specified in Table S-1 (**Table 5**) or S-2 (**Table 6**) at existing or planned noise sensitive uses.*

S-5b *Assist in enforcing compliance with noise emissions standards for all types of vehicles, established by the California Vehicle Code and by federal regulations, through coordination with the Manteca Police Department and the California Highway Patrol.*

S-5c *Update the City's Noise Ordinance (Chapter 9.52) to reflect the noise standards established in this Noise Element and proactively enforce the City's Noise Ordinance, including requiring the following measures for construction:*

- *Restrict construction activities to the hours of 7:00 a.m. to 7:00 p.m. on Monday through Friday, and 8:00 a.m. to 6:00 p.m. on Saturdays. No construction shall be permitted outside of these hours or on Sundays or federal holidays, without a specific exemption issued by the City.*
- *A Construction Noise Management Plan shall be submitted by the applicant for construction projects, when determined necessary by the City. The Construction Noise Management Plan shall include proper posting of construction schedules, appointment of a noise disturbance coordinator, and methods for assisting in noise reduction measures.*
- *Noise reduction measures may include, but are not limited to, the following:*
  a. *Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds) wherever feasible.*
  b. *Except as provided herein, impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used. This muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, if such jackets are commercially available. this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment,*

whenever such procedures are available and consistent with construction procedures.

c. *Temporary power poles shall be used instead of generators where feasible.*

d. *Stationary noise sources shall be located as far from adjacent properties as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the City of provide equivalent noise reduction.*

e. *The noisiest phases of construction shall be limited to less than 10 days at a time. Exceptions may be allowed if the City determines an extension is necessary and all available noise reduction controls are implemented.*

f. *Delivery of materials shall observe the hours of operation described above.*

g. *Truck traffic should avoid residential areas to the extent possible.*

S-5d *In making a determination of impact under the California Environmental Quality Act (CEQA), a substantial increase will occur if ambient noise levels are have a substantial increase. Generally, a 3 dB increase in noise levels is barely perceptible, and a 5 dB increase in noise levels is clearly perceptible. Therefore, increases in noise levels shall be considered to be substantial when the following occurs:*

- *When existing noise levels are less than 60 dB, a 5 dB increase in noise will be considered substantial;*
- *When existing noise levels are between 60 dB and 65 dB, a 3 dB increase in noise will be considered substantial;*
- *When existing noise levels exceed 65 dB, a 1.5 dB increase in noise will be considered substantial.*

Additional or alternative criteria can be used for determining a substantial increase in noise levels. For instance, if the overall increase in noise levels occurs where no noise-sensitive uses are located, then the City may use their discretion in determining if there is any impact at all. In such a case, the following alternative factors may be used for determining a substantial increase in noise levels:

- *the resulting noise levels;*
- *the duration and frequency of the noise;*
- *the number of people affected;*
- *conforming or non-conforming land uses;*
- *the land use designation of the affected receptor sites;*
- *public reactions or controversy as demonstrated at workshops or hearings, or by correspondence; and*
- *prior CEQA determinations by other agencies specific to the project.*

S-5e *Control noise at the source through use of insulation, berms, building design and orientation,*

buffer space, staggered operating hours, and similar techniques. Where such techniques would not meet acceptable levels, use noise barriers to attenuate noise associated with new noise sources to acceptable levels.

S-5f *Require that all noise-attenuating features are designed to be attractive and to minimize maintenance.*

S-5g *Evaluate new transportation projects, such as truck routes, rail or public transit routes, and transit stations, using the standards contained in Table S-1 (**Table 5**). However, noise from these projects may be allowed to exceed the standards contained in Table S-1 (**Table 5**), if the City Council finds that there are special overriding circumstances.*

S-5h *Work with the Federal Rail Authority and passenger and freight rail service providers to establish a Quiet Zone at at-grade crossings in the City. Where new development would be affected by the train and rail noise, require project applicants to fund a fair-share of: a) studies associated with the application for a Quiet Zone, and b) alternative safety measures associated with the Quiet Zone (including, but not limited to signage, gates, lights, etc.).*

S-5i *Work in cooperation with Caltrans, the Union Pacific Railroad, San Joaquin Regional Rail Commission, and other agencies where appropriate to maintain noise level standards for both new and existing projects in compliance with Table S-1 (**Table 5**).*

S-5j *The City shall require new residential projects located adjacent to major freeways, truck routes, hard rail lines, or light rail lines to follow the FTA screening distance criteria to ensure that groundborne vibrations to do not exceed acceptable levels.*

TABLE 5: MAXIMUM ALLOWABLE NOISE EXPOSURE FROM MOBILE NOISE SOURCES

Land Use[1]	Outdoor Activity Areas[2,3]	Interior Spaces	
		Ldn/ CNEL, dBA	Leq, dBA[4]
Residential	60	45	-
Motels/Hotels	65	45	-
Mixed-Use	65	45	
Hospitals, Nursing Homes	60	45	-
Theaters, Auditoriums	-	-	35
Churches	60	-	40
Office Buildings	65	-	45
Schools, Libraries, Museums	70	-	45
Playgrounds, Neighborhood Parks	70	-	-
Industrial	75	-	45
Golf Courses, Water Recreation	70	-	-

[1]*Where a proposed use is not specifically listed, the use shall comply with the standards for the most similar use as determined by the City.*

[2]Outdoor activity areas for residential development are considered to be the back yard patios or decks of single family units and the common areas where people generally congregate for multi-family developments. Where common outdoor activity areas for multi-family developments comply with the outdoor noise level standard, the standard will not be applied at patios or decks of individual units provided noise-reducing measures are incorporated (e.g., orientation of patio/deck, screening of patio with masonry or other noise-attenuating material). Outdoor activity areas for non-residential developments are the common areas where people generally congregate, including pedestrian plazas, seating areas, and outside lunch facilities; not all residential developments include outdoor activity areas.

[3]In areas where it is not possible to reduce exterior noise levels to achieve the outdoor activity area standard w using a practical application of the best noise-reduction technology, an increase of up to 5 Ldn over the standard will be allowed provided that available exterior noise reduction measures have been implemented and interior noise levels are in compliance with this table

[4]Determined for a typical worst-case hour during periods of use.

TABLE 6: PERFORMANCE STANDARDS FOR STATIONARY NOISE SOURCES

Noise Level Descriptor	Daytime	Nighttime
	7 am to 10 pm	10 pm to 7 am
Hourly Leq, dBA	55	45

[1]Each of the noise levels specified above should be lowered by 5 dB for simple noise tones, noises consisting primarily of speech or music, or recurring impulsive noises. Such noises are generally considered to be particularly annoying and are a primary source of noise complaints.

[2]No standards have been included for interior noise levels. Standard construction practices should, with the exterior noise levels identified, result in acceptable interior noise levels.

[3]Stationary noise sources which are typically of concern include, but are not limited to, the following:

HVAC Systems	*Cooling Towers/Evaporative Condensers*
Pump Stations	*Lift Stations*
Emergency Generators	*Boilers*
Steam Valves	*Steam Turbines*
Generators	*Fans*
Air Compressors	*Heavy Equipment*
Conveyor Systems	*Transformers*
Pile Drivers	*Grinders*
Drill Rigs	*Gas or Diesel Motors*
Welders	*Cutting Equipment*
Outdoor Speakers	*Blowers*

[4]The types of uses which may typically produce the noise sources described above include but are not limited to: industrial facilities, pump stations, trucking operations, tire shops, auto maintenance shops, metal fabricating shops, shopping centers, drive-up windows, car washes, loading docks, public works projects, batch plants, bottling and canning plants, recycling centers, electric generating stations, race tracks, landfills, sand and gravel operations, and athletic fields.

City of Manteca Municipal Code Noise Ordinance

Section 9.52.030 of the City of Manteca Municipal Code prohibits excessive or annoying noise or vibration to residential and commercial properties in the City. The following general rules are outline in the ordinance:

9.52.030 Prohibited noises—General standard

No person shall make, or cause to suffer, or permit to be made upon any public property, public right-of-way or private property, any unnecessary and unreasonable noises, sounds or vibrations which are physically annoying to reasonable persons of ordinary sensitivity or which are so harsh or so prolonged or unnatural or unusual in their use, time or place as to cause or contribute to the unnecessary and unreasonable discomfort of any persons within the neighborhood from which said noises emanate or which interfere with the peace and comfort of residents or their guests, or the operators or customers in places of business in the vicinity, or which may detrimentally or adversely affect such residences or places of business. (Ord. 1374 § 1(part), 2007)

17.58.050 D. Exempt Activities

8. Construction activities when conducted as part of an approved Building Permit, except as prohibited in Subsection 17.58.050(E)(1) (Prohibited Activities) below.

17.58.050 E. Prohibited Activities

1. Construction Noise. Operating or causing the operation of tools or equipment on private property used in alteration, construction, demolition, drilling, or repair work daily between the hours of 7:00 p.m. and 7:00 a.m., so that the sound creates a noise disturbance across a residential property line, except for emergency work of public service utilities.

EVALUATION OF PROJECT OPERATIONAL NOISE ON EXISTING SENSITIVE RECEPTORS

ASSUMPTIONS FOR PROJECT NOISE SOURCES

The primary noise sources on the proposed project site would be parking lot circulation, HVAC equipment, the balcony/patio area, and indoor amplified music. The following is a list of assumptions used for the noise modeling. The data used is based upon a combination of manufacturer's provided data and Saxelby Acoustics data from similar operations.

Vehicle Circulation: The project will provide approximately 410 parking spaces. Saxelby Acoustics assumed that a nighttime (10:00 p.m. to 7:00 a.m.) peak hour of operation could consist of 410 automobile movements and 4 heavy truck movements to account for deliveries and trash collection. Parking lot movements are predicted to generate a sound exposure level (SEL) of 71 dBA SEL at 50 feet for cars and 85 dBA SEL at 50 feet for trucks. Saxelby Acoustics data.

Rooftop HVAC Units: Assumes 60 tons of cooling capacity for the bowling facility and 50 tons of cooling capacity for the banquet hall. Condensers are expected to operate continuously during the daytime and an average of 50% of the time at night. Manufacturer's data.

Indoor Amplified Music: Assumes operation of three concurrent events utilizing amplified music generating an interior level of 90 dBA/110 dBC L_{eq} during both daytime and nighttime hours. Assumes an exterior wall construction consisting of 3-coat stucco, OSB shear layer, wood stud framing, batt insulation, and a single layer of gypsum board. Assumes ceiling construction of DensDeck roof board over corrugated steel deck. Saxelby Acoustics data.

Outdoor Patio: Assumes a maximum of one person per five square feet speaking at a normal volume 50% of the time. Saxelby Acoustics data.

ASSUMPTIONS FOR PROJECT BUILDING CONSTRUCTION

Saxelby Acoustics assumed that the exterior wall assembly would be one of the following:

1. 3-coat stucco, OSB shear layer, staggered wood stud framing, batt insulation, and two layers of 5/8" type "X" gypsum board, or a similar assembly with an STC rating of at least 61.
2. Minimum 6" thichk tilt-up concrete panels, or similar assembly with an STC rating of at least 55.

Additionally, it was assumed that ceiling construction would consist of DensDeck Roof Board over a corrugated steel deck, wooden joists, batt insulation, and one layer of type "X" gypsum board, or a similar assembly with an STC rating of 58. See **Appendix C** for wall assembly details and transmission loss data.

NOISE MODELING METHODOLOGY

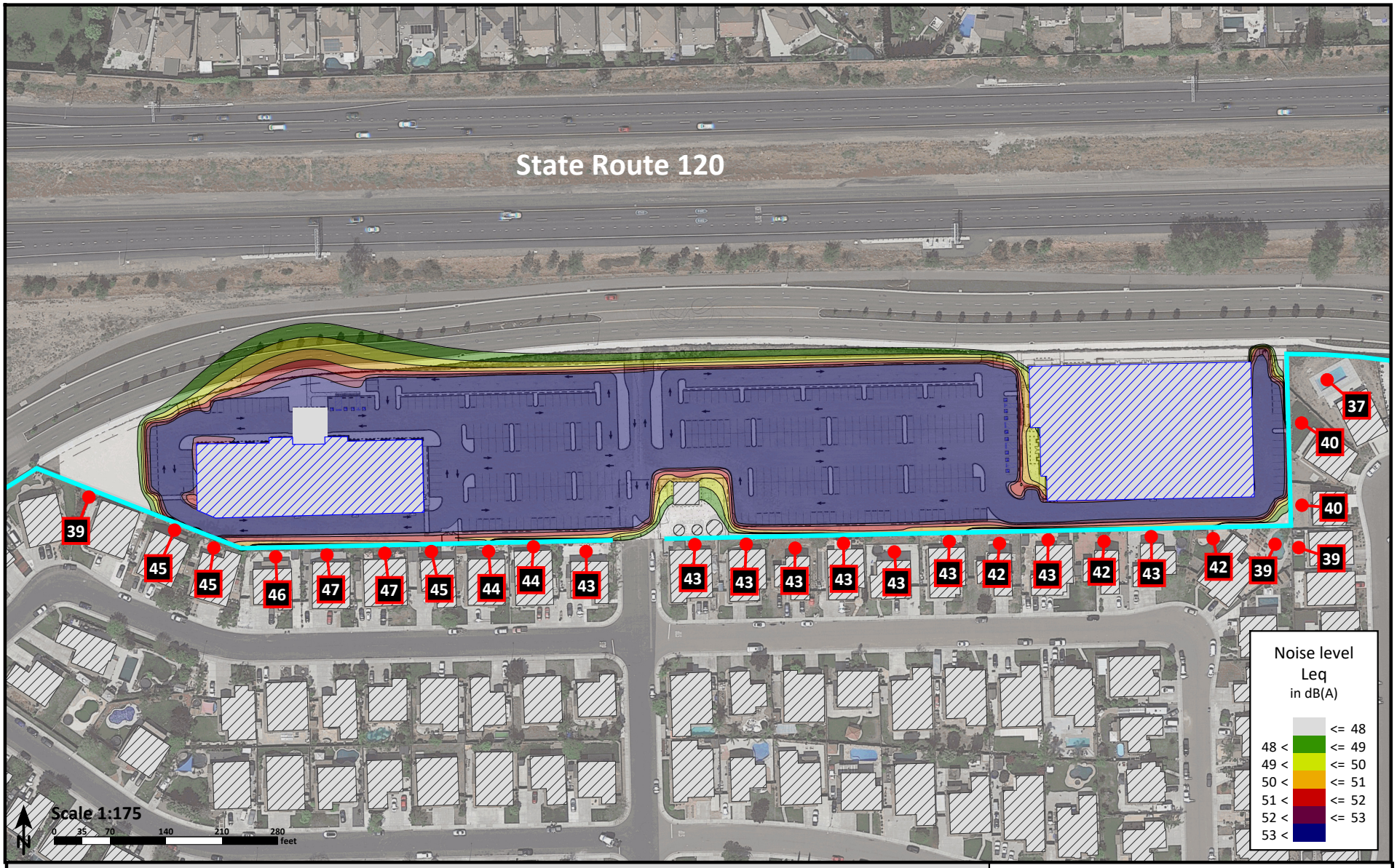
Saxelby Acoustics used the SoundPLAN noise prediction model. Inputs to the model included sound power levels for the proposed amenities, existing and proposed buildings, terrain type, and locations of sensitive receptors. These predictions are made in accordance with International Organization for Standardization (ISO) standard 9613-2:1996 (Acoustics – Attenuation of sound during propagation outdoors). ISO 9613 is

the most commonly used method for calculating exterior noise propagation. **Figure 3** shows the noise level contours resulting from operation of the project.

RESULTS AND ANALYSIS

As shown on **Figure 3**, the proposed project is predicted to generate noise levels of up to 47 dBA L_{eq} during the peak hour of activity at the closest sensitive receptors. Saxelby Acoustics assumes that this could occur during nighttime hours. The City of Manteca imposes a noise level standard of 40 dBA L_{eq} for noises consisting of music during nighttime (10:00 p.m. to 7:00 a.m.) hours. However, the average nighttime ambient noise level at the residential uses to the south due to traffic is 58 dBA L_{eq}. The proposed project noise levels would be less than ambient.

Due to the project's proposed nighttime operation and the potentially disruptive nature of amplified music including potentially high levels of bass, Saxelby Acoustics recommends that the proposed project generate noise levels no greater than 10 dB below the ambient. Project noise levels which are 10 dB below the ambient will not result in an increase in overall noise levels. Therefore, the proposed project shall generate noise levels no greater than 48 dBA L_{eq} at the adjacent residences. As shown in **Figure 3**, the assumed project building construction will achieve this goal and will not result in an increase in noise levels at the existing residences.



Manteca Bowling and Banquet Facility

City of Manteca, California

Figure 3
Operational Noise (dBA Leq)

Legend

- Project Site
- Project Building
- Existing Building
- Noise Level

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Acoustics · Noise · Vibration

CONCLUSIONS

Saxelby Acoustics determined that the proposed project will generate noise levels which are more than 10 dBA below existing ambient noise levels at the closest residences, resulting in a 0 dB increase in average sound levels. These conclusions are based on the following assumptions:

- Interior noise levels will be kept to no more than 90 dBA/110 dBC L_{eq} as measured using fast response, 1-minute time averaging.
- The exterior wall assembly shall consist of one of the following assemblies:
    - 3-coat stucco, OSB shear layer, staggered wood stud framing, batt insulation, and two layers of 5/8" type "X" gypsum board, or a similar assembly with an STC rating of at least 61.
    - 6” Minimum tilt-up concrete panels or similar assembly with an STC rating of at least 55.
- Ceiling construction shall consist of DensDeck Roof Board over a corrugated steel deck, wooden joists, batt insulation, and one layer of type "X" gypsum board, or a similar assembly with an STC rating of 58.

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Appendix A: Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
ASTC	Apparent Sound Transmission Class. Similar to STC but includes sound from flanking paths and correct for room reverberation. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by +5 dBA and nighttime hours weighted by +10 dBA.
DNL	See definition of Ldn.
IIC	Impact Insulation Class. An integer-number rating of how well a building floor attenuates impact sounds, such as footsteps. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
L(n)	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L50 is the sound level exceeded 50% of the time during the one-hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
NIC	Noise Isolation Class. A rating of the noise reduction between two spaces. Similar to STC but includes sound from flanking paths and no correction for room reverberation.
NNIC	Normalized Noise Isolation Class. Similar to NIC but includes a correction for room reverberation.
Noise	Unwanted sound.
NRC	Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.
RT60	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin.
SEL	Sound Exposure Level. SEL is a rating, in decibels, of a discrete event, such as an aircraft flyover or train pass by, that compresses the total sound energy into a one-second event.
SPC	Speech Privacy Class. SPC is a method of rating speech privacy in buildings. It is designed to measure the degree of speech privacy provided by a closed room, indicating the degree to which conversations occurring within are kept private from listeners outside the room.
STC	Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations. The STC rating is typically used to rate the sound transmission of a specific building element when tested in laboratory conditions where flanking paths around the assembly don't exist. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

Appendix B: Continuous Ambient Noise Measurement Results

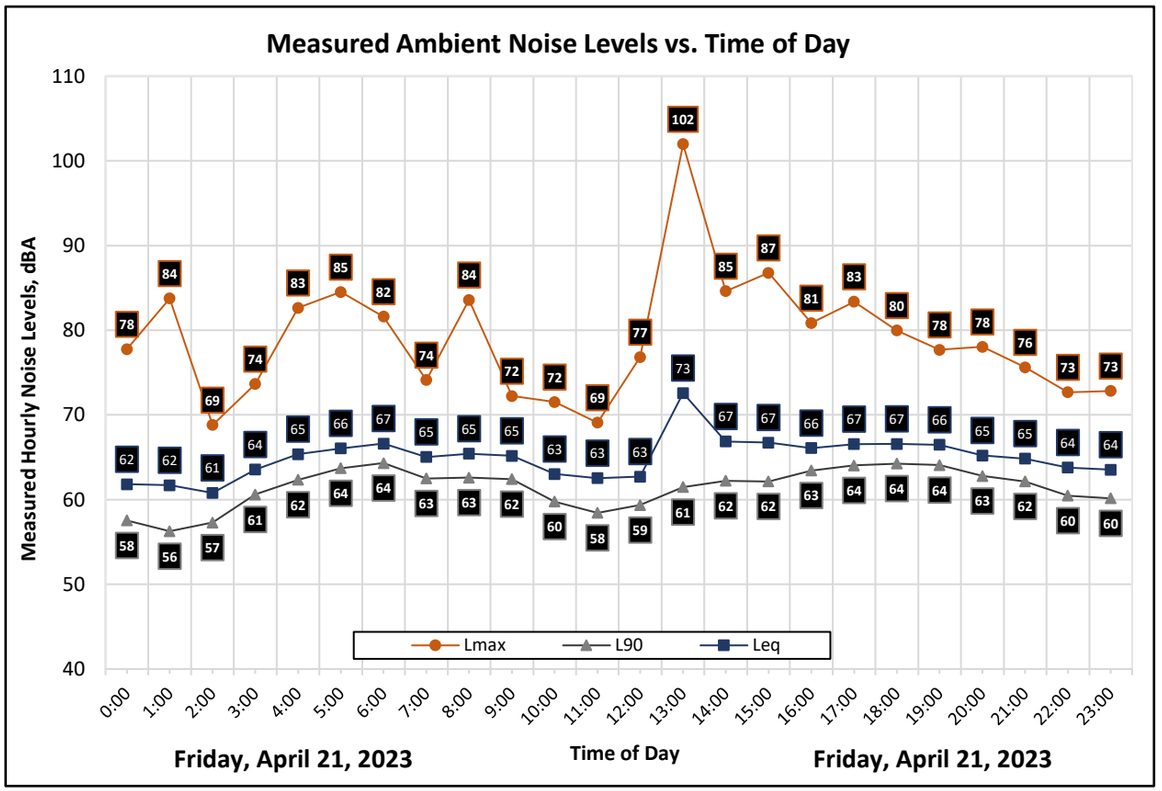


Appendix B1a: Continuous Noise Monitoring Results

Site: LT-1
Project: Manteca Banquet and Bowling Facility
Meter: LDL 820-1
Location: Southern Project Boundary
Calibrator: CAL200
Coordinates: (37.7819825, -121.2444480)

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Friday, April 21, 2023	0:00	62	78	61	58
Friday, April 21, 2023	1:00	62	84	60	56
Friday, April 21, 2023	2:00	61	69	60	57
Friday, April 21, 2023	3:00	64	74	63	61
Friday, April 21, 2023	4:00	65	83	64	62
Friday, April 21, 2023	5:00	66	85	66	64
Friday, April 21, 2023	6:00	67	82	66	64
Friday, April 21, 2023	7:00	65	74	65	63
Friday, April 21, 2023	8:00	65	84	65	63
Friday, April 21, 2023	9:00	65	72	65	62
Friday, April 21, 2023	10:00	63	72	63	60
Friday, April 21, 2023	11:00	63	69	62	58
Friday, April 21, 2023	12:00	63	77	62	59
Friday, April 21, 2023	13:00	73	102	65	61
Friday, April 21, 2023	14:00	67	85	65	62
Friday, April 21, 2023	15:00	67	87	65	62
Friday, April 21, 2023	16:00	66	81	66	63
Friday, April 21, 2023	17:00	67	83	66	64
Friday, April 21, 2023	18:00	67	80	66	64
Friday, April 21, 2023	19:00	66	78	66	64
Friday, April 21, 2023	20:00	65	78	65	63
Friday, April 21, 2023	21:00	65	76	64	62
Friday, April 21, 2023	22:00	64	73	63	60
Friday, April 21, 2023	23:00	64	73	63	60

Statistics	Leq	Lmax	L50	L90
Day Average	67	80	65	62
Night Average	64	78	63	60
Day Low	63	69	62	58
Day High	73	102	66	64
Night Low	61	69	60	56
Night High	67	85	66	64
Ldn	71	Day %		76
CNEL	71	Night %		24



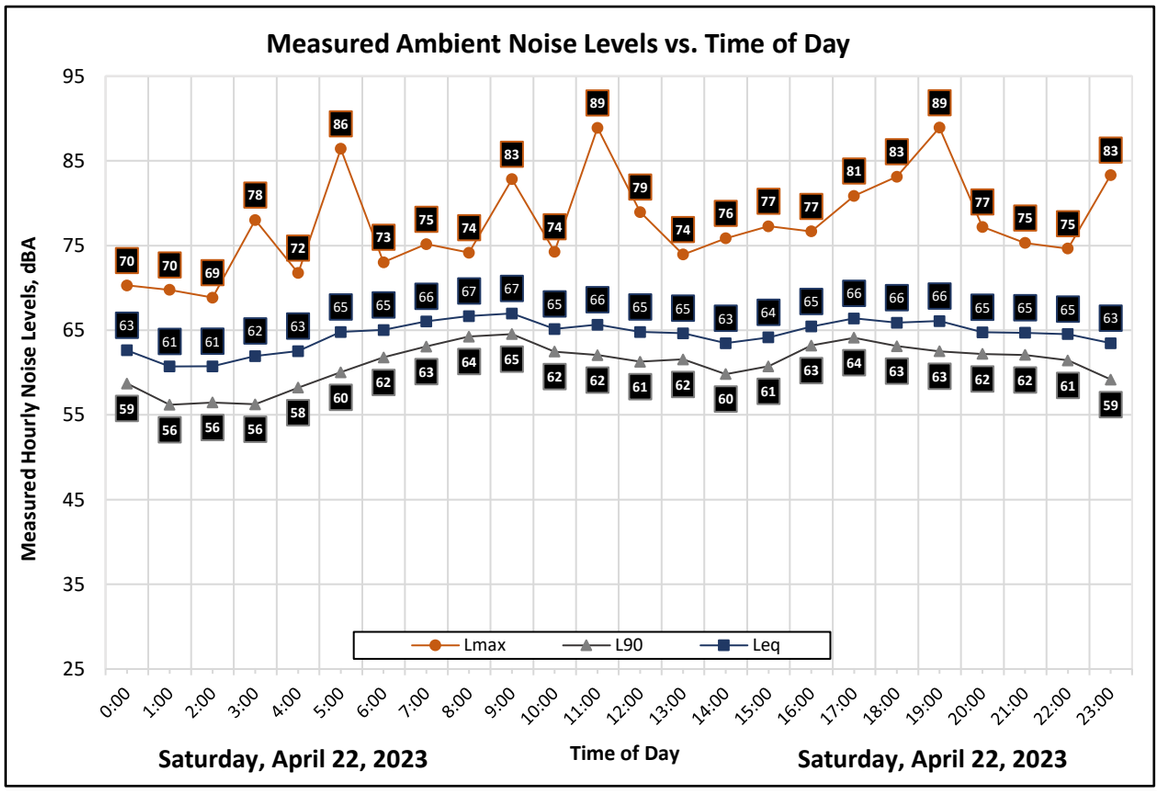


Appendix B1b: Continuous Noise Monitoring Results

Site: LT-1
Project: Manteca Banquet and Bowling Facility
Meter: LDL 820-1
Location: Southern Project Boundary
Calibrator: CAL200
Coordinates: (37.7819825, -121.2444480)

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Saturday, April 22, 2023	0:00	63	70	62	59
Saturday, April 22, 2023	1:00	61	70	60	56
Saturday, April 22, 2023	2:00	61	69	60	56
Saturday, April 22, 2023	3:00	62	78	61	56
Saturday, April 22, 2023	4:00	63	72	62	58
Saturday, April 22, 2023	5:00	65	86	63	60
Saturday, April 22, 2023	6:00	65	73	65	62
Saturday, April 22, 2023	7:00	66	75	66	63
Saturday, April 22, 2023	8:00	67	74	66	64
Saturday, April 22, 2023	9:00	67	83	66	65
Saturday, April 22, 2023	10:00	65	74	65	62
Saturday, April 22, 2023	11:00	66	89	64	62
Saturday, April 22, 2023	12:00	65	79	64	61
Saturday, April 22, 2023	13:00	65	74	64	62
Saturday, April 22, 2023	14:00	63	76	63	60
Saturday, April 22, 2023	15:00	64	77	64	61
Saturday, April 22, 2023	16:00	65	77	65	63
Saturday, April 22, 2023	17:00	66	81	66	64
Saturday, April 22, 2023	18:00	66	83	65	63
Saturday, April 22, 2023	19:00	66	89	65	63
Saturday, April 22, 2023	20:00	65	77	64	62
Saturday, April 22, 2023	21:00	65	75	64	62
Saturday, April 22, 2023	22:00	65	75	64	61
Saturday, April 22, 2023	23:00	63	83	62	59

Statistics	Leq	Lmax	L50	L90
Day Average	65	79	65	62
Night Average	63	75	62	59
Day Low	63	74	63	60
Day High	67	89	66	65
Night Low	61	69	60	56
Night High	65	86	65	62
Ldn	69	Day %		77
CNEL	70	Night %		23



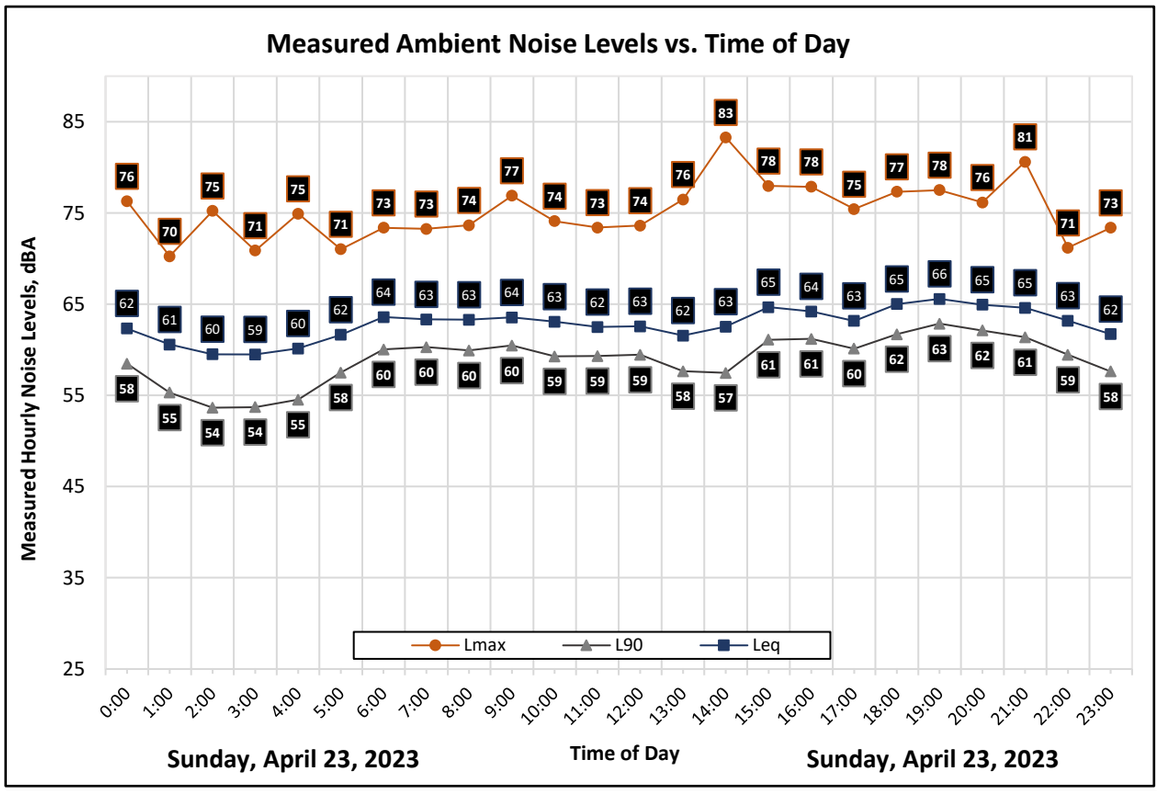


Appendix B1c: Continuous Noise Monitoring Results

Site: LT-1
Project: Manteca Banquet and Bowling Facility
Meter: LDL 820-1
Location: Southern Project Boundary
Calibrator: CAL200
Coordinates: (37.7819825, -121.2444480)

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Sunday, April 23, 2023	0:00	62	76	62	58
Sunday, April 23, 2023	1:00	61	70	60	55
Sunday, April 23, 2023	2:00	60	75	58	54
Sunday, April 23, 2023	3:00	59	71	58	54
Sunday, April 23, 2023	4:00	60	75	59	55
Sunday, April 23, 2023	5:00	62	71	61	58
Sunday, April 23, 2023	6:00	64	73	63	60
Sunday, April 23, 2023	7:00	63	73	63	60
Sunday, April 23, 2023	8:00	63	74	63	60
Sunday, April 23, 2023	9:00	64	77	63	60
Sunday, April 23, 2023	10:00	63	74	62	59
Sunday, April 23, 2023	11:00	62	73	62	59
Sunday, April 23, 2023	12:00	63	74	62	59
Sunday, April 23, 2023	13:00	62	76	61	58
Sunday, April 23, 2023	14:00	63	83	61	57
Sunday, April 23, 2023	15:00	65	78	64	61
Sunday, April 23, 2023	16:00	64	78	64	61
Sunday, April 23, 2023	17:00	63	75	63	60
Sunday, April 23, 2023	18:00	65	77	64	62
Sunday, April 23, 2023	19:00	66	78	65	63
Sunday, April 23, 2023	20:00	65	76	65	62
Sunday, April 23, 2023	21:00	65	81	64	61
Sunday, April 23, 2023	22:00	63	71	63	59
Sunday, April 23, 2023	23:00	62	73	61	58

Statistics	Leq	Lmax	L50	L90
Day Average	64	77	63	60
Night Average	61	73	61	57
Day Low	62	73	61	57
Day High	66	83	65	63
Night Low	59	70	58	54
Night High	64	76	63	60
Ldn	68	Day %		77
CNEL	68	Night %		23



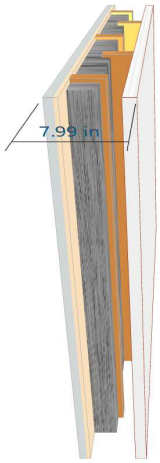


Appendix C: INSUL Calculations of Wall and Roof Assemblies

Sound Insulation Prediction (v9.0.24)

Program copyright Marshall Day Acoustics 2017
Margin of error is generally within STC ±3 dB
Saxelby Acoustics - Key No. 4859
Job Name:
Job No.: Initials:19169
Date:4/21/2023
File Name:insul

Notes:



STC 61
OITC 51

Mass-air-mass resonant frequency = =36 Hz

Panel Size = 8.9 ft x 13.1 ft

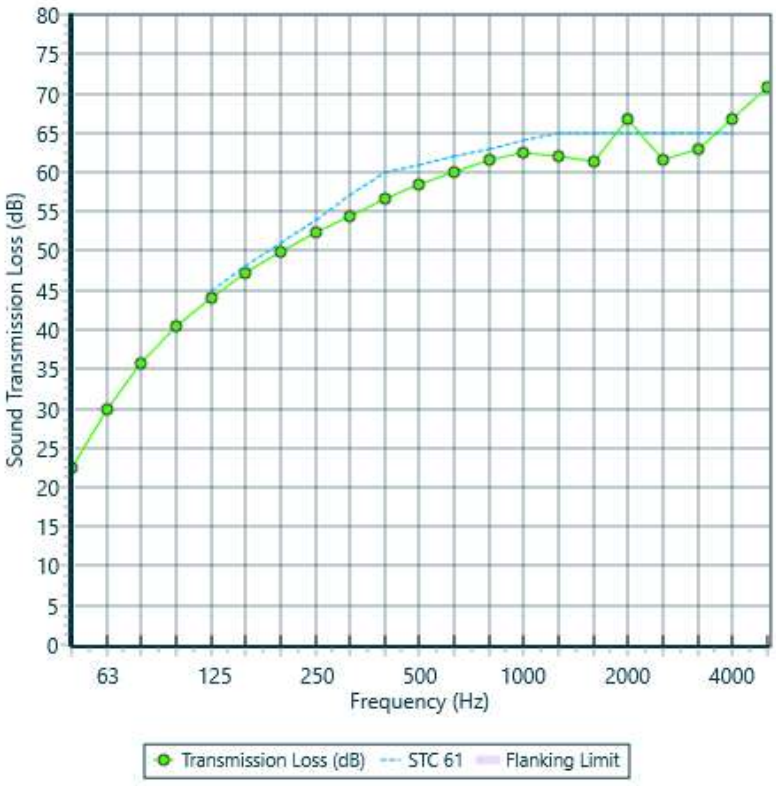
Partition surface mass = 13.8 lb/ft2

System description

Panel 1 : 1 x 0.866 in Stucco + 1 x 0.4 in OSB (Oriented Strand Board)

Frame: Staggered Stud (3.5 in x 1.8 in), Stud spacing 24 in ; Cavity Width 5.47 in , 1 x fiberglass (0.6 lb/ft3) Thickness 3.0 in
Panel 2 : 2 x 0.626 in Type X Gypsum Board

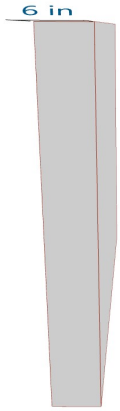
freq.(Hz)	TL(dB)	TL(dB)
50	23	
63	30	26
80	36	
100	40	
125	44	43
160	47	
200	50	
250	52	52
315	54	
400	57	
500	58	58
630	60	
800	62	
1000	62	62
1250	62	
1600	61	
2000	67	63
2500	62	
3150	63	
4000	67	66
5000	71	



Sound Insulation Prediction (v9.0.23)

Program copyright Marshall Day Acoustics 2017
Margin of error is generally within STC ±3 dB
Saxelby Acoustics - Key No. 4859
Job Name:
Job No.: Initials:Luke
Date:1/24/2024
File Name:

Notes:



STC 55
OITC 49

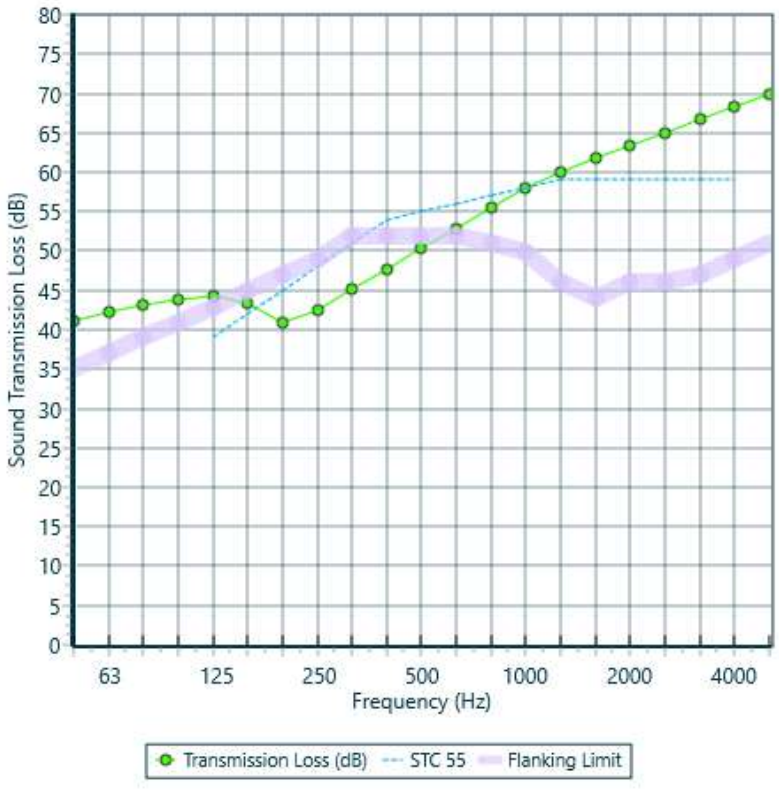
Panel Size = 8.9 ft x 13.1 ft

Partition surface mass = 73 lb/ft2

System description

Panel 1 : 1 x 6 in Concrete

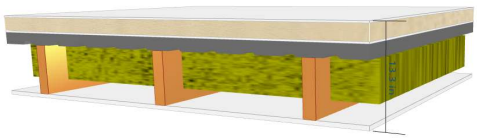
freq.(Hz)	TL(dB)	TL(dB)
50	41	
63	42	42
80	43	
100	44	
125	44	44
160	43	
200	41	
250	43	42
315	45	
400	48	
500	50	50
630	53	
800	55	
1000	58	57
1250	60	
1600	62	
2000	63	63
2500	65	
3150	67	
4000	68	68
5000	70	



Sound Insulation Prediction (v9.0.23)

Program copyright Marshall Day Acoustics 2017
Margin of error is generally within STC ±3 dB
Saxelby Acoustics - Key No. 4859
Job Name:
Job No.: Initials:Luke
Date:4/19/2023
File Name:STC 58 Roof.ixl

Notes:



STC 58
OITC 40

Mass-air-mass resonant frequency = =36 Hz

Panel Size = 8.9 ft x 13.1 ft

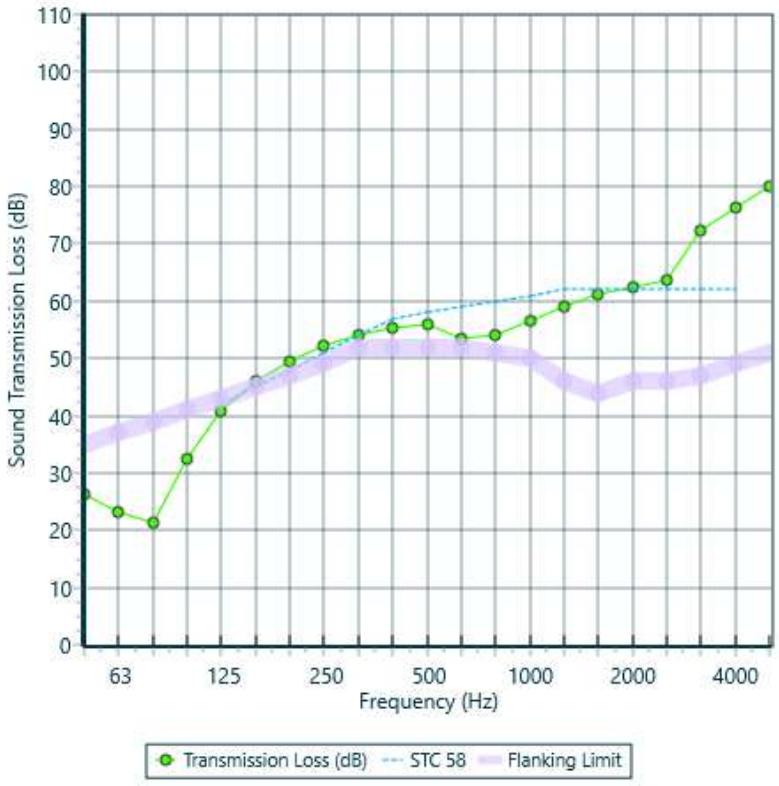
Partition surface mass = 28.5 lb/ft2

System description

Panel 1 : 1 x 2.744 in DensDeck Roof Board-Polyiso-DensDeck Roof Boa
+ 1 x 1.969 in Corrugated Steel Deck

Frame: Solid Joist (8 in x 1.8 in), Stud spacing 24 in ; Cavity Width 8.01 in , 1 x Fibreglass (10kg/m3) Thickness 6.0 in
Panel 2 : 1 x 0.626 in Type X Gypsum Board

freq.(Hz)	TL(dB)	TL(dB)
50	26	
63	23	23
80	21	
100	32	
125	41	36
160	46	
200	50	
250	52	52
315	54	
400	55	
500	56	55
630	53	
800	54	
1000	57	56
1250	59	
1600	61	
2000	63	62
2500	64	
3150	72	
4000	76	75
5000	80	



APPENDIX C: TRAFFIC STUDY

4.1 Project Trip Generation

Because the project would consist of several specialty uses, trip generation estimates were prepared using a combination of empirical data from similar land uses and the *Trip Generation Manual, 11th Edition* (Institute of Transportation Engineers, 2021).

To estimate the trip generation of the family entertainment center (FEC) project component, traffic counts were collected at an FEC owned by the same project applicant (R5 Group) in Turlock in late April 2023. The proposed facility would be 25% larger than the existing Turlock FEC, so a factor of 1.25 was applied to the observed trips at the Turlock FEC. This estimate is similar to average trip rates in the Trip Generation Manual, 11th Edition (ITE, 2021)[1]. See traffic count information from the Turlock FEC in **Appendix A.**

For the conference center project component, activities during the typical weekday peak hours would usually consist of business/professional events, marketing events, fundraisers, and related activities. Past studies have shown that special events such as weddings, concerts, and sporting events have average vehicle occupancies of 2.5 to 3.5 persons per vehicles. However, given the types of attendees expected at weekday conference center events, this study uses an average of 1.2 persons per vehicle.

Because the City of Manteca is concerned with the weekday peak hours of travel for a maximum capacity event, this study uses the following characteristics to estimate the weekday conference center trip generation:

- The conference center is assumed to accommodate business/professional activities that would fully occupy the capacity of the event center (800 attendees).
- Some conference attendees would arrive or depart outside the peak hours of travel due to different travel arrangements, participation in earlier or later meetings, etc. To account for this typical conference behavior, it is estimated that 75% of conference attendees would arrive at the facility during the AM peak hour and 80% of conference attendees would depart the facility during the PM peak hour. These arrival and departure percentages are derived from empirical data previously collected by Fehr & Peers at comparable event venues.
- Average vehicle occupancy for external trips would be 1.2 persons per vehicle.
- All staff for conference center activities would arrive prior to guests, and depart after guests (i.e., outside of the study peak hours).
- 5% of conference attendees would be dropped off and picked up by non-attendees.

Table 1 presents the estimated AM and PM peak hour vehicle trips that would be generated by the proposed project during the scenario described above.

[1] For a 40-lane bowling alley, ITE Trip Generation Manual average rate results in 34 in trips, 18 out trips, and 52 total trips during the PM peak hour.

Table 1: Project Trip Generation

Land Use Type	Details & Quantity	AM Peak Hour Trips			PM Peak Hour Trips		
		In	Out	Total	In	Out	Total
Family Entertainment Center [1]	40 bowling lanes 12 20-seat banquet rooms 6,000 sq. ft. arcade 6,500 sq. ft. restaurant 400 sq. ft. Pro Shop **82,000 sq. ft. total**	5	5	10	45	13	58
Conference Center/ Banquet Hall [2]	Three 200-person capacity rooms and two 100-person capacity rooms 16,400 sq. ft. of assembly space **54,090 sq. ft. total**	505	30	535	32	538	570
	Gross Trips	**510**	**35**	**545**	**77**	**551**	**628**

Notes:

1. PM peak hour trip generation estimate is based on traffic counts collected at a family entertainment center in Turlock. AM peak hour trip generation estimate accounts for deliveries and other miscellaneous activities, despite the FEC being closed to the public in the morning.
2. Assuming full capacity (800 attendees); 75% of attendees arrive during the AM peak hour and 80% of attendees would depart during the PM peak hour; average vehicle occupancy of 1.2 persons per vehicle; 5% of conference attendees would be dropped off and picked up.

Source: Fehr & Peers, 2022

The trip generation totals in Table 3 are considered conservative, as the project applicant estimates that only six weekday events per year would surpass 50% capacity, or 400 attendees. Most weekday meetings would be small- to medium-sized, with off-peak activity. Typically, highest occupancy would be during weddings or other large social gatherings on weekends. Since this maximum occupancy weekday event scenario is being analyzed in this study, it represents a worst-case assessment of the potential transportation effects of the proposed project.

Total project trip generation would be heavily influenced by the timing and size of events using the conference center project component. Under this maximum capacity event scenario, the conference center project component would represent the vast majority of total project trips (over 90% of total peak hour trips).

Table 4 shows the average weekday project trip generation for the conference center project component, estimated using data provided by the project applicant. The data provided is based on the applicant's experience running similar facilities in the Central Valley. Typical event conditions would yield significantly fewer trips compared to the maximum attendance scenario analyzed in this study.

Table 2: Annualized Average Weekday Project Trip Generation

Activity	Attendance Per Event	Annual Weekday Occurrences	Annualized Average Weekday Vehicle Trips
Banquet Hall/Conference Center			
Small Meetings	30	96	18
Medium Meetings	75	75	36
Large Meeting/Small Conference	200	18	23
Medium Conference	400	3	8
Large Conference	600	3	12
Small Friday Wedding/Party	100	40	10
Large Friday Wedding/Party	250	40	26
		Subtotal	**132**
Family Entertainment Center			
Monday – Thursday Occupancy	166	208	111
Friday Occupancy	339	52	226
		Subtotal	**134**
		Total Annualized Average Weekday Project Traffic	**266**

Note: Annualized average weekday traffic estimated through calculating total trips occurring on weekdays in a calendar year and dividing by number of weekdays in a year. Calculation does not include employee or delivery trips. See full calculations, including average automobile occupancy, in Appendix C.
Source: Fehr & Peers; Rod Scott, 2023.

8. Vehicle Miles Traveled Screening Analysis

This Section describes the screening analysis performed to determine if the project qualifies to be relieved of performing a complete vehicle miles traveled (VMT) impact analysis.

8.1 Applicable Policies and Guidelines

Senate Bill 743

Senate Bill (SB) 743 was signed into law in 2013 and led to the addition of Section 15064.3, Determining the Significance of Transportation Impacts, to the CEQA Guidelines. Per the new section, "Generally, vehicle miles traveled is the most appropriate measure of transportation impacts. For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project."

Applicable Policies for Evaluating Transportation Impacts in CEQA

The City of Manteca adopted an *SB 743 Implementation Policy* in September 2022. The *SB 743 Implementation Policy* includes a list of projects with transportation VMT impacts that are presumed to be less-than-significant, and therefore may be relieved of performing a detailed VMT impact analysis. Consistent with the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (California Office of Planning & Research, December 2018),[2] the Manteca *SB 743 Implementation Policy* includes screening criteria for small projects and local-serving retail, as explained below.

> **Small Projects:** Projects consistent with the City's General Plan can be screened if the project would generate fewer than 1,000 average daily trips (ADT). Projects not consistent with the City's General Plan can be screened if the project would generate fewer than 500 ADT. This threshold was developed using the California Emissions Estimator Model (CalEEMod) and GHG emissions threshold of 3,000 metric tons.
>
> **Local Serving Retail**: Retail shopping centers 125,000 square feet or less are exempt from further VMT analysis. The *OPR Technical Advisory* states that, "By adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT. Thus, lead agencies generally may presume such development creates a less-than-significant transportation impact. Where such development decreases VMT, lead agencies should consider the impact to be less-than-significant.

The OPR Advisory also states that "Because lead agencies will best understand their own communities and the likely travel behaviors of future project users, they are likely in the best position to decide when a

[2] http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

project will likely be local-serving." Generally, decisions should support the state's statutory intent in "the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses."

8.2 Project VMT Screening Analysis

Under the City of Manteca's definition, the proposed project would be a "small project" because it is consistent with the City's General Plan land use and would produce fewer than 1,000 daily trips when considered on an annualized basis. As seen in Table 4, the project would generate an estimated 237 vehicle trips during a typical weekday (annualized average), well under the 1,000 daily trip threshold.

The FEC component may also be defined as "local-serving," as it improves destination proximity to similar land use types. The proposed conference center/banquet hall uses would likely redistribute trips rather than creating new trips. Demand for these services is relatively fixed, with event organizers deciding a venue based on convenience, quality, and/or offered services. Improving destination proximity would shorten trips and reduce VMT. The project also provides a diversity of land use in the otherwise residential area south of SR 120.

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