



DRAFT EIR

FOR THE

LUMINA AT MACHADO RANCH

OCTOBER 8, 2021

Prepared for:

City of Manteca
Development Services
1215 W. Center Street, Suite 201
Manteca, CA 95337
(209) 456-8500

Prepared by:

De Novo Planning Group
1020 Suncastr Lane, Suite 106
El Dorado Hills, CA 95762
(916) 580-9818

D e N o v o P l a n n i n g G r o u p

A Land Use Planning, Design, and Environmental Firm



DRAFT EIR
FOR THE
LUMINA AT MACHADO RANCH

OCTOBER 8, 2021

Prepared for:

City of Manteca
Development Services
1215 W. Center Street, Suite 201
Manteca, CA 95337
(209) 456-8500

Prepared by:

De Novo Planning Group
1020 Suncoast Lane, Suite 106
El Dorado Hills, CA 95762
(916) 580-9818

INTRODUCTION

The City of Manteca, as the lead agency, determined that the proposed Lumina at Machado Ranch Project (proposed Project) is a "project" within the definition of CEQA. CEQA requires the preparation of an environmental impact report (EIR) prior to approving any project, which may have a significant impact on the environment. For the purposes of CEQA, the term "project" refers to the whole of an action, which has the potential for resulting in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378[a]).

The EIR contains a description of the Project, description of the environmental setting, identification of Project impacts, and mitigation measures for impacts found to be significant, as well as an analysis of Project alternatives, identification of significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. This EIR identifies issues determined to have no impact or a less than significant impact, and provides detailed analysis of potentially significant and significant impacts. Comments received in response to the Notice of Preparation (NOP) were considered in preparing the analysis in this EIR.

PROJECT DESCRIPTION

The Project site is located in the southwestern portion of the City of Manteca, immediately south of the city limit lines. The Project site is immediately southwest of the intersection of Airport Way and Woodward Avenue. The Project site is bounded on the north by Woodward Avenue and an existing single-family residential subdivision, on the east by Airport Way, on the south by an existing Reclamation District #2094 (RD2094) dry levee and existing agricultural fields, and on the west by the existing single-family residential subdivisions.

The Project site includes several distinct planning boundaries defined below. The following terms are used throughout this DEIR to describe the planning area boundaries within the Project site:

- Project Site (or Annexation Area) – includes the whole of the project, including the proposed 161.19-acre Development Area, 19.11-acre Non-development Area on 15 inhabited residential lots, and 3.16 acres of existing right-of-way.
- Development Area - includes a 161.19-acre parcel (APN 241-32-018 and dedication areas along Woodward Avenue and Airport Way) that is intended for the development of up to 827 residential units, two parks, and public infrastructure.
- Non-development Area 1 - includes six 1.0 acre lots with existing residential homes. Access to these homes is directly onto Woodward Avenue.
- Non-development Area 2 - includes nine lots ranging in size from 1.3 to 1.8 acres totaling 13.11 acres with existing residential homes. Access to three of these homes is directly onto Woodward Avenue, five are onto Airport Way, and one has access onto both Woodward Avenue and Airport Way.

- Right-of-Way Annexation Area - includes 3.16 acres of remaining right-of-way outside of areas of dedication owned by San Joaquin County and intended to be annexed into the City of Manteca.

The Lumina at Machado Ranch Project (hereinafter referred to as the “proposed Project”) consists of the Annexation of 16 APNs totaling 183.46 acres. This includes the Development Area (161.19 acre parcel, APN 241-32-018 and adjacent dedications), Non-development Area 1 (an inhabited annexation of 6 parcels on 6 acres), Non-development Area 2 (an inhabited annexation of 9 parcels on 13.11 acres), and the remaining Right-of-Way Annexation Area (3.16 acres of existing County right-of-way). The annexation will also include detachment from the Lathrop Manteca Fire District.

The proposed Project also includes a Tentative Subdivision Map for the Development Area that would be divided into four phases on a single tentative subdivision map. The tentative subdivision map would result in the subdivision of 161.19 acres into 827 residential lots (100.46 acres), a centralized park totaling 10.87 acres (Lot F), plus 1.28 acres of levee access and pocket park (Lot G). Total parkland is 12.15 acres. Open space is also provided in the form of frontage landscaping strips and a well site (Lots A, B, C, D, I, L, M and N - 38,864 sf frontage landscaping, and Lot J – 28,049 sf for a well site and frontage landscaping). The proposed Project anticipates a Development Agreement that will be negotiated between the City and Applicant.

The proposed Project would require a General Plan Land Use Amendment to adjust the exact location and shape of the Park land use designation within the Development Area. It is noted that the City is undergoing an Update to the General Plan, and there is a proposed Land Use policy (policy LU-1.5) that allows flexibility to relocate land uses that are on contiguous properties and are included in a single development application as long as it does not result in incompatibilities with adjacent or nearby land uses or designations. Were this policy approved at this time it would apply to the proposed Project, and there would be no need for a General Plan Amendment.

No changes are proposed for the Non-development Area 1. It is noted that the General Plan Update proposes changes to the land use in Non-development Area 2, and the proposed Land Uses under this General Plan Amendment are consistent with the General Plan Update.

The proposed Project is currently outside of the jurisdiction of the City of Manteca and therefore does not have a zoning designation. The proposed Project includes a request for pre-zoning of the Development Area, Non-development Area 1, and Non-development Area 2.

AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

This Draft EIR addresses environmental impacts associated with the proposed Project that are known to the City of Manteca, were raised during the NOP process, or raised during preparation of the Draft EIR. This Draft EIR discusses impacts associated with aesthetics and visual resources, agricultural resources, air quality, biological resources, biological resources, cultural and tribal resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use planning, noise, public services, traffic, utilities, and wildfire.

The following are topics of public concern or potential controversy that have become known to the City staff based on public input, known regional issues, and staff observations:

- Project impacts on regional stormwater, drainage, groundwater, and water quality;
- Short-term and long-term flood water, stormwater, and wastewater drainage and other hydrology-related backwater impacts on rural areas of south Manteca due to Project implementation, specifically the drainage areas in and along Walthall Slough and the South San Joaquin Irrigation District (SSJID) canals and pipelines;
- Flood and drainage impacts due to SB5 200-year levee modification/alignment;
- Climate change impacts related to potential volumes of channel flows expected to be in and along the South Delta Lower San Joaquin River System;
- Contaminated on-site soils due to the Project site's close proximity to roadways and historical past uses (i.e., agricultural);
- Demolition of on-site buildings or structures potentially containing lead-based paints, mercury, asbestos containing materials, and polychlorinated biphenyl caulk;
- Increased traffic on project area roadways including Woodward Avenue and Airport Way, and State highway facilities; and
- Annexation of the existing residences located in the Non-development Areas.

ALTERNATIVES TO THE PROPOSED PROJECT

The CEQA Guidelines require an EIR to describe a reasonable range of alternatives to the Project or to the location of the Project which would reduce or avoid significant impacts, and which could feasibly accomplish the basic objectives of the proposed Project. Three alternatives to the proposed Project were developed based on input from City staff and the technical analysis performed to identify the environmental effects of the proposed Project. The alternatives analyzed in this EIR include the following three alternatives in addition to the proposed Project.

- **No Project (No Build) Alternative:** Under this alternative, development of the Project site would not occur, and the Project site would remain in its current existing condition.
- **Increased Density Alternative:** Under this alternative, the proposed Project would be developed with the same amenities as described in the Project Description, but the density of the residential uses would be increased.
- **Agriculture Protection Alternative:** Under this alternative, the proposed Project would be developed in such a way to protect those lands currently identified as prime farmland and farmland of statewide importance, by reducing the overall footprint of the developed areas to a greater extent than the Increased Density Alternative.

Alternatives are described in detail in Chapter 5. Table ES-1 provides a comparison of the alternatives using a qualitative matrix that compares each alternative relative to the other Project alternatives.

TABLE ES-1: COMPARISON OF ALTERNATIVE PROJECT IMPACTS TO THE PROPOSED PROJECT

ENVIRONMENTAL ISSUE	NO PROJECT (NO BUILD) ALTERNATIVE	INCREASED DENSITY ALTERNATIVE	AGRICULTURE PROTECTION ALTERNATIVE
Aesthetics and Visual Resources	Less (Best)	Less (3rd Best)	Less (2nd Best)
Agricultural Resources	Less (Best)	Equal (3rd Best)	Less (2nd Best)
Air Quality	Less (Best)	Equal (3rd Best)	Less (2nd Best)
Biological Resources	Less (Best)	Less (3rd Best)	Less (2nd Best)
Cultural and Tribal Resources	Less (Best)	Equal (3rd Best)	Less (2nd Best)
Geology and Soils	Less (Best)	Equal (3rd Best)	Less (2nd Best)
Greenhouse Gases, Climate Change and Energy	Less (Best)	Equal (3rd Best)	Less (2nd Best)
Hazards and Hazardous Materials	Less (Best)	Equal (3rd Best)	Less (2nd Best)
Hydrology and Water Quality	Less (Best)	Less (3rd Best)	Less (2nd Best)
Land Use, Population, and Housing	Less (Best)	Equal (3rd Best)	Less (2nd Best)
Noise	Less (Best)	Equal (3rd Best)	Less (2nd Best)
Public Services and Recreation	Less (Best)	Less (3rd Best)	Less (2nd Best)
Transportation and Circulation	Less (Best)	Equal (3rd Best)	Less (2nd Best)
Utilities	Less (Best)	Equal (3rd Best)	Less (2nd Best)
Wildfire	Less (Best)	Equal (3rd Best)	Less (2nd Best)

GREATER = GREATER IMPACT THAN THAT OF THE PROPOSED PROJECT

LESS = LESS IMPACT THAN THAT OF THE PROPOSED PROJECT

EQUAL = NO SUBSTANTIAL CHANGE IN IMPACT FROM THAT OF THE PROPOSED PROJECT

As Table ES-1 presents a comparison of the alternative Project impacts with those of the proposed Project. As shown in the table, the No Project (No Build) Alternative is the environmentally superior alternative. However, as required by CEQA, when the No Project (No Build) Alternative is the environmentally superior alternative, the environmentally superior alternative among the others must be identified. Therefore, the Agricultural Protection Alternative would be the environmentally superior alternative because all environmental issues would have reduced impacts compared to the Project. It is noted that neither the Agricultural Protection Alternative nor the Increased Density Alternative fully meet all of the Project objectives.

SUMMARY OF IMPACTS AND MITIGATION MEASURES

In accordance with the CEQA Guidelines, this EIR focuses on the significant effects on the environment. The CEQA Guidelines defines a significant effect as a substantial adverse change in the physical conditions which exist in the area affected by the proposed Project. A less than significant effect is one in which there is no long or short-term significant adverse change in environmental conditions. Some impacts are reduced to a less than significant level with the implementation of mitigation measures and/or compliance with regulations.

The environmental impacts of the proposed Project, the impact level of significance prior to mitigation, the proposed mitigation measures and/or adopted policies and standard measures that are already in place to mitigate an impact, and the impact level of significance after mitigation are summarized in Table ES-2.

TABLE ES-2: PROJECT IMPACTS AND PROPOSED MITIGATION MEASURES

<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
AESTHETICS AND VISUAL RESOURCES			
Impact 3.1-1: Project implementation may result in substantial adverse effects on scenic vistas and resources or substantial degradation of visual character.	SU	<i>None feasible.</i>	SU
Impact 3.1-2: Project implementation may substantially damage scenic resources within a State Scenic Highway.	LS	<i>None required.</i>	--
Impact 3.1-3: Project implementation may result in light and glare impacts.	PS	<i>Conditions of Approval will require compliance with the Development Standards for lighting, landscaping, and building design, which would collectively minimize the visual impacts to the greatest extent feasible as the site transitions from agricultural to urban/suburban uses.</i>	LS
AGRICULTURAL RESOURCES			
Impact 3.2-1: The proposed Project has the potential to result in the conversion of Farmlands, including Prime Farmland and Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses.	SU	Mitigation Measure 3.2-1: <i>Prior to the issuance of a Grading Permit, the Project applicant shall participate in the City's agricultural mitigation fee program and the SJMSCP by paying the established fees on a per-acre basis for the loss of important farmland. Fees paid toward the City's program shall be used to fund conservation easements on comparable or better agricultural lands to provide compensatory mitigation.</i>	SU
Impact 3.2-2: The proposed Project has the potential to conflict with existing zoning for agricultural use, or Williamson Act Contracts.	LS	<i>None required.</i>	--

CC – cumulatively considerable

PS – potentially significant

LCC – less than cumulatively considerable

B – beneficial impact

LS – less than significant

SU – significant and unavoidable

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
Impact 3.2-3: The proposed Project has the potential to result in conflicts with adjacent agricultural lands or indirectly cause conversion of agricultural lands.	PS	<p>Mitigation Measure 3.2-2: Prior to approval of improvement plans for each phase of the Project, the Project applicant shall demonstrate that the Project site plans include adequate measures to buffer adjacent agricultural uses from urban uses on the Project site and to reduce adverse impacts to neighboring agricultural uses; such measures shall include, but not be limited to:</p> <ul style="list-style-type: none"> - The Project shall provide adequate and secure fencing at the interface of the Project site, or any individual phase of the Project, and adjacent agricultural uses. Said fencing shall be reviewed and approved by the Community Development Department. - The Project shall provide buffers, which may include parking areas, roadways and streets, drainage channels, and landscaped corridors, to buffer adjacent agricultural uses from the Project, including any individual phase of the Project, from proposed urban uses. - The Project shall provide notifications to all operators of uses on the Project site that are adjacent or in the vicinity of existing agricultural land of the City’s Right-to-Farm Ordinance. 	LS
AIR QUALITY			
Impact 3.3-1: Project operation would 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.	SU	<p>Mitigation Measure 3.3-1: Prior to the final discretionary approval of individual phases of development (e.g. the first final map), the Project Proponent shall coordinate with the SJVAPCD to ensure compliance with Rule 9510 for both operational and construction emissions. The intent is that each phase of development would demonstrate that the Project does not exceed the applicable SJVAPCD criteria pollutant thresholds for Project operations or construction. If the SJVAPCD criteria pollutant thresholds is exceeded, the Project applicant shall develop a reasonably feasible off-site mitigation strategy to reduce long-term air quality impacts to below the applicable SJVAPCD thresholds of significance. For example, this may consist of fee payments to the SJVAPCD for their use in funding offsite mitigation strategies. Each off-site mitigation strategy shall be developed with, and approved by, the SJVAPCD and the City of Manteca. Each off-site mitigation strategy is subject to the review and approval of the Air District and the City of Manteca on a phase-by-phase basis, and is intended to be in addition to offsets that are obtained through any on-site mitigation measures. The City of Manteca is required to verify each offsite mitigation</p>	SU

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
		<i>strategy and its associated reductions to ensure that the associated air quality impacts are reduced to the maximum extent feasible (i.e. to below the applicable SJVAPCD thresholds of significance, at minimum).</i>	
Impact 3.3-2: 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.	PS	<p>Mitigation Measure 3.3-2: Prior to the issuance of a Grading Permit for each phase of the Project, the Project Proponent shall prepare and submit a Dust Control Plan that meets all of the applicable requirements of APCD Rule 8021, Section 6.3, for the review and approval of the APCD Air Pollution Control Officer.</p> <p>Mitigation Measure 3.3-3: During all construction activities, the Project Proponent shall implement dust control measures, as required by APCD Rules 8011-8081, to limit Visible Dust Emissions to 20% opacity or less. Dust control measures shall 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.</p> <p>Mitigation Measure 3.3-4: During all construction activities, the Project proponent shall implement the following dust control practices identified in Tables 6-2 and 6-3 of the GAMAQI (2002).</p> <ul style="list-style-type: none"> 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. 	SU

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		<p>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.</p> <p>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.</p> <p>g. Limit traffic speeds on unpaved roads to 5 mph.</p> <p>h. Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.</p> <p>Mitigation Measure 3.3-5: Asphalt paving shall be applied in accordance with APCD Rule 4641, the purpose of which is to limit VOC emissions by restricting the application and manufacturing of certain types of asphalt for paving and maintenance operations. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations. The Project Applicant shall coordinate with the APCD, prior to Project asphalt paving activities, to ensure all Project asphalt paving would comply with this rule. The Project Applicant shall provide the City of Manteca with evidence of consultation with the APCD, including confirmation of compliance with APCD Rule 4641.</p>	
Impact 3.3-3: The proposed Project would not generate carbon monoxide hotspot impacts.	LS	None required.	--
Impact 3.3-4: The proposed Project has the potential for public exposure to toxic air contaminants.	LS	None required.	--
Impact 3.3-5: The proposed Project would not cause exposure to other emissions (such as those leading to odors) adversely affecting a substantial number of people.	LS	None required.	--

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
BIOLOGICAL RESOURCES			
Impact 3.4-1: The proposed Project has the potential to have a direct or indirect effect on special-status invertebrate species.	LS	None required.	--
Impact 3.4-2: The proposed Project has the potential to have direct or indirect effects on special-status reptile and amphibian species.	LS	None required.	--
Impact 3.4-3: The proposed Project has the potential to have direct or indirect effects on special-status bird species.	PS	Mitigation Measure 3.4-1: Prior to commencement of any grading activities, the Project proponent shall seek coverage under the SJMSCP to mitigate for habitat impacts to covered special status species. Coverage involves compensation for habitat impacts on covered species through implementation of incidental take and minimization Measures (ITMMs) and payment of fees for conversion of lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. Obtaining coverage for a Project includes incidental take authorization (permits) under the Endangered Species Act Section 10(a), California Fish and Game Code Section 2081, and the MBTA. Coverage under the SJMSCP would fully mitigate all habitat impacts on covered special-status species.	LS
Impact 3.4-4: The proposed Project has the potential to result in direct or indirect effects on special-status mammal species.	LS	None required.	--
Impact 3.4-5: The proposed Project has the potential for direct or indirect effects on candidate, sensitive, or special-status plant species.	LS	None required.	--
Impact 3.4-6: The proposed Project has the potential to effect protected wetlands and jurisdictional waters.	LS	None required.	--
Impact 3.4-7: The proposed Project has the potential to result in adverse effects on riparian habitat or a sensitive natural community.	LS	None required.	--
Impact 3.4-8: The proposed Project has the potential to result in interference with the	LS	None required.	--

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
movement of native fish or wildlife species or with established wildlife corridors, or impede the use of native wildlife nursery sites.			
Impact 3.4-9: The proposed Project has the potential to conflict with an adopted Habitat Conservation Plan.	LS	<i>None required.</i>	--
Impact 3.4-10: The proposed Project has the potential to conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	LS	<i>None required.</i>	--
CULTURAL AND TRIBAL RESOURCES			
Impact 3.5-1: Project implementation has the potential to cause a substantial adverse change to a significant historical or archaeological resource, as defined in CEQA Guidelines §15064.5	PS	<p>Mitigation Measure 3.5-1: Prior to the initiation of construction activities, a training session for all workers shall be conducted at the site by a qualified archeologist. The training session will provide information on recognition of artifacts, human remains, and cultural deposits to help in the recognition of potential issues.</p> <p>Mitigation Measure 3.5-2: In concurrence with initial grading, a qualified archeologist shall be present to observe the initial land disturbance, and be able to halt work in the immediate vicinity should artifacts, exotic rock, shell or bone are uncovered during the construction. The monitor will document the finding, and determine if additional work is necessary to excavate or remove the artifacts or feature.</p> <p>Mitigation Measure 3.5-3: If any historical resources, cultural resources, including prehistoric or historic artifacts, or other indications of archaeological or paleontological resources, are found during grading and construction activities during any phase of the Project, all work shall be halted immediately within a 200-foot radius of the discovery until an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, has evaluated the find(s).</p> <p>Work shall not continue at the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not</p>	LS

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		<p><i>cultural in origin; or 2) not potentially significant or eligible for listing on the NRHP or CRHR; or 3) not a significant Public Trust Resource.</i></p> <p><i>If Native American resources are identified, a Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required and, if required, shall be retained at the Project applicant's expense.</i></p>	
<p>Impact 3.5-3: Project implementation has the potential to disturb human remains, including those interred outside of formal cemeteries.</p>	<p>PS</p>	<p>Mitigation Measure 3.5-4: <i>If human remains are discovered during the course of construction during any phase of the Project, work shall be halted at the site and at any nearby area reasonably suspected to overlie adjacent human remains until the San Joaquin County Coroner has been informed and has determined that no investigation of the cause of death is required. If the remains are of Native American origin, either of the following steps will be taken:</i></p> <ul style="list-style-type: none"> • <i>The coroner shall contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner shall make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.</i> • <i>The landowner shall retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance when any of the following conditions occurs:</i> <ul style="list-style-type: none"> ○ <i>The Native American Heritage Commission is unable to identify a descendent.</i> ○ <i>The descendant identified fails to make a recommendation.</i> 	<p>LS</p>

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		<ul style="list-style-type: none"> ○ <i>The City of Manteca or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.</i> 	
Impact 3.5-4: Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074, and that is: Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or a resource determined by the lead agency.	LS	None required.	--
GEOLOGY AND SOILS			
Impact 3.6-1: The proposed Project may directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: rupture of a known earthquake fault, strong seismic ground shaking, seismic related ground failure, or landslides.	PS	Mitigation Measure 3.6-1: <i>Prior to issuance of a Grading Permit, a certified geotechnical engineer, or equivalent, shall be retained to perform a final geotechnical evaluation of the soils at a design-level as required by the requirements of the California Building Code Title 24, Part 2, Chapter 18, Section 1803.1.1.2 related to expansive soils and other soil conditions. The evaluation shall be prepared in accordance with the standards and requirements outlined in California Building Code, Title 24, Part 2, Chapter 16, Chapter 17, and Chapter 18, which addresses structural design, tests and inspections, and soils and foundation standards. The final geotechnical evaluation shall include design recommendations to ensure that soil conditions do not pose a threat to the health and safety of people or structures, including threats from liquefaction or lateral spreading. The grading and improvement plans, as well as the storm drainage and building plans for each phase of the Project shall be designed in accordance with the recommendations provided in the final geotechnical evaluation.</i>	LS
Impact 3.6-2: Implementation and construction of the proposed Project may result in substantial soil erosion or the loss of topsoil.	PS	Implement Mitigation Measure 3.9-1.	LS

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
Impact 3.6-3: The proposed project has the potential to be located on a geologic unit or soil that is unstable, or that would become unstable as a result of project implementation, and potentially result in landslide, lateral spreading, subsidence, liquefaction or collapse.	PS	Implement Mitigation Measure 3.6-1.	LS
Impact 3.6-4: The proposed Project has the potential to result in development on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.	PS	Implement Mitigation Measure 3.6-1.	LS
Impact 3.6-5: The proposed Project does not have the potential to 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	LS	None Required.	--
Impact 3.6-6: The proposed Project has the potential to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	PS	<p>Mitigation Measure 3.6-2: If any paleontological resources are found during grading and construction activities of the Project, all work shall be halted immediately within a 200-foot radius of the discovery until a qualified paleontologist has evaluated the find.</p> <p>Work shall not continue at the discovery site until the paleontologist evaluates the find and makes a determination regarding the significance of the resource and identifies recommendations for conservation of the resource, including preserving in place or relocating on the Project site, if feasible, or collecting the resource to the extent feasible and documenting the find with the University of California Museum of Paleontology.</p>	LS
GREENHOUSE GASES, CLIMATE CHANGE AND ENERGY			
Impact 3.7-1: Project implementation would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment to conflict with an	SU	Mitigation Measure 3.7-1: Prior to the approval of individual phases of development (i.e. final maps, improvement plans, site plan review, etc.), the Project applicant(s) shall coordinate with the SJVAPCD to ensure that the Project would not exceed the applicable SJVAPCD greenhouse gas thresholds for Project construction and operations. The intent is	SU

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.		that each phase of development would demonstrate that the Project does not exceed the applicable SJVAPCD greenhouse gas pollutant thresholds for project operations or construction. If the SJVAPCD greenhouse gas pollutant thresholds are exceeded, the project applicant shall develop a reasonably feasible off-site mitigation strategy to reduce long-term air quality impacts to below the applicable SJVAPCD thresholds of significance. For example, this may consist of fee payments to the SJVAPCD for their use in funding offsite mitigation strategies. Each off-site mitigation strategy shall be developed with, and approved by, the SJVAPCD and the City of Manteca. Each off-site mitigation strategy is subject to the review and approval of the Air District and the City of Manteca on a phase-by-phase basis, and is intended to be in addition to offsets that are obtained through any on-site mitigation measures. The City of Manteca is required to verify each offsite mitigation strategy and its associated reductions to ensure that the associated greenhouse gas impacts are reduced to the maximum extent feasible (i.e. to below the applicable SJVAPCD thresholds of significance, at minimum). Examples of off-site mitigation strategies may include (but are not limited to) transportation demand management (TDM) measures and/or financial incentives for project employees to utilize alternative transportation options such as buses, bicycles, or electric vehicles. Measures may be designed in tandem with the mitigation requirements incorporated into Mitigation Measure 3.3-1 (see Section 3.3: Air Quality for further detail).	
Impact 3.7-2: Project implementation would not result in the inefficient, wasteful, or unnecessary use of energy resources.	LS	None required.	--
HAZARDS AND HAZARDOUS MATERIALS			
Impact 3.8-1: Potential to create a significant hazard through the routine transport, use, or disposal of hazardous materials or through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	PS	Mitigation Measure 3.8-1: Prior to the issuance of a Grading Permit, a Soils Management Plan (SMP) shall be submitted and approved by the San Joaquin County Department of Environmental Health. The SMP shall establish management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction. The approved SMP shall be posted and maintained onsite during construction activities and all construction personnel shall acknowledge that they have reviewed and understand the plan.	LS

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		<p>Mitigation Measure 3.8-2: Prior to the issuance of a Grading Permit, the applicant shall hire a licensed well contractor to obtain a well abandonment permit from San Joaquin County Environmental Health Department, and properly abandon the on-site wells, pursuant to review and approval of the City Engineer and the San Joaquin County Environmental Health Department.</p> <p>Mitigation Measure 3.8-3: The applicant shall hire a qualified consultant to perform additional testing prior to the issuance of grading permits or demolition permits for construction activities in the following areas that have been deemed to have potentially hazardous conditions present:</p> <ul style="list-style-type: none"> • The residential units and adjoining structures. • The soils in the area where farming equipment and above ground tanks have been used. <p>The intent of the additional testing is to investigate whether any of the buildings, facilities, or soils contain hazardous materials. If asbestos-containing materials and/or lead are found in the buildings, a Cal-OSHA certified ACBM and lead based paint contractor shall be retained to remove the asbestos-containing materials and lead in accordance with EPA and California Occupational Safety and Health Administration (Cal/OSHA) standards. In addition, all activities (construction or demolition) in the vicinity of these materials shall comply with Cal/OSHA asbestos and lead worker construction standards. The ACBM and lead shall be disposed of properly at an appropriate offsite disposal facility. If surface staining is found on the Project site, a hazardous waste specialist shall be engaged to further assess the stained area.</p> <p>Mitigation Measure 3.8-4: Prior to the issuance of a Grading Permit, evenly distributed soil samples shall be conducted throughout the proposed Project for analysis of pesticides and heavy metals. The samples shall be submitted for laboratory analysis of pesticides and heavy metals per DTSC and EPA protocols. The results of the soil sampling shall be submitted to the San Joaquin County Environmental Health Department. If elevated levels of pesticides or heavy metals are detected during the laboratory analysis of the soils, a soil cleanup and</p>	

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
		<i>remediation plan shall be prepared and implemented prior to the commencement of grading activities.</i>	
Impact 3.8-2: Potential to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	LS	<i>None required.</i>	--
Impact 3.8-3: Potential to result in impacts from being included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.	LS	<i>None required.</i>	--
Impact 3.8-4: Potential for the Project to result in a safety hazards for people residing or working on the project site as a result of public airport or public use airport.	LS	<i>None required.</i>	--
Impact 3.8-5: Potential to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	LS	<i>None required.</i>	--
Impact 3.8-6: Potential to expose people or structures to a risk of loss, injury or death from wildland fires.	LS	<i>None required.</i>	--
HYDROLOGY AND WATER QUALITY			
Impact 3.9-1: The proposed Project has the potential to violate water quality standards or waste discharge requirements during construction.	PS	Mitigation Measure 3.9-1: <i>Prior to clearing, grading, and disturbances to the ground such as stockpiling, or excavation for each phase of the Project, the Project proponent shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit Order 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ). The SWPPP shall be designed with Best Management Practices (BMPs) that the RWQCB has deemed as effective at reducing erosion, controlling sediment, and managing runoff. These include: covering disturbed areas</i>	LS

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		<p>with mulch, temporary seeding, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation, and permanent seeding. Sediment control BMPs, installing silt fences or placing straw wattles below slopes, installing berms and other temporary run-on and runoff diversions. These BMPs are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. Final selection of BMPs will be subject to approval by City of Manteca and the RWQCB. The SWPPP will be kept on site during construction activity and will be made available upon request to representatives of the RWQCB.</p>	
<p>Impact 3.9-2: The proposed Project has the potential to violate water quality standards or waste discharge requirements during operation.</p>	<p>PS</p>	<p>Mitigation Measure 3.9-2: The Project applicant shall implement the following nonstructural BMPs that focus on preventing pollutants from entering stormwater:</p> <ul style="list-style-type: none"> • Pollution Prevention/Good Housekeeping <ul style="list-style-type: none"> ○ Prior to clearing, grading, and disturbances to the ground such as stockpiling, or excavation in each phase of the Project, the Project proponent shall develop a spill response and prevention plan as a component of (1) SWPPPs prepared for construction activities, (2) SWPPPs for facilities subject to the NPDES Stormwater Permit, and (3) spill prevention control and countermeasure plans for qualifying facilities. The spill response and prevention plan shall be implemented during all construction activities. ○ Streets and parking lots in all non-residential portions, including the right-of-way, of the Project site shall be swept at least once every two weeks. • Operation and Maintenance (O&M) of Treatment Controls <ul style="list-style-type: none"> ○ Prior to clearing, grading, and disturbances to the ground such as stockpiling, or excavation in each phase of the Project, the Project proponent shall develop an Operation and Maintenance (O&M) Plan for the storm drainage facilities to ensure long-term performance. The O&M plan shall incorporate the manufacturers’ recommended maintenance procedures and include (1) provisions for debris removal, 	<p>LS</p>

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		<p>(2) guidance for addressing public health or safety issues, and (3) methods and criteria for assessing the efficacy of the storm drainage system. An annual report shall be submitted to the City certifying that maintenance of the facilities was conducted according to the O&M plan.</p> <p>Mitigation Measure 3.9-3: The Project applicant shall implement the following structural BMPs that focus on preventing pollutants from entering stormwater, or alternative BMPs approved by the City of Manteca. Implementation of BMPs apply to all non-residential parcels, including the right-of-way, as appropriate.</p> <ul style="list-style-type: none"> Extended Detention Facilities: Extended detention refers to the facilities proposed for the Project site that would detain and temporarily store stormwater runoff to reduce the peak rates of discharge to the storm drainage system. Detention of stormwater allows particles and other pollutants to settle and thereby potentially reduce concentrations and mass loading of contaminants in the discharge. Grassed Swales: A swale is a vegetated, open channel management practice designed to treat and attenuate stormwater runoff for a specified water quality volume. Stormwater runoff flowing through these channels is treated by being filtered through vegetation in the channel, through a subsoil matrix, and/or through infiltration into the underlying soils. Swales can be used throughout the proposed Project area where feasible in the landscape design to treat parking lot runoff. Proprietary Devices: There are a variety of commercially available stormwater treatment devices designed to remove contaminants from drainage once flows enter the conveyance systems. StormFilter™ units, or equivalent filtration-type systems, and Bioswales are recommended for streets and parking areas. Drop inlet filters should also be used to control drainage runoff water quality. 	
Impact 3.9-3: The proposed Project has the potential to substantially deplete groundwater	LS	None required.	--

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
supplies or interfere substantially with groundwater recharge.			
Impact 3.9-4: The proposed Project has the potential to alter the existing drainage pattern in a manner which would result in substantial erosion, siltation, flooding, or polluted runoff.	LS	None required.	--
Impact 3.9-5 The proposed Project has the potential to otherwise substantially degrade water quality.	LS	Implement Mitigation Measure 3.6-1.	--
Impact 3.9-6 Place housing or structures that would impede/redirect flows within a 100-year, or 200-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.	PS	Mitigation Measure 3.9-3: The Project site is located within the City of Manteca's F-200 zone, which makes it at risk from the 200-year flood. As such, the Project is subject to the Manteca Municipal Code Section 17.30.040 Subsection C which places construction limitations on development proposed in areas that are at risk of flooding under the 200-year storm. The Project applicant shall pay the adopted SB5 fee to go toward SJAFCA's effort to provide urban level of flood protection for the Project site and region. In addition, the Project shall remain consistent with the finding of adequate progress by SJAFCA (the "local flood management agency") on an annual basis.	LS
Impact 3.9-7 The proposed Project has the potential to expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, seiche, tsunami, or mudflow.	LS	None required.	--
LAND USE AND POPULATION			
Impact 3.10-1: The proposed Project would not physically divide an established community.	LS	None required.	--

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
Impact 3.10-2: The proposed Project would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project adopted to avoid or mitigate an environmental effect.	LS	<i>None required.</i>	--
Impact 3.10-3: The proposed Project would not significantly conflict with an applicable habitat conservation plan or natural community conservation plan.	LS	<i>None required.</i>	--
Impact 3.10-4: The proposed Project has the potential to induce substantial population growth in an area.	LS	<i>None required.</i>	--
Impact 3.10-5: The proposed Project has the potential to displace substantial numbers of people or existing housing.	LS	<i>None required.</i>	--
NOISE			
Impact 3.11-1: The proposed Project may generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	PS	<p>Mitigation Measure 3.11-1A: Construction activities shall adhere to the requirements of the City of Manteca Municipal Code with respect to hours of operation. This requirement shall be noted in the improvements plans prior to approval by the City’s Public Works Department.</p> <p>Mitigation Measure 3.11-1B: All equipment shall be fitted with factory equipped mufflers, and in good working order. This requirement shall be noted in the improvements plans prior to approval by the City’s Public Works Department.</p> <p>Mitigation Measure 3.11-2: An 8-foot tall sound wall shall be constructed along the Woodward Avenue and South Airport Way frontages, adjacent to proposed Development Area residential uses, in order to achieve the City’s exterior noise standards. Noise barrier walls shall be constructed of concrete panels, concrete masonry units, earthen berms, or any combination of these materials that achieve the required total height. These requirements shall be included in the improvements plans prior to their approval by the City’s Public Works Department. Figure 3.11-2 shows the recommended sound wall locations.</p>	LS

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		<p>Mitigation Measure 3.11-3: For the first rows of lots on the Development Area site adjacent to the Woodward Avenue or South Airport Way right of way, second floor exterior facades with a view of Woodward Avenue or South Airport Way would need the following noise control measures:</p> <ul style="list-style-type: none"> • Windows shall have a sound transmission class (STC) rating of 32. • Interior gypsum at exterior walls shall be 5/8”; • Ceiling gypsum shall be 5/8”; • Exterior finish shall be stucco, fiber cement lap siding, or system with equivalent weight per square foot; • Mechanical ventilation shall be installed in all residential uses to allow residents to keep doors and windows closed, as desired for acoustical isolation. • As an alternative to the above-listed interior noise control measures, the applicant may provide a detailed analysis of interior noise control measures once building plans become available. The analysis should be prepared by a qualified noise control engineer and shall outline the specific measures required to meet the City of Manteca 45 dB L_{dn} interior noise level standard. <p>Mitigation Measure 3.11-4: To reduce traffic noise increases to less than +1.5 dB, the following roadway segments shall be paved with quiet pavement:</p> <ul style="list-style-type: none"> • Airport Way from Atherton to Woodward Avenue (Includes Non-Development Area 2) • Airport Way South of Woodward Avenue • Woodward Avenue west of Airport Way (includes Non-Development Area 1) <p>The pavement would be required for any portion of roadway passing a noise-sensitive use not protected by an existing sound wall, and for a distance of 100 feet on either side of the sensitive-use. This requirement shall be noted on the Project improvement plans. Approximate pavement locations are shown on Figure 3.11-3.</p>	

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
Impact 3.11-2: The proposed Project would not generate excessive groundborne vibration or groundborne noise levels.	PS	Mitigation Measure 3.11-4: Any compaction required less than twenty-six (26) feet from the adjacent residential structures shall be accomplished by using static drum rollers which use weight instead of vibrations to achieve soil compaction. As an alternative to this requirement, pre-construction crack documentation and construction vibration monitoring could be conducted to ensure that construction vibrations do not cause damage to any adjacent structures.	LS
Impact 3.11-3: 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.	LS	None required.	--
PUBLIC SERVICES AND RECREATION			
Impact 3.12-1: The proposed Project has the potential to require the construction of police department facilities which may cause substantial adverse physical environmental impacts.	LS	None required.	--
Impact 3.12-2: The proposed Project has the potential to require the construction of fire department facilities which may cause substantial adverse physical environmental impacts.	LS	None required.	--
Impact 3.12-3: The proposed Project has the potential to require the construction of school facilities which may cause substantial adverse physical environmental impacts.	LS	None required.	--
Impact 3.12-4: The proposed Project has the potential to have effects on other public facilities.	LS	None required.	--

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
Impact 3.12-5: The proposed Project has the potential to require the construction of park and recreational facilities which may cause substantial adverse physical environmental impacts.	LS	None required.	--
Impact 3.12-6: The proposed Project has the potential to 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.	LS	None required.	--
TRANSPORTATION AND CIRCULATION			
Impact 3.13-1: Project implementation would not result in VMT increases that are greater than 85 percent of Baseline conditions.	LS	None required.	--
Impact 3.13-2: Project implementation may conflict with a program, plan, policy or ordinance addressing the circulation system, including transit, bicycle, and pedestrian facilities.	LS	<p><i>Conditions of Approval have been incorporated to ensure that the project does not conflict with policy and/or ordinances relating to the circulation system.</i></p> <ul style="list-style-type: none"> • <i>Traffic COA #1 - The developer shall install a traffic signal at Airport Way/W Atherton Drive prior to issuance of the 193rd building permit, unless an alternative installation plan is agreed to by the Director of Public Works or City Engineer. The design of the traffic signal and associated intersection improvements shall be reviewed and approved by the Director of Public Works or City Engineer. The developer shall pay for the total cost for the design and installation of the traffic signal but will be reimbursed by the City of Manteca for the cost less their fair share. The project contributes to approximately 12 percent of volumes at this intersection; therefore, the project's fair share would be 12 percent.</i> • <i>Traffic COA #2 - The developer shall install a traffic signal at Airport Way/Woodward Avenue prior to issuance of the 432nd building permit, unless an alternative installation plan is agreed to by the Director of Public Works or City</i> 	--

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		<p>Engineer. The design of the traffic signal and associated intersection improvements shall be reviewed and approved by the Director of Public Works or City Engineer. The developer shall pay for the total cost for the design and installation of the traffic signal but will be reimbursed by the City of Manteca for the cost less their fair share. The project contributes to approximately 22 percent of volumes at this intersection; therefore, the project's fair share would be 22 percent.</p> <ul style="list-style-type: none"> • Traffic COA #3 – Woodward Avenue/Bella Terra Drive shall be constructed as a roundabout concurrent with the first phase of development. The developer shall be fully responsible for this improvement. • Traffic COA #4 – The developer shall pay their fair share for improvements identified in the PFIP at the Airport Way/Daniels Street and Woodward Avenue/McKinley Avenue intersections. The project's fair share at Airport Way/Daniels Street would be three percent (3%) and the project's fair share at Woodward Avenue/McKinley Avenue would be six percent (6%). This condition will be satisfied when the developer pays the PFIP fee, which is collected upon issuance of each home's building permit 	
Impact 3.13-3: Project implementation may increase hazards due to a design feature, incompatible uses, or inadequate emergency access.	LS	None required.	--
UTILITIES			
Impact 3.14-1: The proposed Project would not result in a determination by the wastewater treatment provider which serves or may serve the Project that it does not have adequate capacity to serve the project's projected demand in addition to the providers existing commitments.	LS	None required.	--

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
Impact 3.14-2: The proposed Project would not require or result in the relocation or construction of new or expanded wastewater facilities, the construction or relocation of which could cause significant environmental effects.	LS	<i>None required.</i>	--
Impact 3.14-3: The proposed Project has the potential to require or result in the construction of new water treatment facilities or expansion of existing water facilities, the construction of which could cause significant environmental effects.	LS	<i>None required.</i>	--
Impact 3.14-4: The proposed Project has the potential to have insufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years.	LS	<i>None required.</i>	--
Impact 3.14-5: The proposed Project has the potential to require or result in the construction of new stormwater drainage facilities, the construction of which could cause significant environmental effects.	PS	Mitigation Measure 3.14-1: <i>Prior to the issuance of a building or grading permit, the Project applicant shall submit a drainage plan to the City of Manteca for review and approval. The plan shall include an engineered storm drainage plan that demonstrates attainment of pre-Project runoff requirements prior to release at the outlet canal and describes the volume reduction measures and treatment controls used to reach attainment consistent with the Manteca Storm Drain Master Plan.</i>	LS
Impact 3.14-6: The proposed Project has the potential to be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs and comply with federal, State, and local statutes and regulations related to solid waste.	PS	Mitigation Measure 3.14-2: <i>Prior to the issuance of a building or grading permit for each phase of the Project, the Project applicant shall pay the City's waste connection fee which equates to the Project's fair share contribution, consistent with section 13.02.050, Charges for solid waste collection services, of the City's municipal code.</i>	LS
WILDFIRES			
Impact 3.15-1: Project implementation would not have a significant impact related to wildfire risks associated with lands in or near State	LS	<i>None required.</i>	--

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
Responsibility Areas or lands classified as very high fire hazard severity zones.			
CUMULATIVE IMPACTS			
Impact 4.1: Cumulative Damage to Scenic Resources within a State Scenic Highway	LS and LCC	<i>None required.</i>	--
Impact 4.2: Cumulative Degradation of the Existing Visual Character of the Region	PS	<i>None feasible.</i>	CC and SU
Impact 4.3: Cumulative Impact on Light and Glare	LS and LCC	<i>None required.</i>	--
Impact 4.4: Cumulative Impact on Agricultural Resources	PS	<i>None feasible.</i>	CC and SU
Impact 4.5: Cumulative Impact on the Region's Air Quality	PS	<i>None feasible.</i>	CC and SU
Impact 4.6: Cumulative Loss of Biological Resources Including Habitats and Special Status Species	LS and LCC	<i>None required.</i>	--
Impact 4.7: Cumulative Impacts on Known and Undiscovered Cultural and Tribal Resources	LS and LCC	<i>None required.</i>	--
Impact 4.8: Cumulative Impact on Geologic and Soils Resources	LS and LCC	<i>None required.</i>	--
Impact 4.9: Cumulative Impact on Climate Change from Increased Project-Related Greenhouse Gas Emissions	PS	<i>None feasible.</i>	CC and SU
Impact 4.10: Cumulative Impact Related to Hazards and Hazardous Materials	LS and LCC	<i>None required.</i>	--
Impact 4.11: Cumulative Increases in Peak Stormwater Runoff from the Project site	LS and LCC	<i>None required.</i>	--
Impact 4.12: Cumulative Impacts Related to Degradation of Water Quality	LS and LCC	<i>None required.</i>	--
Impact 4.13: Cumulative Impacts Related to Degradation of Groundwater Supply or Recharge	LS and LCC	<i>None required.</i>	--
Impact 4.14: Cumulative Impacts Related to Flooding	LS and LCC	<i>None required.</i>	--

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
Impact 4.15: Cumulative Impact on Communities and Local Land Uses	LS and LCC	<i>None required.</i>	--
Impact 4.16: Cumulative Impacts on Population and Housing	LS and LCC	<i>None required.</i>	--
Impact 4.17: Cumulative Exposure of Existing and Future Noise-Sensitive Land Uses to Increased Noise Resulting from Cumulative Development	PS	<i>Implement Mitigation Measures 3.10-1A through 3.10-4.</i>	LS and LCC
Impact 4.18: Cumulative Impact on Public Services and Recreation	LS and LCC	<i>None required.</i>	--
Impact 4.19: Under Cumulative conditions, Project implementation would not result in VMT increases that are greater than 85 percent of Baseline conditions	LS and LCC	<i>None required.</i>	--
Impact 4.20: Under Cumulative conditions, the proposed Project would not conflict with a program, plan, policy or ordinance addressing the circulation system, including transit, bicycle, and pedestrian facilities	LS and LCC	<i>Implement Traffic COA #1, 2, 3, and 4.</i>	--
Impact 4.21: Cumulative Impact on Wastewater Utilities	LS and LCC	<i>None required.</i>	--
Impact 4.22: Cumulative Impact on Water Utilities	LS and LCC	<i>None required.</i>	--
Impact 4.23: Cumulative Impact on Stormwater Facilities	LS and LCC	<i>None required.</i>	--
Impact 4.24: Cumulative Impact on Solid Waste Facilities	LS and LCC	<i>None required.</i>	--
Impact 4.25: Cumulative impact related to wildfire	LS and LCC	<i>None required.</i>	--

CC – cumulatively considerable

PS – potentially significant

LCC – less than cumulatively considerable

B – beneficial impact

LS – less than significant

SU – significant and unavoidable

This page left intentionally blank.

1.1 PURPOSE AND INTENDED USES OF THE EIR

The City of Manteca, as the lead agency, determined that the proposed Lumina at Machado Ranch Project is a "project" within the definition of CEQA. CEQA requires the preparation of an environmental impact report (EIR) prior to approving any project, which may have a significant impact on the environment. For the purposes of CEQA, the term "project" refers to the whole of an action, which has the potential for resulting in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378[a]).

An EIR must disclose the expected environmental impacts, including impacts that cannot be avoided, growth-inducing effects, impacts found not to be significant, and significant cumulative impacts, as well as identify mitigation measures and alternatives to the proposed project that could reduce or avoid its adverse environmental impacts. CEQA requires government agencies to consider and, where feasible, minimize environmental impacts of proposed development, and an obligation to balance a variety of public objectives, including economic, environmental, and social factors.

The City of Manteca, as the lead agency, has prepared this Draft EIR to provide the public and responsible and trustee agencies with an objective analysis of the potential environmental impacts resulting from implementation of the proposed Project. The environmental review process enables interested parties to evaluate the proposed Project in terms of its environmental consequences, to examine and recommend methods to eliminate or reduce potential adverse impacts, and to consider a reasonable range of alternatives to the proposed Project. This EIR will be used by the City of Manteca to determine whether to approve, modify, or deny the proposed Project and associated approvals in light of the Project's environmental effects. The EIR will be used as the primary environmental document to evaluate full development, all associated infrastructure improvements, and permitting actions associated with the proposed Project. All of the actions and components of the proposed Project are described in detail in Chapter 2.0, Project Description.

1.2 TYPE OF EIR

The State CEQA Guidelines identify several types of EIRs, each applicable to different project circumstances. This EIR has been prepared as a Project-level EIR, which is described in State CEQA Guidelines § 15161 as: "The most common type of EIR (which) examines the environmental impacts of a specific development project. This type of EIR should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project including planning, construction, and operation".

1.3 KNOWN RESPONSIBLE AND TRUSTEE AGENCIES

The term "Responsible Agency" includes all public agencies other than the Lead Agency that have discretionary approval power over the proposed Project or an aspect of the proposed Project (CEQA Guidelines Section 15381). For the purpose of CEQA, a "Trustee" agency has jurisdiction by law over natural resources that are held in trust for the people of the State of California (CEQA Guidelines Section 15386). The following agencies are considered "Responsible Agencies" or "Trustee

1.0 INTRODUCTION

Agencies” for the proposed Project, and may be required to issue permits or approve certain aspects of the proposed Project:

- San Joaquin Local Agency Formation Commission (LAFCo) – Annexation and Detachment from Lathrop Manteca Fire District;
- Central Valley Regional Water Quality Control Board (CVRWQCB) - Storm Water Pollution Prevention Plan (SWPPP) approval prior to construction activities pursuant to the Clean Water Act;
- San Joaquin Valley Air Pollution Control District (SJVAPCD) - Approval of construction-and operation-related air quality permits, as needed;
- San Joaquin Council of Governments - SJCOG, Inc. (SJCOG) - Issuance of incidental take permit under the San Joaquin Multi-Species Habitat Conservation and Open Space Plan (SJMSCP);
- San Joaquin Flood Control Agency (SJFCA) – Potential improvements to the dry levee in the southwest corner of the Project site;
- South San Joaquin Irrigation District - Irrigation Service Abandonment Agreements, Improvement Plan review and Board of Directors consideration.

1.4 ENVIRONMENTAL REVIEW PROCESS

The review and certification process for the EIR has involved, or will involve, the following general procedural steps:

NOTICE OF PREPARATION

The City of Manteca circulated a Notice of Preparation (NOP) of an EIR for the proposed Project on January 22, 2021 to the State Clearinghouse, State Responsible Agencies, State Trustee Agencies, Other Public Agencies, Organizations and Interested Persons. A public scoping meeting was held on February 10, 2021 to present the project description to the public and interested agencies, and to receive comments from the public and interested agencies regarding the scope of the environmental analysis to be included in the Draft EIR. Concerns raised in response to the NOP were considered during preparation of the Draft EIR. The NOP and comments received on the NOP by interested parties are presented in Appendix A.

DRAFT EIR

This document constitutes the Draft EIR. The Draft EIR contains a description of the proposed Project, description of the environmental setting, identification of project impacts, and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives, identification of significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. This Draft EIR identifies issues determined to have no impact or a less than significant impact, and provides detailed analysis of potentially significant and significant impacts. Comments received in response to the NOP were considered in preparing the analysis in this EIR. Upon completion of the Draft EIR, the City of Manteca will file the Notice of Completion (NOC) with the State Clearinghouse of the Governor’s Office of Planning and Research to begin the public review

period. Additionally, the City of Manteca will file the Notice of Availability with the County Clerk and have it published in a newspaper of regional circulation to begin the local public review period.

PUBLIC NOTICE/PUBLIC REVIEW

The City of Manteca will provide a public notice of availability for the Draft EIR, and invite comment from the general public, agencies, organizations, and other interested parties. Consistent with CEQA, the review period for this Draft EIR is forty-five (45) days. Public comment on the Draft EIR will be accepted in written form. All comments or questions regarding the Draft EIR should be addressed to:

Attn: Mark Niskanen, Contract Planner
Manteca Community Development Department, Planning Division
1001 West Center Street, Suite 201
Manteca, CA 95337
Phone: (209) 599-8377
Email: mark@jbandersonplanning.com

RESPONSE TO COMMENTS/FINAL EIR

Following the public review period, a Final EIR will be prepared. The Final EIR will respond to written comments received during the public review period and to oral comments received at a public hearing during such review period.

CERTIFICATION OF THE EIR/PROJECT CONSIDERATION

The City will review and consider the Final EIR. If the City finds that the Final EIR is "adequate and complete", the City Council may certify the Final EIR in accordance with CEQA. The rule of adequacy generally holds that an EIR can be certified if:

- 1) The EIR shows a good faith effort at full disclosure of environmental information; and
- 2) The EIR provides sufficient analysis to allow decisions to be made regarding the proposed Project in contemplation of environmental considerations.

The level of detail contained throughout this EIR is consistent with Section 15151 of the CEQA Guidelines and recent court decisions, which provide the standard of adequacy on which this document is based. The Guidelines state as follows:

An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of the environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.

Following review and consideration of the Final EIR, the City may take action to approve, modify, or reject the Project. A Mitigation Monitoring and Reporting Program, as described below, would also be adopted in accordance with Public Resources Code Section 21081.6(a) and CEQA Guidelines Section 15097 for mitigation measures that have been incorporated into or imposed upon the Project to reduce or avoid significant effects on the environment. This Mitigation Monitoring and Reporting Program will be designed to ensure that these measures are carried out during Project implementation, in a manner that is consistent with the EIR.

1.5 ORGANIZATION AND SCOPE

Sections 15122 through 15132 of the State CEQA Guidelines identify the content requirements for Draft and Final EIRs. An EIR must include a description of the environmental setting, an environmental impact analysis, mitigation measures, alternatives, significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. Discussion of the environmental issues addressed in the Draft EIR was established through review of environmental and planning documentation developed for the proposed Project, environmental and planning documentation prepared for recent projects located within the City of Manteca, applicable local and regional planning documents, and responses to the Notice of Preparation (NOP).

This Draft EIR is organized in the following manner:

EXECUTIVE SUMMARY

This Executive Summary summarizes the characteristics of the proposed Project, known areas of controversy and issues to be resolved, and provides a concise summary matrix of the proposed Project's environmental impacts and possible mitigation measures. This chapter identifies alternatives that reduce or avoid at least one significant environmental effect of the proposed Project.

CHAPTER 1.0 – INTRODUCTION

Chapter 1.0 briefly describes the purpose of the environmental evaluation, identifies the lead, trustee, and responsible agencies, summarizes the process associated with preparation and certification of an EIR, and identifies the scope and organization of the Draft EIR.

CHAPTER 2.0 – PROJECT DESCRIPTION

Chapter 2.0 provides a detailed description of the proposed Project, including the location, intended objectives, background information, the physical and technical characteristics, including the decisions subject to CEQA, related improvements, and a list of related agency action requirements.

CHAPTER 3.0 – ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

Chapter 3.0 contains an analysis of environmental topic areas as identified below. Each subchapter addressing a topical area is organized as follows:

Environmental Setting. A description of the existing environment as it pertains to the topical area.

Regulatory Setting. A description of the regulatory environment that may be applicable to the proposed Project.

Impacts and Mitigation Measures. Identification of the thresholds of significance by which impacts are determined, a description of project-related impacts associated with the environmental topic, identification of appropriate mitigation measures, and a conclusion as to the significance of each impact.

The following environmental topics are addressed in this section:

- Aesthetics and Visual Resources
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural and Tribal Resources
- Geology and Soils
- Greenhouse Gases, Climate Change, and Energy
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use, Population, and Housing
- Noise
- Public Services and Recreation
- Transportation and Circulation
- Utilities
- Wildfire

CHAPTER 4.0 – OTHER CEQA-REQUIRED TOPICS

Chapter 4.0 evaluates and describes the following CEQA required topics: impacts considered less-than-significant, significant and irreversible impacts, growth-inducing effects, cumulative, and significant and unavoidable environmental effects.

CHAPTER 5.0 – ALTERNATIVES TO THE PROJECT

State CEQA Guidelines Section 15126.6 requires that an EIR describe a range of reasonable alternatives to the proposed Project, which could feasibly attain the basic objectives of the proposed Project and avoid and/or lessen any significant environmental effects of the proposed Project. Chapter 5.0 provides a comparative analysis between the environmental impacts of the proposed Project and the selected alternatives.

CHAPTER 6 – REPORT PREPARERS

This section lists all authors and agencies that assisted in the preparation of the EIR, by name, title, and company or agency affiliation.

APPENDICES

This section includes all notices and other procedural documents pertinent to the EIR, as well as technical material prepared to support the analysis.

1.6 COMMENTS RECEIVED ON THE NOTICE OF PREPARATION

The City of Manteca received five (5) written comment letters on the NOP for the proposed Project. Copies of the letters is provided in Appendix A of this Draft EIR. The commenting agency/citizen is provided below. The City also held a public scoping meeting on February 10, 2021. Comments received at the meeting were related mostly to potential for flooding and traffic on Woodward Avenue, including traffic calming measures that could be deployed. The Project Applicant has retained an engineer to design a storm drainage system to handle storm drainage and prevent flooding. Additionally, the Project Applicant's engineer has designed Woodward Avenue with a deceleration lane. The City Engineer will ultimately be required to review all engineering plans to ensure that the meet the City's design standards.

- Central Valley Regional Water Quality Control Board;
- California Department of Toxic Substances Control;
- Terra Land Group;
- Bill Ludwig; and
- An Anonymous Commenter.

1.7 POTENTIAL AREAS OF CONCERN

The following are topics of public concern or potential controversy that have become known to the City staff based on public input, known regional issues, and staff observations:

- Project impacts on regional stormwater, drainage, groundwater, and water quality;
- Short-term and long-term flood water, stormwater, and wastewater drainage and other hydrology-related backwater impacts on rural areas of south Manteca due to Project implementation, specifically the drainage areas in and along Walthall Slough and the South San Joaquin Irrigation District (SSJID) canals and pipelines;
- Flood and drainage impacts due to SB5 200-year levee modification/alignment;
- Climate change impacts related to potential volumes of channel flows expected to be in and along the South Delta Lower San Joaquin River System;
- Contaminated on-site soils due to the Project site's close proximity to roadways and historical past uses (i.e., agricultural);
- Demolition of on-site buildings or structures potentially containing lead-based paints, mercury, asbestos containing materials, and polychlorinated biphenyl caulk;
- Increased traffic on project area roadways including Woodward Avenue and Airport Way, and State highway facilities; and
- Annexation of the existing residences located in the Non-development Areas.

2.1 PROJECT LOCATION

The Project site is located in the southwestern portion of the City of Manteca, immediately south of the city limit lines. The Project site is immediately southwest of the intersection of Airport Way and Woodward Avenue. The Project site is bounded on the north by Woodward Avenue and an existing single-family residential subdivision, on the east by Airport Way, on the south by an existing Reclamation District #2094 (RD2094) dry levee and existing agricultural fields, and on the west by the existing single-family residential subdivisions. Figures 2.0-1 and 2.0-2 show the Project's regional location and vicinity. The Project site is located within Sections 12 of Township 2 South, Range 6 East Mount Diablo Base and Meridian (MDBM). Figure 2.0-3 illustrates the project location on the USGS Lathrop, California, 7.5-minute series quadrangle map.

2.2 PROJECT SITE DEFINED

The Project site includes several distinct planning boundaries defined below. The following terms are used throughout this DEIR to describe the planning area boundaries within the Project site:

- Project Site (or Annexation Area) – includes the whole of the project, including the proposed 161.19-acre Development Area, 19.11-acre Non-development Area on 15 inhabited residential lots, and 3.16 acres of existing right-of-way.
- Development Area - includes a 161.19-acre parcel (APN 241-32-018 and dedication areas along Woodward Avenue and Airport Way) that is intended for the development of up to 827 residential units, two parks, and public infrastructure.
- Non-development Area 1 - includes six 1.0 acre lots with existing residential homes. Access to these homes is directly onto Woodward Avenue.
- Non-development Area 2 - includes nine lots ranging in size from 1.3 to 1.8 acres totaling 13.11 acres with existing residential homes. Access to three of these homes is directly onto Woodward Avenue, five are onto Airport Way, and one has access onto both Woodward Avenue and Airport Way.
- Right-of-Way Annexation Area - includes 3.16 acres of remaining right-of-way outside of areas of dedication owned by San Joaquin County, and intended to be annexed into the City of Manteca.

2.3 PROJECT SETTING

EXISTING SITE CONDITIONS

The Project site is 183.46 acres and includes 16 Assessor parcels (APNs): Development Area (161.19-acre parcel, APN 241-32-018 and dedication areas along Woodward Avenue and Airport Way), Non-development Area 1 (an inhabited annexation of 6 parcels on 6 acres), Non-development Area 2 (an inhabited annexation of 9 parcels on 13.11 acres), and the Right-of-Way Annexation Area (3.16 acres of

2.0 PROJECT DESCRIPTION

remaining County right-of-way). Table 2.0-1 lists each parcel included in the Project site and Figure 2.0-4 illustrates the APNs.

TABLE 2.0-1: PARCELS WITHIN THE PROJECT SITE

<i>APN / RIGHT OF WAY</i>	<i>ACREAGE</i>
<i>DEVELOPMENT AREA</i>	
241-32-018	161.19
<i>NON-DEVELOPMENT AREA 1</i>	
241-32-005	1.00
241-32-006	1.00
241-32-007	1.00
241-32-021	1.00
241-32-008	1.00
241-32-009	1.00
<i>NON-DEVELOPMENT AREA 2</i>	
241-32-011	1.86
241-32-012	1.37
241-32-013	1.35
241-32-014	1.35
241-32-015	1.35
241-32-029	1.49
241-32-028	1.51
241-32-027	1.49
241-32-023	1.34
<i>RIGHT-OF-WAY ANNEXATION AREA</i>	
Public Right-of-Way	3.16
Total	183.46

SITE TOPOGRAPHY

The Project site is relatively flat with a natural gentle slope from south to north. The Project site topography ranges in elevation from approximately 19 to 24 feet above sea level.

EXISTING SITE USES

The Development Area is bordered on the north by Woodward Avenue, on the east by Airport Way, on the south by an existing Reclamation District #2094 (RD2094) dry levee and existing agricultural fields, and on the west by the Terra Ranch Subdivision. The current uses on the Development Area are predominantly agricultural and undeveloped, except for two (2) existing houses and barns and/or sheds with associated equipment in the northeastern portion of the site. Additionally, 2 dirt/gravel roadways bisect the Development Area, including one (1) roadway running north to south down the center of the Development Area from Woodward Avenue to the southern boundary and another running east to west from Airport Avenue connecting to the dirt/gravel roadway in the center of the Development Area. A South San Joaquin Irrigation District (SSJID) pipeline exists within the Development Area. The RD 2094 dry levee makes up a portion of the southern property line. This dryland levee is not intended to hold floodwaters from the south (upstream), instead it is intended to contain flows on RD 2094 and RD 2096 in the event of a breach of the levees along RD 2094, RD 2096, or RD 17. It is noted that the Annexation Area is located within the RD 17 boundary.

Non-development Area 1 includes six (6) existing residential homes just north of the Development Area and Woodward Avenue.

Non-development Area 2 includes nine (9) existing residential homes just north of Woodward Avenue, and West of Airport Way.

The Right-of-Way Annexation Area includes Woodward Avenue and Airport Way.

Figure 2.0-5 shows aerial imagery of the existing site uses within the Project site.

EXISTING SURROUNDING USES

The Project site is surrounded by a variety of agricultural and residential land uses. Uses immediately south of the Project site include agricultural and residential uses, including ranchettes and large estates lots. Residential subdivisions are located to the north and east of the Project site, including the Terra Ranch Subdivision which borders the Development Area on the west. Existing uses to the east of the Project site include a residential subdivision north of Woodward Avenue and agricultural and rural residential uses south of Woodward Avenue.

EXISTING GENERAL PLAN LAND USE DESIGNATIONS AND ZONING

The following section outlines the City and County General Plan land use designations and zoning for the Project site. It should be noted that the Project site is currently outside of the jurisdiction of the City of Manteca, and therefore does not have a City of Manteca zoning.

City of Manteca

The currently adopted General Plan is the 2023 General Plan; however, the City is currently undergoing an Update to the General Plan. Therefore, the following describes the existing land use designations for the Project site under the 2023 General Plan and the proposed General Plan Update. Figure 2.0-6 depicts the land use designations for the Project site and the surrounding areas under the adopted Manteca General Plan 2023 as well as the Manteca General Plan Update.

The Development Area is designated as Low Density Residential (LDR, 2.1 to 8 du/ac) with a Park designation under the current 2023 General Plan. The Draft General Plan Update proposes to maintain the same land use designation for this area when compared to the existing General Plan.

Non-development Area 1 is designated Low Density Residential (LDR, 2.1 to 8 du/ac) under the current General Plan. The General Plan Update proposes to maintain the same land use designation for this area when compared to the existing General Plan.

Non-development Area 2 is designated Commercial Mixed Use (CMU), Neighborhood Commercial (NC), and General Commercial (GC) under the current General Plan. It is noted that these parcels are currently inhabited as residential. The General Plan Update includes some modifications to the land uses in this area. The NC designation is proposed to be eliminated as a land use category in the General Plan Update, and the GC designation is proposed to be changed to Commercial (C). In the General Plan Update the

2.0 PROJECT DESCRIPTION

parcel currently designated as NC is proposed to be changed to C, five parcels that are currently designated CMU are also proposed to change to C, and two parcels are proposed to remain CMU.

The 2023 General Plan and General Plan Update both contain standards to guide development for these land uses, as noted below:

2023 GENERAL PLAN

LDR (Low Density Residential): The LDR land use will establish a mix of dwelling unit types and character determined by the individual site and market conditions. The density range allows substantial flexibility in selecting dwelling unit types and parcel configurations to suit particular site conditions and housing needs. The type of dwelling units anticipated in this density range include small lots and clustered lots as well as conventional large lot detached residences.

CMU (Commercial Mixed Use): The CMU designation will accommodate a variety of purposes including high density residential, employment centers, retail commercial, and professional offices.

NC (Neighborhood Commercial): This designation provides for locally oriented retail and service uses, offices, restaurants, and service stations, public and quasi-public uses and similar and compatible uses. The mix of uses anticipated in these centers includes supermarket/drug store configuration including associated smaller retail stores and services. Pad sites will provide restaurant and service station opportunities.

GC (General Commercial): The General Commercial 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 commercial, lodging, commercial recreation and public gathering facilities, such as amphitheaters, or public gardens.

P (Park): This designation provides for neighborhood, community and regional parks, golf courses, and other outdoor recreational facilities within urban development. Specific uses include public recreation sites, including ball fields, tot lots and play apparatus, adult softball and soccer playing fields, swimming pools, community center buildings, meeting facilities, libraries, art centers, after school care facilities, art in public places, facilities for night-time recreation, trails benches, interpretive markers, picnic areas, barbecue facilities, landscaping, irrigation, city wells, trees and natural habitat areas.

GENERAL PLAN UPDATE

LDR (Low Density Residential): This designation provides for a mix of single-family housing, including small lots, clustered lots, attached homes, and conventional large lot detached residences. Density ranges from 2.1 to 8 dwelling units per acre.

CMU (Commercial Mixed Use): This designation provides for high density residential, employment centers, retail commercial, and professional offices. A mix of compatible uses is encouraged to provide neighborhood-serving sales, services, and activities, as well as employment opportunities, including offices.

Developments shall include community-serving amenities and connections that distinguish them from conventional multifamily, neighborhood commercial, or office development, with the intent that a recreational area and neighborhood serving uses will provide a local gathering place for recreation and socializing much as does a small-town square. For example, a residential development could include a work center that provides on-site facilities that encourage telecommuting and entrepreneurship.

Mixed uses may be integrated vertically or horizontally and shall be linked together through common walkways, plazas and parking areas, as well as linkages to the adjoining bicycle and pedestrian system.

Where required, open space, detention facilities, and parks, will be designed as an amenity within the site. Public facilities, such as a post office, library, fire station, or satellite government office, shall be included where feasible.

Developments shall have a shared parking program with the objective of reducing the parking required for each individual use.

C (Commercial): This designation 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.

P (Park): The P designation provides for neighborhood, community and regional parks, greenways, golf courses, and other outdoor recreational facilities within urban development. Specific uses include public recreation sites, including ball fields, tot lots and play apparatus, adult softball and soccer playing fields, swimming pools, community center buildings, meeting facilities, libraries, art centers, after school care facilities, art in public places, facilities for night-time recreation, trails benches, interpretive markers, picnic areas, barbecue facilities, landscaping, irrigation, City wells, trees, and natural habitat areas.

San Joaquin County

Figure 2.0-7 identifies the San Joaquin County land use designations and zoning for the Project site and the surrounding area. The Project site is designated as Agriculture by the County's General Plan Land Use Map and is zoned as AG-40 Agriculture by the County.

2.4 PROJECT GOALS AND OBJECTIVES

Consistent with CEQA Guidelines Section 15124(b), a clear statement of objectives and the underlying purpose of the proposed Project shall be discussed.

PROJECT OBJECTIVES

The principal objective of the proposed Project is the annexation of the Project site into the City of Manteca, and approval and subsequent development of the Development Area for residential and park uses.

2.0 PROJECT DESCRIPTION

The quantifiable objectives of the proposed Project include annexation of 183.46 acres, including the proposed 161.19-acre Development Area, 19.11-acre Non-development area containing 15 inhabited residential lots, and 3.16 acres of remaining right-of-way. The quantifiable objectives include the development of 827 single family detached units and a central park totaling 10.87 acres (Lot F), plus 1.28 acres of levee access and pocket park (Lot G). Total parkland is 12.15 acres. In addition, there is open space provided in the form of frontage landscaping strips and a well site (Lots A, B, C, D, I, J, L, M and N).

The goals of the proposed Development are as follows:

- Provide residential housing opportunities, with an array of lot sizes, that are visually attractive and accommodate the future housing demand in Manteca.
- Establish a mixture of Low-Density Residential project types that collectively provide for local and regional housing and that take advantage of the area's high level of accessibility.
- Provide infrastructure and park space that meets City standards, in a centralized setting that is integrated with existing and planned facilities and connections, and increases recreation opportunities for existing and future residents of the City.
- Establish a logical phasing plan designed to ensure that each phase of development would include necessary public improvements that are required to meet City standards.

2.5 PROJECT ENTITLEMENTS

GENERAL PLAN AMENDMENT

The proposed Project would require a General Plan Land Use Amendment to adjust the exact location and shape of the Park land use designation within the Development Area. It is noted that the City is undergoing an Update to the General Plan, and there is a proposed Land Use policy (LU-1.5) that allows flexibility to relocate land uses that are contiguous properties and are included in a single development application as long as the acreage of each land use designation is maintained and if it does not result in incompatibilities with adjacent or nearby land uses or designations. Were this policy approved at this time it would apply to the proposed Project, and there would be no need for a General Plan Amendment.

No changes are proposed for the Non-development Area 1. It is noted that the General Plan Update proposed changes to the land use in Non-development Area 2, and the proposed Land Uses under this General Plan Amendment are consistent with the General Plan Update.

Figure 2.0-8 identifies the 2023 General Plan land uses following implementation of the minor General Plan Land Use Amendment.

PRE-ZONING

As previously stated, the Project site is currently outside of the jurisdiction of the City of Manteca, and therefore does not have zoning. The proposed Project includes a request for pre-zoning of the Development Area, Non-development Area 1, and Non-development Area 2.

Development Area: The pre-zoning request is for a Planned Development (PD) zoning over this area.

Non-development Area 1: The pre-zoning request is for an R-1 District over the existing lots. The R-1 is defined as follows:

- **R-1 One-Family Dwelling Zoning District.** This designation allows for substantial flexibility in selecting dwelling unit types and parcel configurations to suit site conditions and housing needs. The types of dwelling units include small lots and clustered lots as well as conventional large-lot detached residences.

Non-development Area 2: The pre-zoning request is for Commercial Mixed Use (CMU) and General Commercial (GC) District over these lots. The CMU and GC are defined as follows:

- **Mixed Use Commercial Zoning District.** This designation will accommodate a variety of uses including high-density residential, employment centers, retail commercial, and professional offices.
- **General Commercial Zoning District.** 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.

The proposed zoning for the Project site is shown on Figure 2.0-9.

TENTATIVE SUBDIVISION MAP

The proposed Project includes a Tentative Subdivision Map for the Development Area that would ultimately be divided into four phases on a single tentative subdivision map. The tentative map would result in the subdivision of 161.19 acres into 827 residential lots (100.46 acres), a centralized park totaling 10.87 acres (Lot F), plus 1.28 acres of levee access and pocket park (Lot G). Total parkland is 12.15 acres. In addition, there is open space provided in the form of frontage landscaping strips and a well site (Lots A, B, C, D, I, L, M and N - 38,864 sf frontage landscaping, and Lot J – 28,049 sf for a well site and frontage landscaping).

Figure 2.0-10 illustrates the Site Plan, and the full Tentative Map is included in the Appendix.

ANNEXATION

The proposed Project includes an Annexation of 16 APNs totaling 183.46 acres. This includes the Development Area (161.19 acre parcel, APN 241-32-018 and adjacent dedications), Non-development Area 1 (an inhabited annexation of 6 parcels on 6 acres), Non-development Area 2 (an inhabited annexation of 9 parcels on 13.11 acres), and the remaining Right-of-Way Annexation Area (3.16 acres of existing County right-of-way). The annexation will also include detachment from the Lathrop Manteca Fire District.

Figure 2.0-11 illustrates the Annexation Area.

DEVELOPMENT AGREEMENT

The proposed Project anticipates a Development Agreement that will be negotiated between the City and Applicant. Terms of the Development Agreement are not available at this early stage of review, but will be required to be consistent with the environmental analysis, including any mitigation measures that are created to reduce impacts.

2.6 DEVELOPMENT PROJECT CHARACTERISTICS

The proposed Project is primarily a residential development anticipated to provide up to 827 units. The Development Project would provide 10.87 acres of centralized parkland (Lot F), plus 1.28 acres of levee access and pocket park (Lot G). Total parkland is 12.15 acres. In addition, there is open space provided in the form of frontage landscaping strips and a well site (Lots A, B, C, D, I, L, M and N - frontage landscaping, Lot J for a well site and frontage landscaping). Other uses to support and compliment the proposed residential development include underground wet and dry utility infrastructure, roadways, curb/gutters/sidewalks, bicycle/pedestrian facilities, street lighting, and street signage. Table 2.0-2 provides a land use summary of the Development Project.

TABLE 2.0-2: LAND USE SUMMARY

<i>PROPOSED LAND USE DESIGNATIONS</i>	<i>APPROXIMATE ACRES</i>	<i>ALLOWABLE DENSITY (OR FAR)</i>	<i>PROPOSED AVERAGE DENSITY (OR FAR)</i>	<i>PROJECTED NUMBER OF UNITS (OR SQUARE FEET)</i>
LDR	147.5	2.1 to 8.0	5.6	827 units
Central Park	10.87	--	--	--
Levee Park	1.28			
Open Space Lots	1.54			
Total	161.19	--	--	827 units

Development of housing will depend on market conditions and demand. The plan for infrastructure allows for development to occur in phases to respond to the market conditions and demand.

RESIDENTIAL DEVELOPMENT

The proposed Project will provide a variety of housing types and lot sizes that will accommodate a range of housing objectives and buyer needs with a goal to ensure housing for a variety of families and lifestyles. As shown in Table 2 above, at full build-out, the Development Area will accommodate up to 827 residential units.

The residential neighborhoods are divided into four phases (quadrants) as part of one tentative subdivision map. Phase One (northwestern quadrant) will subdivide the Development Area into 189 single family residential lots. Lot sizes within this phase would range from 4,000 square feet to 11,145 square feet. A portion of the northern portion of the central park (4.22-acres) will begin construction during this phase of the project and will be completed during the development of Phase Two of the project. Phase Two (northeastern quadrant) will subdivide the Development Area into 200 single family residential lots. Lot sizes within this phase would range from 4,000 square feet to 12,525 square feet. A portion of the southern section of the central park/basin will be constructed with this phase, but that area will only be

utilized for extra stormwater storage and treatment. Phase Three (southwestern quadrant) will subdivide the Development Area into 271 single family residential lots. Lot sizes within this phase would range from 3,375 square feet to 8,978 square feet. The remaining portion of the central park/basin (5.40-acres) will be constructed in this phase. Additionally, a 1.28-acre open space area will be constructed in this phase in the vicinity of the proposed RD 2094 dry levee. Phase Four (southeastern quadrant) will subdivide the Development Area into 167 single family residential lots. Lot sizes within this phase would range from 3,375 square feet to 17,900 square feet.

Figure 2.0-10 illustrates the Site Plan, and the full Tentative Map is included as Attachment A.

PARKS

As shown in Figure 2.0-10, approximately 12.15 acres of parkland (Lot F), plus 1.28 acres of levee access and pocket park (Lot G). Total parkland is 12.15 acres. In addition, there is open space provided in the form of frontage landscaping strips and a well site (Lots A, B, C, D, I, L, M, and N - 38,864 Sf frontage landscaping, Lot J -28,049 sf for a well site and frontage landscaping).

After dedication to the City, the parks, parkways, and recreation facilities will be under the jurisdiction of the City, and will be operated and maintained by the City for the enjoyment of the residents of Manteca. Maintenance will be funded through a community facilities district.

The park sites shown on Figure 2.0-10 indicate conceptual park locations. Actual locations of parks and dual use basins may change as the Development Area is developed. Parks and parkways are shown for reference only, but will be finalized during the development of Improvement Plans and Final Maps. Parks may include community or neighborhood parks with active and passive components as approved by the City. Parks may feature play fields, children play areas, picnic areas, ball courts, open lawn areas, or other amenities. Additionally, the Park areas will be designed in conjunction with storm water basins. Park acreage and facilities shall occur within the Development Area in a variety of forms as determined by the City during the mapping and improvement plan process.

CIRCULATION

The proposed Project will connect with and expand the existing circulation system in the City of Manteca. Additionally, the proposed Project will provide sidewalks and bike lanes to offer additional bicycling and walking facilities for all of Manteca's residents. The Development Area is a natural progression of the existing housing areas and street network on the south side of the City and ties directly to the existing roadway network.

The proposed Project includes a hierarchy of roadways to accommodate the capacity needs of the existing street network as well as provide additional vehicular access to the Development Area that will also benefit the vehicular circulation for the entire City. Woodward Avenue and Airport Way are the main arterial roadways providing access to the Development Area. The proposed Project includes annexation of right-of-way along Woodward Avenue and Airport Way, which will be improved to a City of Manteca standard.

The neighborhoods within the Development Area will include a network of minor collectors, and residential streets to provide an efficient flow of traffic through the area. Additionally, sidewalks and bicycle lanes will be included per the City standards.

UTILITIES AND PLANNED INFRASTRUCTURE IMPROVEMENTS

The construction of on-site infrastructure improvements would be required to accommodate development of the Development Area, as described below.

Potable Water System

The Development Area would be served by a new potable water distribution system. Development of the proposed potable water system will require the installation of additional water mains within the proposed roadways to comply with the 2005 City of Manteca Master Water Plan. Additionally, a potable well site would be installed within the subdivision adjacent to Airport Way. The proposed on-site water distribution system will have various points-of-connection to the City mains. The Development Project will connect to the existing water main lines in Woodward Avenue, Airport Way, and at various stub streets from the existing Terra Ranch Subdivision to the west. Additionally, an internally looped system of water lines will be installed within the Development Area. A water system analysis will be prepared during future design of Improvement Plans to ensure that the final design is compliant with City of Manteca fire flow and pressure standards.

The proposed water distribution system may utilize Best Management Practices (BMP) and design control features, including the following Low Impact Development (LID) measures:

1. Implementation of the City of Manteca water recycling program for irrigation of public areas.
2. Irrigation system designs may include “purple pipe” for distribution of recycled water.
3. Reduction of turf areas on lots.
4. Use of rain gardens on lots and in public areas.
5. Use of drought-resistant vegetation in landscaping on lots and public areas.
6. Use of native trees and vegetation for landscaping on lots and in public areas.
7. Lot designs may include features that receive roof runoff from downspouts and provide for reuse of rainwater for irrigation.

Non-Potable Water

The Development Area would include the development of an on-site non-potable water distribution system that would eventually provide irrigation water to planned parks, open space, and landscaped areas. All landscape irrigation is to be installed with non-potable components.

Connection from all irrigation systems to the non-potable water service will be provided in the proposed streets. This connection is to be provided per the requirements of the City Water Division with a valve whether the irrigation is provided by a well or not. In the future, when the non-potable system is charged

by the City, the irrigation will be provided by the non-potable water system with the irrigation well remaining as a back-up only. Irrigation shall be designed to maximize efficiency and meet the requirements of the City Parks Maintenance Division.

Wastewater System

The Development Area would be served by a new wastewater distribution system. The proposed wastewater conveyance facilities would connect to the existing 36" sewer main in Woodward Avenue as part of the City of Manteca collection and treatment system. The proposed Project will also construct a new 12" sewer main in Airport Way to extend the existing City of Manteca collection and treatment system.

Wastewater treatment would be provided at the City's existing Wastewater Quality Control Facility (WQCF) at 2450 West Yosemite Avenue in western Manteca. The Development Area is located within the South Manteca Collection Shed (SMCS). The backbone of the SMCS is the South Manteca Trunk Sewer (SMTS) along Woodward Avenue. Existing facilities for conveying effluent from the South Manteca Collection Area include:

1. The existing 36-inch trunk sewer facility in Woodward Avenue which extends to Galleria Drive.
2. The existing 54-inch and 60-inch truck sewer facilities that extend north from Woodward Avenue and traverses the existing Dutra Estates Subdivision, highway 120, and the future Family Entertainment Zone eventually connecting to the existing WQCF.

Storm Drainage

The Development Area would include construction of a new storm drainage system, including a drainage collection system, storm drain pump stations, and detention basins. It is noted that the locations of the proposed detention basins are conceptual and will be finalized during the design of Improvement Plans.

Installation of the proposed Project's storm drainage system will be subject to current City of Manteca Design Specifications and Standards. The proposed storm drainage collection and detention system will be subject to the State Water Resources Control Board Requirements (SWRCB) and City of Manteca regulations, including: Manteca Storm Drain Master Plan, 2013; Phase II, National Pollutant Discharge Elimination System (NPDES) Permit Requirements; NPDES-MS4 Permit Requirements; and LID Guidelines.

Stormwater quality standards imposed and monitored by the Environmental Protection Agency (EPA) and the SWRCB through the City's NPDES permit require treatment of stormwater runoff prior to its release into natural drainage features or dual use South San Joaquin Irrigation District (SSJID) and City Laterals. Stormwater quality is an integral part of the City's stormwater management system. Most existing stormwater is pumped into the dual use SSJID and City laterals and drains.

The City requires detention basins to help attenuate peak flows before drainage discharge is pumped into SSJID's facilities. Delaying the release of water over longer periods of time further reduces the potential of downstream flooding. The proposed detention basins are joint-use facilities providing recreation and other uses when not being used for stormwater detention.

Regulated Public Utilities

Electrical, gas, phone, cable and related internet services would be extended to all portions of the Project site from existing facilities located along Woodward Avenue and Airport Way adjacent to the Project site. Proposed utilities would be located within public utility easements to be dedicated along street frontages. Utility improvements would be installed in conjunction with planned street improvements.

2.7 USES OF THE EIR AND REQUIRED AGENCY APPROVALS

This EIR may be used for the following direct and indirect approvals and permits associated with adoption and implementation of the proposed Project.

CITY OF MANTECA

The City of Manteca will be the Lead Agency for the proposed Project, pursuant to the State Guidelines for Implementation of CEQA, Section 15050. Actions that would be required from the City include, but are not limited to the following:

- Certification of the EIR;
- Adoption of the Mitigation Monitoring and Reporting Program;
- Approval of City of Manteca General Plan Amendment (Land Use Element);
- Approval of City of Manteca Zoning Pre-zoning;
- Approval of Development Agreement;
- Approval of Vesting Tentative Maps;
- Approval of Annexation of the Development Area and Inhabited Area and Authorization to submit Annexation request to San Joaquin LAFCo;
- Approval of future Final Maps;
- Approval of future Improvement Plans;
- Approval of future Grading Plans;
- Approval of future Site Plan and Design Review;
- City review, approval, of construction and utility plans;
- Approval of future Building Permits; and
- Approval of future Conditional Use Permits.

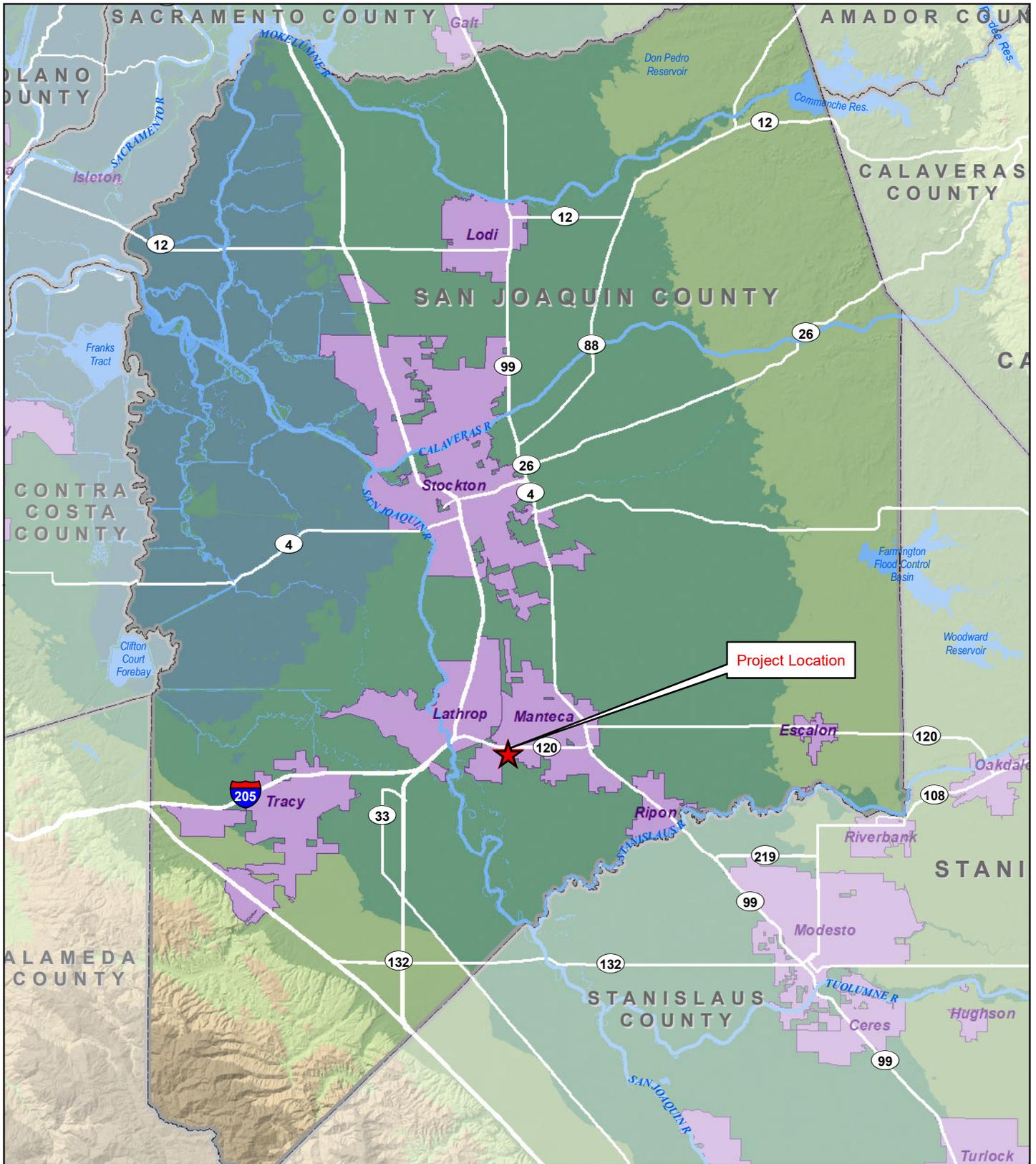
OTHER GOVERNMENTAL AGENCY APPROVALS

The following agencies may be required to issue permits or approve certain aspects of the proposed Project. Other governmental agencies that may require approval include, but are not limited to, the following:

- San Joaquin Local Agency Formation Commission (LAFCo) – Annexation and Detachment from Lathrop Manteca Fire District;
- Central Valley Regional Water Quality Control Board (CVRWQCB) - Storm Water Pollution Prevention Plan (SWPPP) approval prior to construction activities pursuant to the Clean Water Act;

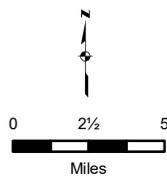
- San Joaquin Valley Air Pollution Control District (SJVAPCD) - Approval of construction-related air quality permits;
- SJVAPCD - Authority to Construct, Permit to Operate for stationary sources of air pollution; and
- San Joaquin Council of Governments - SJCOG, Inc. (SJCOG) - Issuance of incidental take permit under the San Joaquin Multi-Species Habitat Conservation and Open Space Plan (SJMSCP);
- San Joaquin Flood Control Agency (SJFCA) – Potential improvements to the dry levee in the southwest corner of the Project site;
- South San Joaquin Irrigation District - Irrigation Service Abandonment Agreements, Improvement Plan review and Board of Directors consideration.

This page intentionally left blank.



LEGEND

-  Project Location
-  Incorporated Area
-  County Boundary

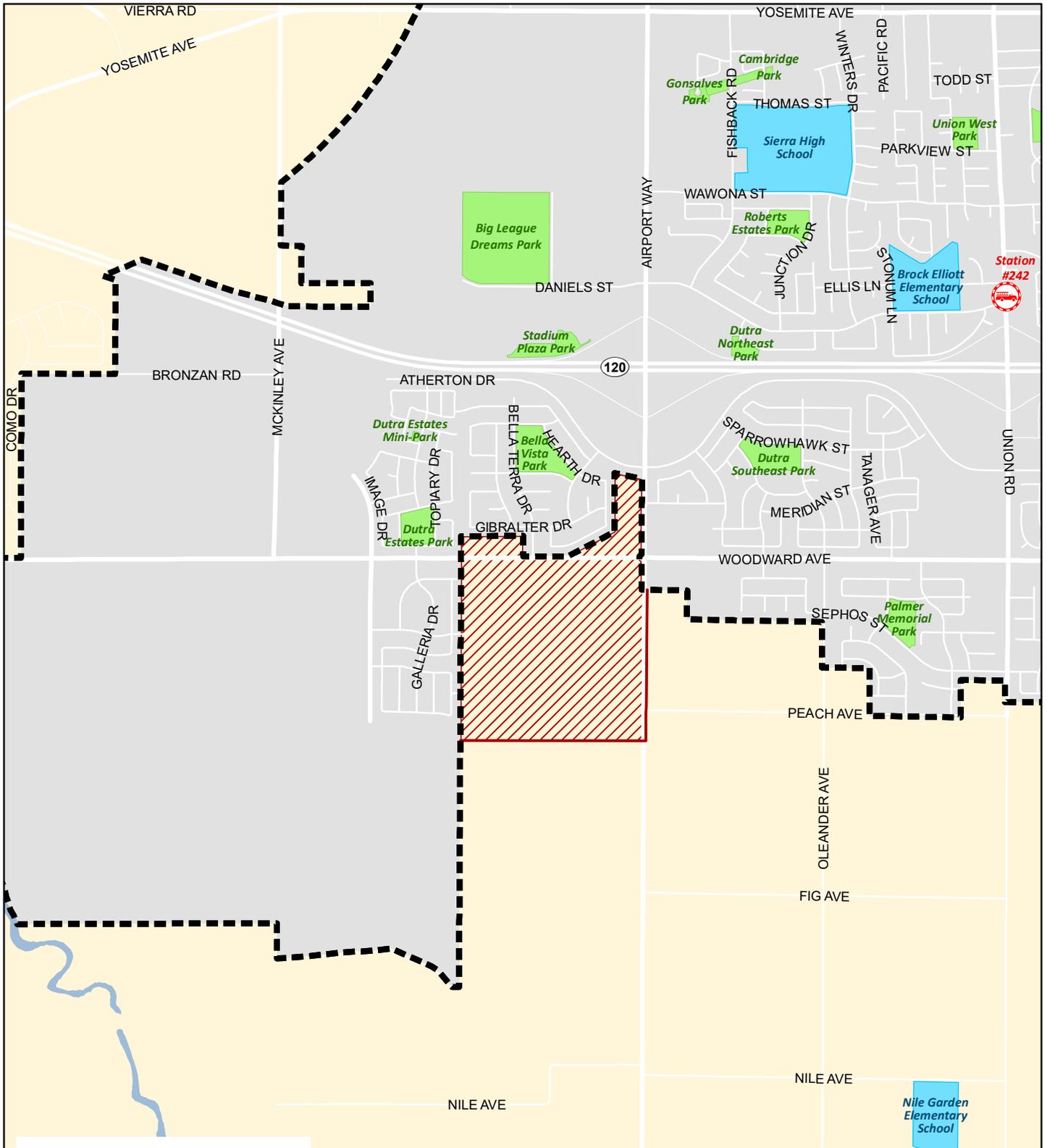


LUMINA at MACHADO RANCH

Figure 2.0-1. Regional Location Map

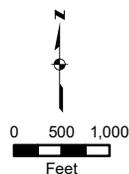
Sources: California State Geoportal. Map date: December 23, 2020.

This page intentionally left blank.



Legend

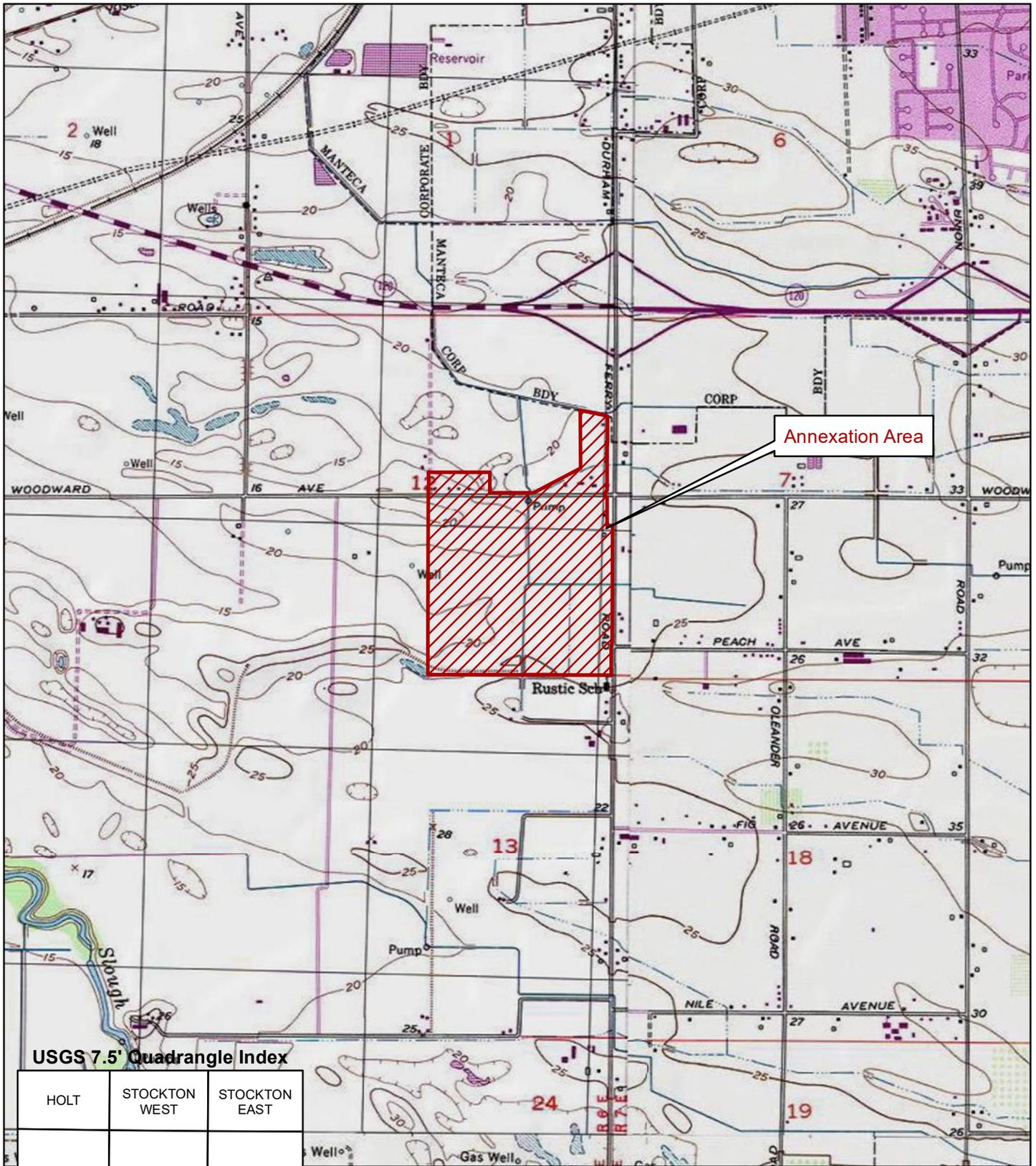
-  Annexation Area
-  Manteca City Limits
-  Public Educational Facility
-  Park Site
-  City of Manteca Fire Department



LUMINA at MACHADO RANCH
Figure 2.0-2. Vicinity Map

Sources: San Joaquin County GIS; Google Maps. Map date: December 23, 2020.

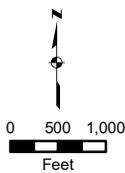
This page intentionally left blank.



Annexation Area

USGS 7.5' Quadrangle Index

HOLT	STOCKTON WEST	STOCKTON EAST
UNION ISLAND	LATHROP	MANTECA
TRACY	VERNALIS	RIPON



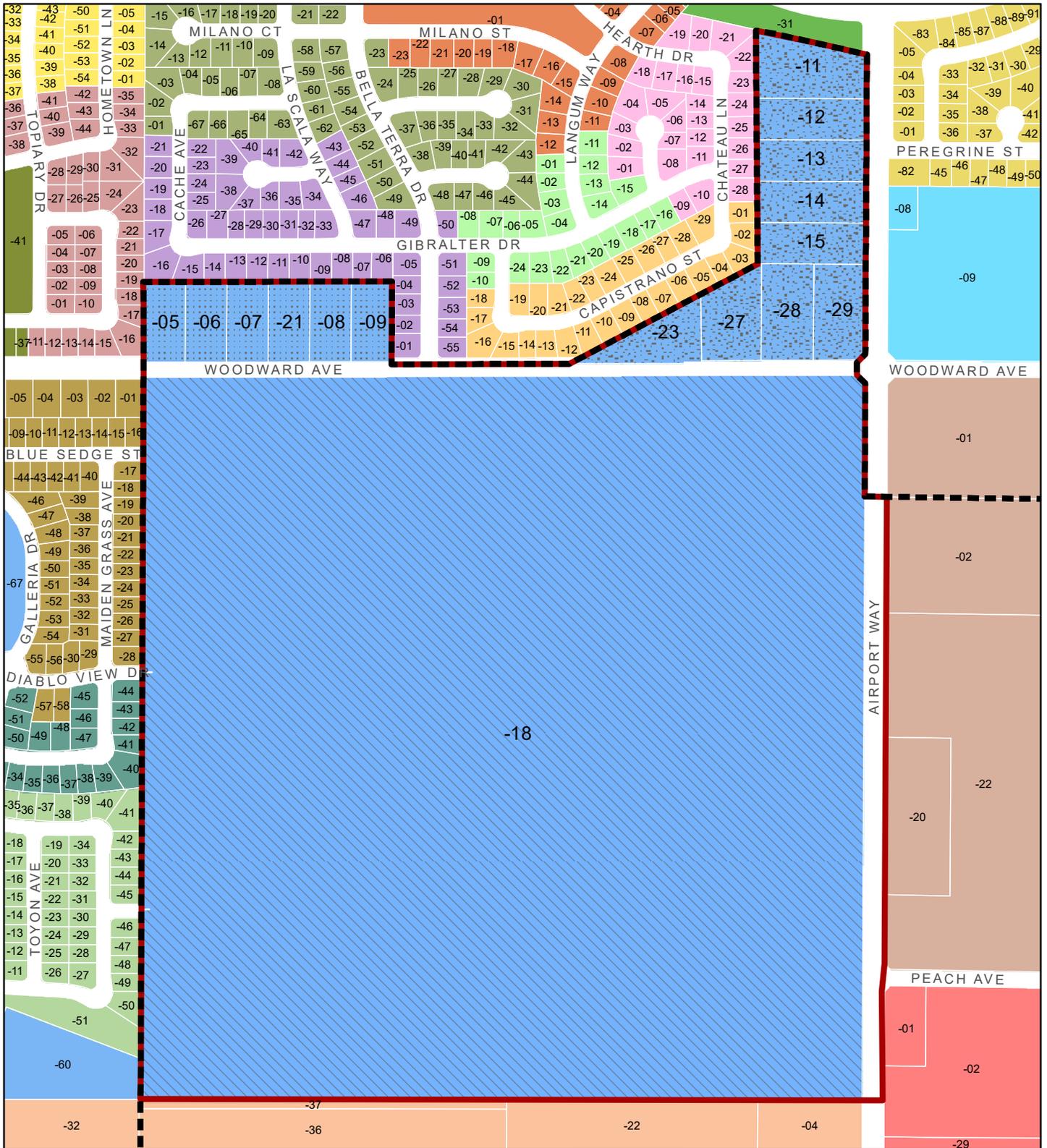
LUMINA at MACHADO RANCH

Figure 2.0-3 USGS Topographic Map

Lathrop Quadrangle

Sources: San Joaquin County GIS; ArcGIS Online Topographic Map Service. Map date: December 23, 2020.

This page intentionally left blank.



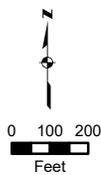
Legend

- Annexation Area
- Manteca City Limits
- Development Area
- Non-Development Area 1
- Non-Development Area 2
- Right-of-Way

Assessor Book and Page of Surrounding Parcels*

226-020	241-440	241-580
226-160	241-450	241-590
226-170	241-460	241-600
226-190	241-470	241-610
241-320	241-480	241-780
241-330	241-490	241-790
241-430	241-500	241-810

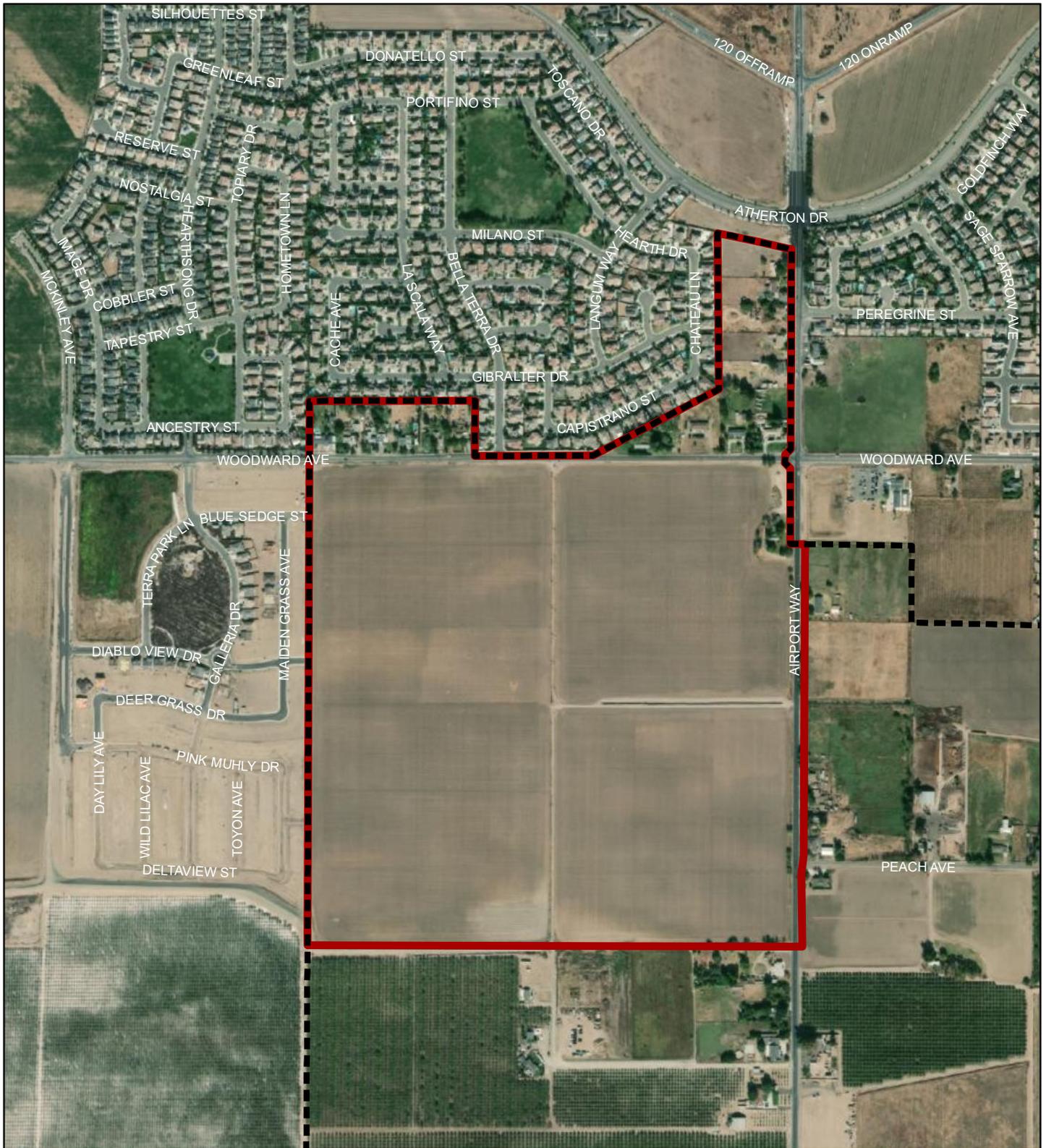
* parcels labeled on map by parcel number (-xx)



LUMINA at MACHADO RANCH
Figure 2.0-4 Assessor Parcel Map

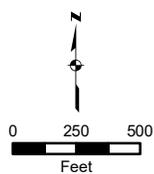
Source: San Joaquin County GIS.
 Map date: December 15, 2023.

This page intentionally left blank.



Legend

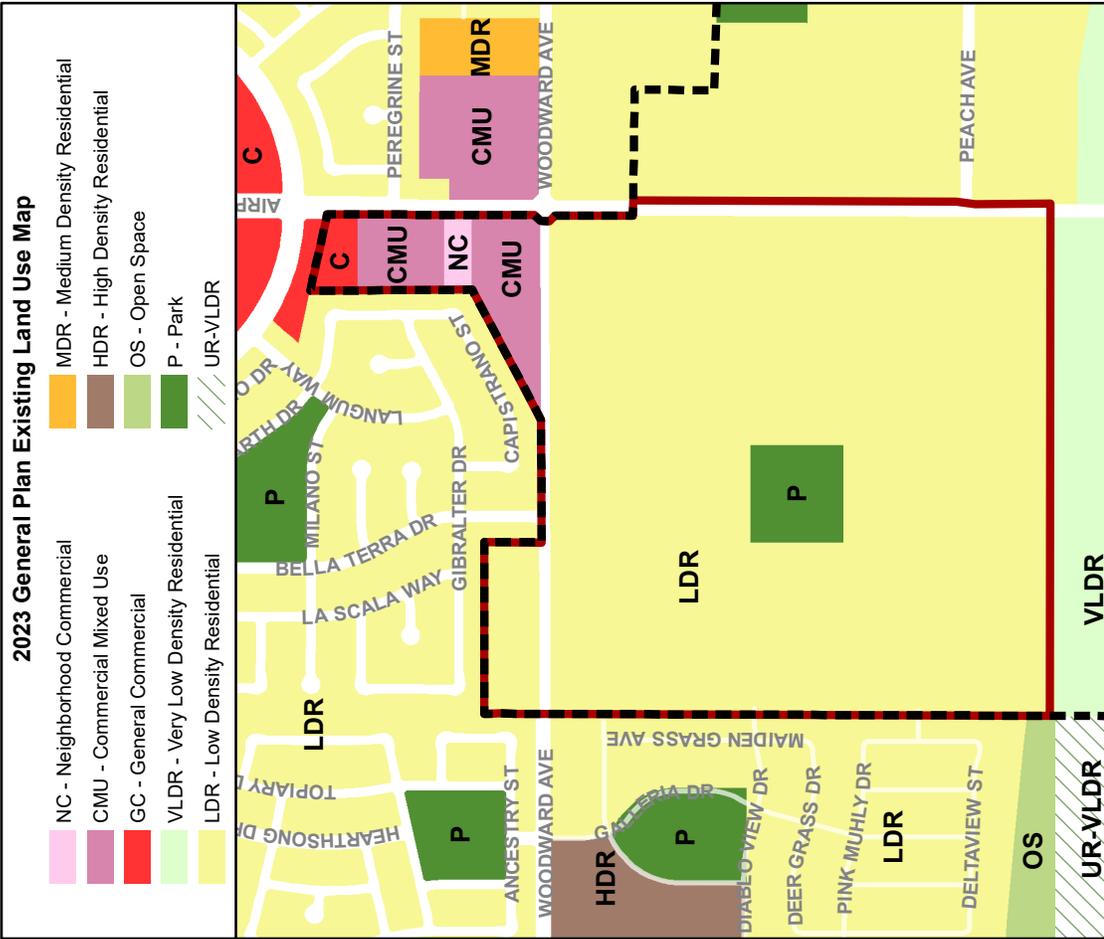
-  Annexation Area
-  Manteca City Boundary



LUMINA at MACHADO RANCH

Figure 2.0-5 Aerial Photo

This page intentionally left blank.



LEGEND

- Manteca City Boundary
- Annexation Area (183.0 ac)

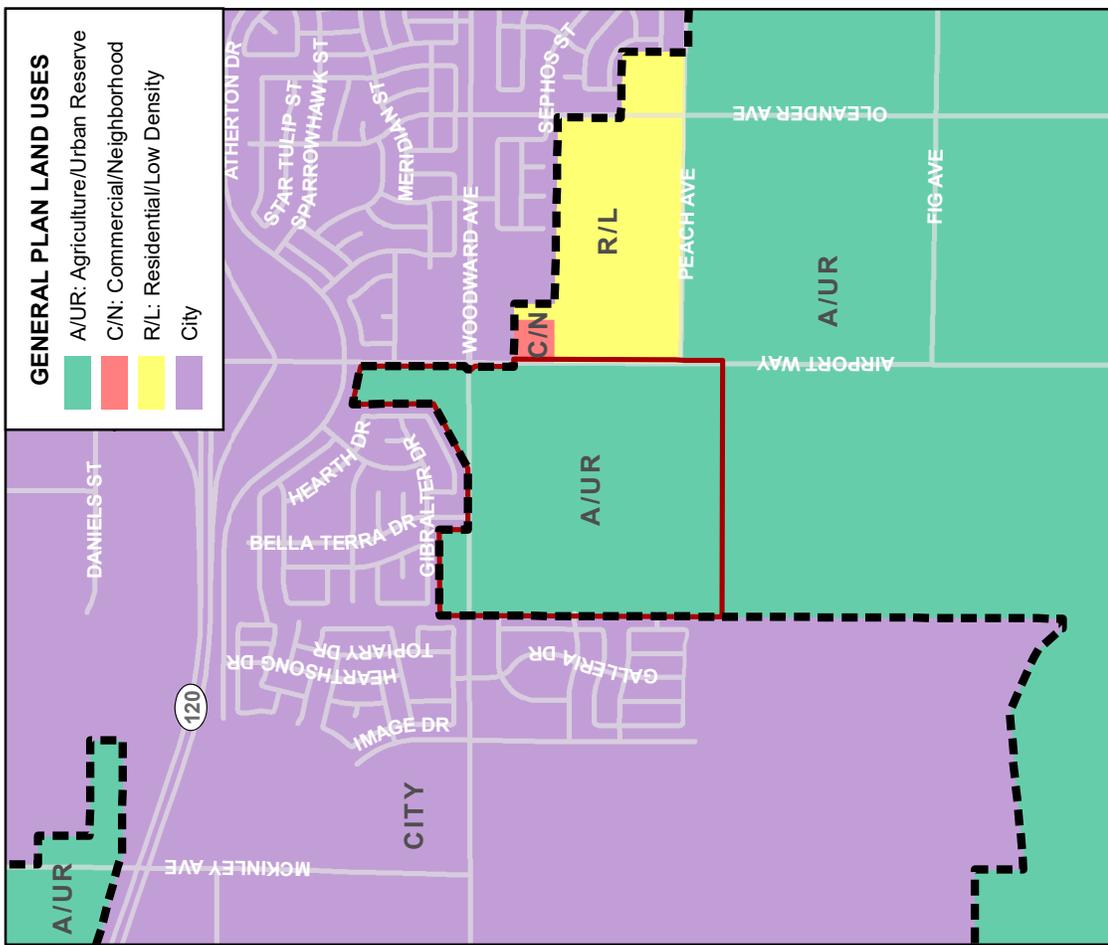
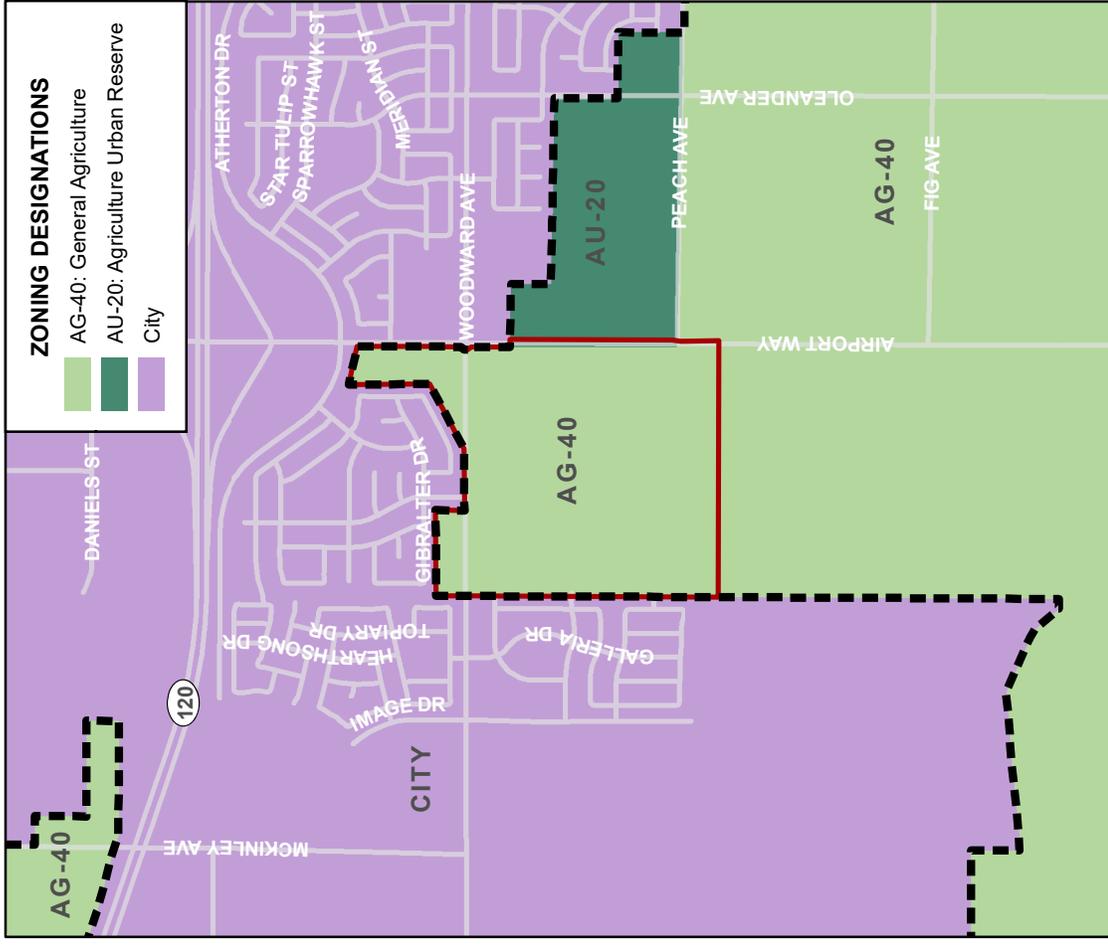
LUMINA at MACHADO RANCH

Figure 2.0-6. City of Manteca Existing General Plan
Land Use Maps
(2023 General Plan vs General Plan Update)

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

Sources: San Joaquin County GIS; City of Manteca. Map date: March 20, 2021.

This page intentionally left blank.



LUMINA at MACHADO RANCH

Figure 2.0-7. San Joaquin County Land Uses and Zoning Designations

LEGEND

- Manteca City Boundary
- Annexation Area (183.0 ac)

Sources: San Joaquin County GIS. Map date: March 20, 2021.

This page intentionally left blank.



LEGEND

- Manteca City Boundary
- Annexation Area (183.0 ac)

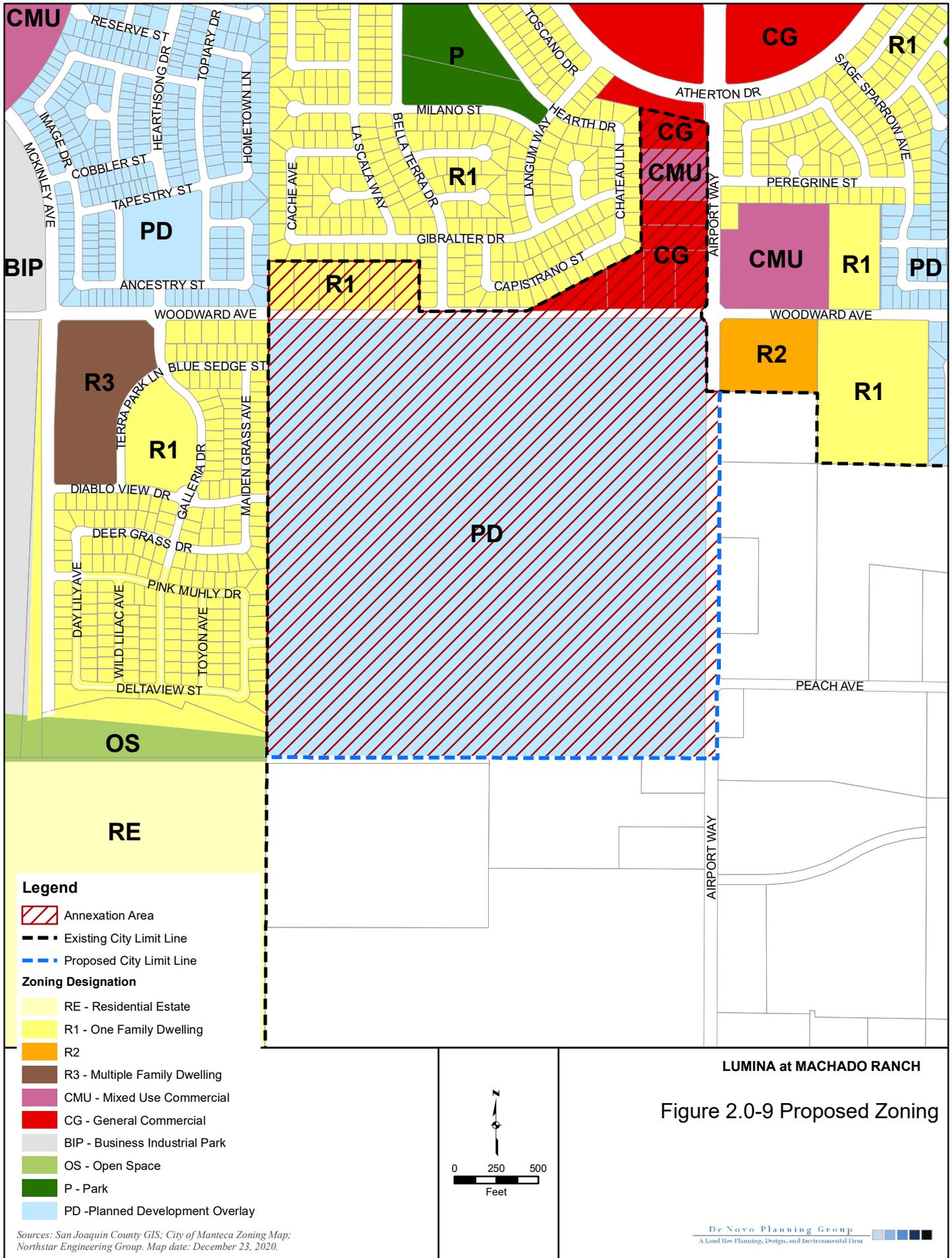
Sources: San Joaquin County GIS; City of Manteca. Map date: March 22, 2021.

LUMINA at MACHADO RANCH

Figure 2.0-8. City of Manteca General Plan Land Use Maps with Amendment (2023 General Plan vs General Plan Update)

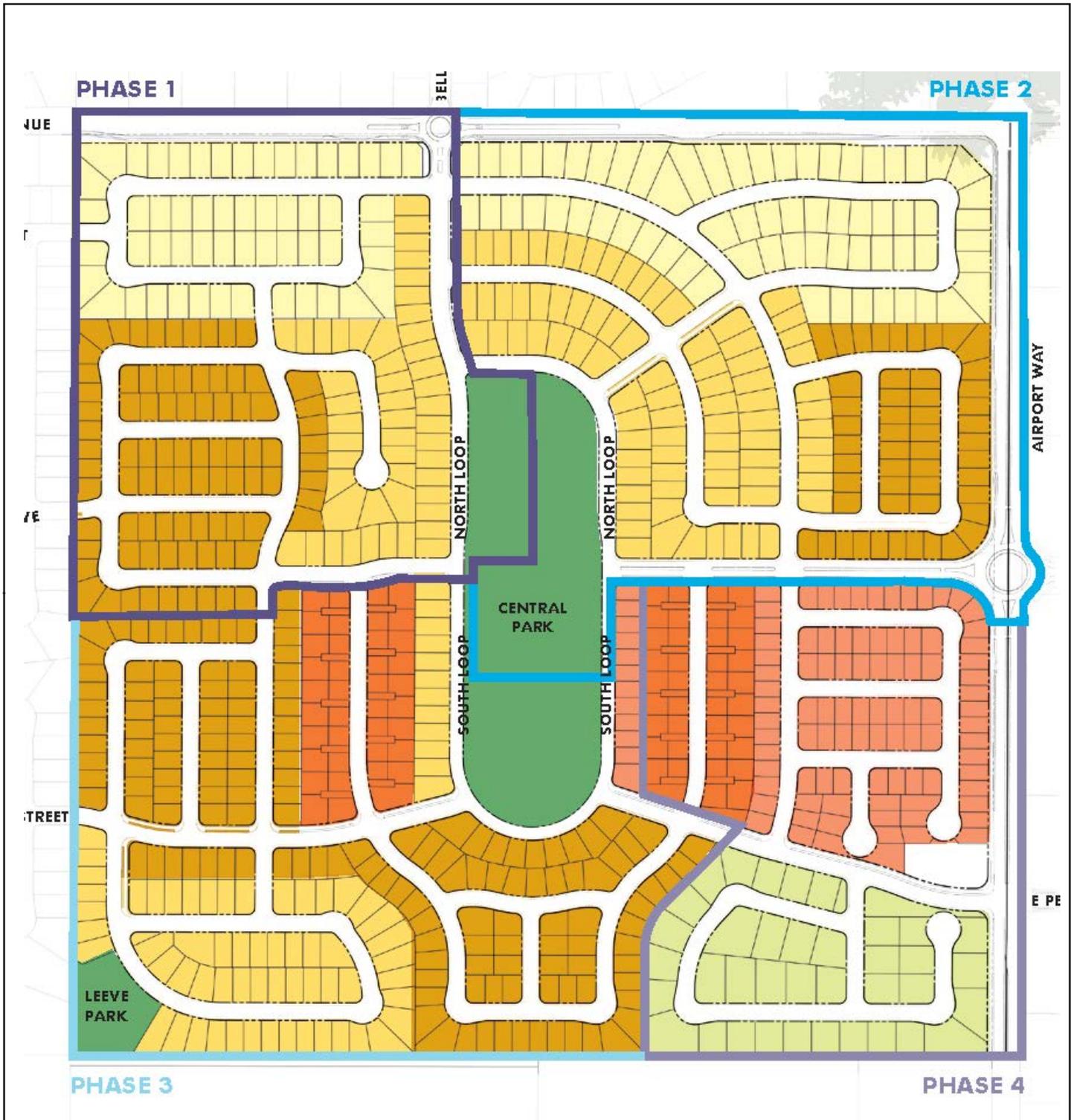
De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page intentionally left blank.

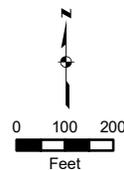


Sources: San Joaquin County GIS; City of Manteca Zoning Map; Northstar Engineering Group. Map date: December 23, 2020.

This page intentionally left blank.

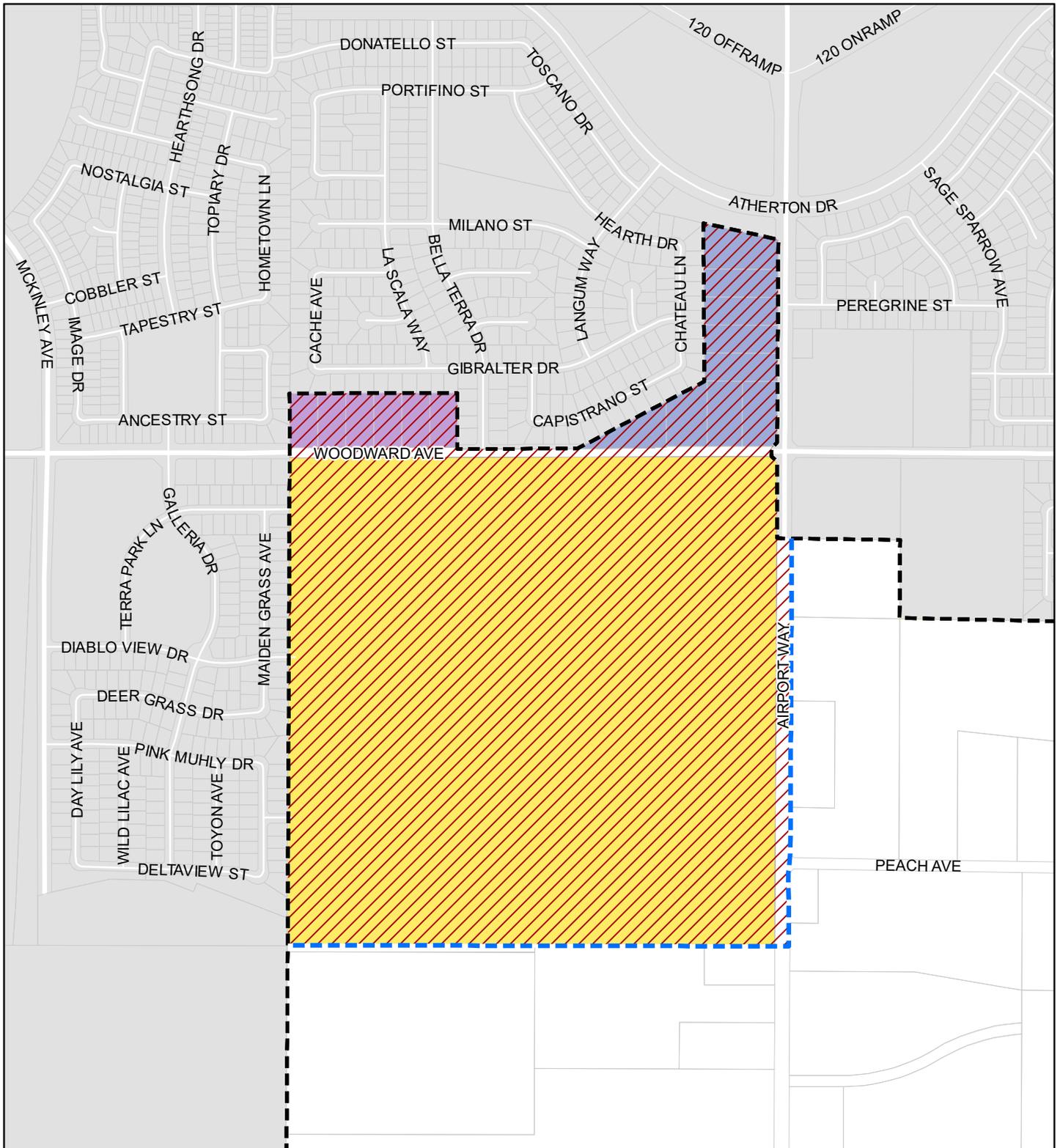


Sources: Northstar Engineering Group. Map date: December 23, 2020.



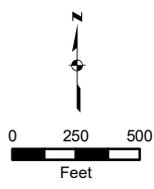
LUMINA RANCH
 Figure 2.0-10
 Site Plan of Development Area

This page intentionally left blank.



Legend

-  City of Manteca
-  Proposed City Limit Line
-  Annexation Area
-  Development Area
-  Non-Development Area 1
-  Non-Development Area 2
-  Right-of-Way (Airport Way and Woodward Ave)



LUMINA at MACHADO RANCH

Figure 2.0-10 Annexation Area

Sources: San Joaquin County GIS; City of Manteca Zoning Map; Northstar Engineering Group. Map date: December 23, 2020.

This page intentionally left blank.

The City of Manteca possesses multiple scenic resources, and there are also scenic resources within the unincorporated areas of San Joaquin County. These resources enhance the quality of life for Manteca residents, and provide for outdoor recreational uses. Landscapes can be defined as a combination of four visual elements: landforms, water, vegetation, and man-made structures. Scenic resource quality is an assessment of the uniqueness or desirability of a visual element. This section provides a background discussion of the scenic highways and corridors, and natural scenic resources such as creeks, wildlife areas, and prominent visual features found in the Project area. This section is organized with an existing setting, regulatory setting, and impact analysis.

This section was prepared based on existing reports and literature for Manteca and the surrounding areas in San Joaquin County. Additional sources of information included the California Department of Transportation's (Caltrans) Designated Scenic Route map for San Joaquin County.

There were no comments received during the NOP comment period related to this environmental topic.

3.1.1 ENVIRONMENTAL SETTING

REGIONAL SCENIC RESOURCES

Visual resources are generally classified into two categories: scenic views and scenic resources. Scenic views are elements of the broader viewshed such as mountain ranges, valleys, and ridgelines. They are usually mid-ground or background elements of a viewshed that can be seen from a range of viewpoints, often along a roadway or other corridor. Scenic resources are specific features of a viewing area (or viewshed) such as trees, rock outcroppings, and historic buildings. They are specific features that act as the focal point of a viewshed and are usually foreground elements.

Aesthetically significant features occur in a diverse array of environments within the region, ranging in character from urban centers to rural agricultural lands to natural water bodies. Features of the built environment that may also have visual significance include individual or groups of structures that are distinctive due to their aesthetic, historical, social, or cultural significance or characteristics. Examples of the visually significant built environment may include bridges or overpasses, architecturally appealing buildings or groups of buildings, landscaped freeways, and a location where a historic event occurred.

SCENIC HIGHWAYS AND CORRIDORS

Scenic highways and corridors make major contributions to the quality of life enjoyed by the residents of a region. The development of community pride, the enhancement of property values, and the protection of aesthetically-pleasing open spaces reflecting a preference for the local lifestyle are all ways in which scenic corridors are valuable to residents.

Scenic highways and corridors can also strengthen the tourist industry. For many visitors, highway corridors will provide their only experience of the region. Enhancement and protection of these

3.1 AESTHETICS AND VISUAL RESOURCES

corridors ensures that the tourist experience continues to be a positive one and, consequently, provides support for the tourist-related activities of the region's economy.

Scenic Highways

A scenic highway is generally defined by Caltrans as a public highway that traverses an area of outstanding scenic quality, containing striking views, flora, geology, or other unique natural attributes. A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.

Only one highway section in San Joaquin County is listed as a Designated Scenic Highway by the Caltrans Scenic Highway Mapping System; the segment of Interstate 580 from Interstate 5 to State Route 205. This route traverses the edge of the Coast Range to the west and Central Valley to the east. The City of Manteca and the Project site are not visible from this roadway segment.

Scenic Corridors

A scenic corridor is the view from the road that may include a distant panorama and/or the immediate roadside area. A scenic corridor encompasses the outstanding natural features and landscapes that are considered scenic. It is the visual quality of the man-made or natural environments within a scenic corridor that are responsible for its scenic value. Commonly, the physical limits of a scenic corridor are broken down into foreground views (zero to one quarter mile) and distant views (over one quarter mile). In addition to distinct foreground and distant views, the visual quality of a scenic corridor is defined by special features, which include:

- Focal points - prominent natural or man-made features which immediately catch the eye.
- Transition areas - locations where the visual environment changes dramatically.
- Gateways - locations which mark the entrance to a community or geographic area.

The City of Manteca has not designated any scenic corridors or viewsheds. As identified in the Open Space Element of the San Joaquin County General Plan, designated scenic routes in the county include Interstate 5 from the Sacramento County line south to Stockton. The City of Manteca is located south of Stockton, and Manteca is not visible from this segment of Interstate 5.

LIGHT AND GLARE

During the day, sunlight reflecting from structures is a primary source of glare, while nighttime light and glare can be divided into both stationary and mobile sources. Stationary sources of nighttime light include structure illumination, interior lighting, decorative landscape lighting, and streetlights. The principal mobile source of nighttime light and glare is vehicle headlamp illumination. This ambient light environment can be accentuated during periods of low clouds or fog.

The variety of urban land uses in the City of Manteca are the main source of daytime and nighttime light and glare. They are typified by single and multi-family residences, commercial structures,

industrial areas, and streetlights. These areas and their associated human activities (inclusive of vehicular traffic) characterize the existing light and glare environment present during daytime and nighttime hours in the urbanized portions of the city. Areas to the north, east and south, outside of the city limits are characterized primarily by open space, agricultural and lower intensity residential development, and generally have lower levels of ambient nighttime lighting and daytime glare. However, areas along State Route (SR) 120 at the southern portion of the city as well as the areas along SR 99 at the eastern portion of the city generally have more sources of glare.

Sources of glare in urbanized portions of the city come from light reflecting off surfaces, including glass, and certain siding and paving materials, as well as metal roofing. The urbanized areas of Manteca contain sidewalks and paved parking areas which reflect street and vehicle lights. The existing light environment found in the project area is considered typical of suburban areas.

Sky glow is the effect created by light reflecting into the night sky. Sky glow is of particular concern in areas surrounding observatories, where darker night sky conditions are necessary, but is also of concern in more rural or natural areas where a darker night sky is either the norm or is important to wildlife. Due to the urban nature of the city limits, a number of existing light sources affect residential areas and illuminate the night sky. Isolating impacts of particular sources of light or glare is therefore not appropriate or feasible for the proposed Project.

VISUAL CHARACTER AND SCENIC WATER RESOURCES

Visual Character and Other Scenic Resources Areas

Manteca's visual character is shaped by its agricultural heritage and suburban development pattern. The City is mostly urbanized with commercial, residential, and industrial uses concentrated along the Highway 99 and Highway 120 interchanges and corridors and other major roadway corridors, including Yosemite Avenue, Airport Way, Main Street, Union Road, Louise Avenue, and Atherton Drive. Residential neighborhoods, including parks and schools, occupy the remainder of the City's urbanized area. Much of the undeveloped land within the City surrounds the developed portion of Manteca and consists of predominantly farmland, including alfalfa, orchards, row crops, and pasture, and rural residential uses.

Farmland and open space, interspersed with rural residential, agricultural, and industrial uses, generally border the City to the north, south, and east. To the west, the City is bordered by industrial uses, the City of Lathrop, the San Joaquin River, Oakwood Lake, and the Oakwood Shores community. Agricultural lands have become important visual resources that contribute to the community identity of Manteca, and the Central Valley region. Agricultural lands provide for visual relief from urbanized areas and act as community separators to nearby urban areas.

3.1 AESTHETICS AND VISUAL RESOURCES

Wild and Scenic Rivers

Water resources are important visual resources that draw tourists to the area for recreational opportunities. The most visually significant water body in the region is the San Joaquin River located approximately 2.1 miles west of the Project site along the southwest border of the City.

Federal agencies have jurisdiction, under the Wild and Scenic Rivers Act, to designate rivers or river sections to “be preserved in free-flowing condition and...protected for the benefit and enjoyment of present and future generations.” The San Joaquin River is not designated a Wild and Scenic River under the Federal Wild and Scenic Rivers Act.

PROJECT SITE

The Project site is located in the southwestern portion of the City of Manteca directly adjacent to the city limits. The Project site is immediately southwest of the intersection of Airport Way and Woodward Avenue. The Project site is bounded on the north by the City of Manteca city limits, on the east by Airport Way, on the south by an existing Reclamation District #2094 (RD2094) dry levee and existing agricultural fields, and on the west by the existing single-family subdivisions. The Project site encompasses 183.46 acres, including a 161.19-acre Development Area, a 19.11-acre Non-development Area, and 3.16 acres of existing right-of-way owned by San Joaquin County.

The Development Area is bordered on the north by Woodward Avenue, on the east by Airport Way, on the south by an existing Reclamation District #2094 (RD2094) dry levee and existing agricultural fields, and on the west by the Terra Ranch Subdivision. The current uses on the Development Area are predominantly agricultural and undeveloped, except for two existing houses and barns and/or sheds with associated equipment in the northeastern portion of the site. Additionally, two dirt/gravel roadways bisect the Development Area, including one roadway running north to south down the center of the Development Area from Woodward Avenue to the southern boundary and another running east to west from Airport Avenue connecting to the dirt/gravel roadway in the center of the Development Area. A South San Joaquin Irrigation District (SSJID) pipeline exists within the Development Area. An RD 2094 dry levee makes up a portion of the southern property line. This dryland levee is not intended to hold floodwaters from the south (upstream), instead it is intended to contain flows on RD 2094 and RD 2096 in the event of a breach of the levees along RD 2094, RD 2096, or RD 17.

The Non-development Area is located south and east of the City of Manteca city limits, west of Airport Way, and north of Woodward Avenue. The Non-development Area contains 15 parcels each developed with a single-family residence. Six of the existing residential homes (Non-development Area 1) are located just north of the Development Area and Woodward Avenue in the northwest corner of the Project site while the remaining nine residential homes (Non-development Area 2) are just north of Woodward Avenue and west of Airport Way in the northeast corner of the Project site.

The Project site is located within Section 12 of Township 2 South, Range 6 East Mount Diablo Base and Meridian (MDBM), and located on the USGS Lathrop, California, 7.5-minute series quadrangle

map. The Project site is relatively flat with natural gentle slope from south to north with an elevation ranging from approximately 19 to 24 feet above sea level.

The Project site is surrounded by a variety of agricultural and residential land uses. Uses immediately south of the Project site include agricultural and residential uses, including ranchettes and large estates lots. Residential subdivisions are located to the north and east of the Project site, including the Terra Ranch Subdivision which borders the Development Area on the west. Existing uses to the east of the Project site include a residential subdivision north of Woodward Avenue and agricultural and rural residential uses south of Woodward Avenue. As a result of site disturbance associated with agricultural operations/farming and the existing residential developments, limited natural scenic areas can be found within the Project site. There is little native vegetation or naturalized habitat located on the site, and the flat topography of the site renders the site essentially void of prominent natural visual features.

The majority of the Project site south of Woodward Avenue is active agricultural land. While this land is disturbed from its natural condition, developed agricultural land can provide visual relief to a passerby/viewer from common manmade structures and visual obstructions found in an urban environment. Agricultural lands provide a sense of openness that is common in natural environments. Throughout the year agricultural operations would result in the land evolving from an environment that appears lush with vegetation (green crops) to an environment that appears barren (recently tilled). Agricultural land in the Central Valley is generally accepted as an important visual resource.

There are no Officially Designated Scenic Highways located through or adjacent to the Project site. The only Officially Designated Scenic Highway in San Joaquin County is I-580 from I-5 to SR 205 located approximately 12.5 miles southwest of the Project site. This scenic highway is not visible from the Project site.

There are minimal existing light sources on the Project site south of Woodward Avenue; light sources are limited to the existing residential homes and barn structures. Other existing lighting in the Project site include: roadway lighting on Woodward Avenue and Airport Way, and lighting from existing residences north of Woodward Avenue. Existing light sources in the vicinity of the Project site include lighting from residential areas to the north and west of the Project site.

3.1.2 REGULATORY SETTING

STATE

California Scenic Highway Program

The intent of the California Scenic Highway Program is “to protect and enhance California’s natural scenic beauty and to protect the social and economic values provided by the State’s scenic resources.” Caltrans administers the program, which was established in 1963 and is governed by the California Streets and Highways Code §260 et seq. The goal of the program is to preserve and protect

3.1 AESTHETICS AND VISUAL RESOURCES

scenic highway corridors from changes that would diminish the aesthetic value of the adjacent land. Caltrans has compiled a list of state highways that are designated as scenic and county highways that are officially designated or eligible for designation as scenic. Scenic highway designation can provide several types of benefits to the region. Scenic areas are protected from encroachment of inappropriate land uses, free of billboards, and are generally required to maintain existing contours and preserve important vegetative features. Only low-density development is allowed on steep slopes and along ridgelines on scenic highways, and noise setbacks are required for residential development.

To obtain an official “Scenic Highway” designation, the State and Caltrans require a responsible local agency or Local Governing Body (LGB) to prepare a scenic corridor protection plan. In the Manteca area, San Joaquin County is the LGB. Corridor protection programs are required to contain the following five elements, which have been included in the San Joaquin County’s policies:

- Regulations of land use and density of development;
- Detailed land and site planning;
- Control of outdoor advertising;
- Careful attention to and control of earthmoving and landscaping; and
- The design and appearance of structures and equipment.¹

According to the Caltrans Scenic Highway Programs website, Caltrans monitors state-designated scenic routes in order to ensure each local jurisdiction’s consistency with State guidelines. Specifically, Caltrans District Scenic Highway Coordinator (DSHC) will review a scenic highway for compliance every five years, but can recommend the revocation of scenic designation at any time. To enforce the program, the DSHC will contact the responsible local agency or LGB, in this case, San Joaquin County. The LGB must either respond by submitting its current Corridor Protection Program or a letter of intent to request a revocation of the scenic designation. The DSHC reviews the submittal and takes corrective action to resolve any issues of non-compliance, certifies compliance, or recommends revocation of scenic designation.

LOCAL

The City of Manteca General Plan identifies visual and scenic resources within the city and recommends measures to protect these resources.

City of Manteca General Plan

The City of Manteca General Plan identifies the importance of visual characteristics in establishing community identity. Attractive new land uses along the major highways, new landmarks visible from

¹ Scenic Highways Program website, List of eligible and officially designated State Scenic Highways (XLSX), <https://www.caltrans.ca.gov/scenic-highways/> | Caltrans, accessed on February 9, 2021.

several vantage points throughout the city, and new gateway features along the highways and other major roads at city boundaries can contribute significantly to establishing a strong positive identity for Manteca.

The City of Manteca General Plan 2023 includes several policies that are relevant to an evaluation of the visual quality of the Project site. However, as previously stated, the City is undergoing an Update to the General Plan. Both existing 2023 General Plan policies and proposed General Plan Update policies applicable to the Project are identified below:

2023 GENERAL PLAN (EXISTING)

Policies: Community Design Element

- CD-P-44. Provide minimal levels of street, parking, building, site and public area lighting to meet safety standards and provide direction.
- CD-P-45. Provide directional shielding for all exterior lighting to minimize the annoyance of direct or indirect glare.
- CD-P-46. Provide automatic shutoff or motion sensors for lighting features in newly developed areas.
- CD-P-47. The City shall adopt light and glare standards that minimize the creation of new light source and the annoyance of direct and indirect glare.

GENERAL PLAN UPDATE

Policies: Community Design Element

- CD-2.1 Promote architectural design that exhibits timeless character and is constructed with high quality materials.
- CD-2.2 Utilize architectural design features (e.g., windows, columns, offset roof planes, etc.) to vertically and horizontally articulate elevations for all sides of buildings.
- CD-2.3 Provide purposeful variations in color, texture, materials, articulation, and architectural treatments that coincide with the associated architectural style. Avoid long expanses of blank, monotonous walls or fences through the use of vertical and horizontal façade or fence articulation achieved through stamping, colors, materials, modulation, and landscaping.
- CD-2.4 For projects that include multiple buildings, encourage differing, but complementary architectural styles that incorporate representative characteristics of a given area.
- CD-2.5 Employ design strategies and building materials that evoke a sense of quality and permanence.
- CD-2.6 Orient building entrance toward the street and provide parking in the rear, when possible.

3.1 AESTHETICS AND VISUAL RESOURCES

- CD-2.9 Ensure that new development and redevelopment reinforces desirable elements of its neighborhood, district, or center, including architectural style, scale, and setback patterns.
- CD-2.10. Encourage context-sensitive transitions in architectural scale and character between new and existing residential development.
- CD-2.11. Provide special building-form elements, such as towers and archways, and other building massing elements to help distinguish activity nodes and establish landmarks within the community.
- CD-2.12. For infill development, incorporate context sensitive design elements that maintain compatibility and raise the quality of the area’s architectural character.
- CD-2.15. Where practical, and in compliance with ADA standards, separate common areas that provide seating from the primary walkways by informal barriers, such as planters, bollards, fountains, low fences, and/or changes in elevation.
- CD-2.16. Design retention/detention basins to be visually attractive and well-integrated with any associated project and with adjacent land uses.
- CD-2.17. Require that lighting and fixtures be integrated with the design and layout of a project and that they provide a desirable level of security and illumination.
- CD-4.1. Strengthen the positive qualities of the City’s neighborhoods, districts, and centers.
- CD-4.2. Support the development and preservation of unique neighborhoods, districts, and centers that exhibit a special sense of place and quality of design.
- CD-4.3. Strengthen the identity of individual neighborhoods, districts, and centers through the use of entry monuments, flags, street signs, themed streets, natural features, landscaping, and lighting.
- CD-4.6. Design neighborhoods, districts, and centers to provide access to adjacent open spaces.
- CD-4.7. Design neighborhoods in new growth areas to incorporate the following characteristics:
 - The edges of the neighborhood shall be identifiable by use of landscaped areas along major streets or natural features, such as permanent open space. Primary arterial streets may be used to define the boundaries of neighborhoods. The street system shall be designed to discourage high volume and high speed traffic through the neighborhood.
 - Neighborhoods shall be not more than one mile in length or width.
 - Each neighborhood shall include a distinct center, such as an elementary school, neighborhood park(s), and/or a mixed-use commercial area within a reasonable walking distance of the homes, approximately one-half mile.

- Each neighborhood shall include an extensive pedestrian and bikeway system comprised of sidewalks and bike lanes along streets and dedicated trails.
- CD-8.1. To the extent possible, require new development to retain or incorporate visual reminders of the agricultural heritage of the community.
- CD-8.2. Utilize wood, wrought-iron, or other types of open fencing instead of block walls in rural areas as needed.
- CD-8.3. Allow for the elimination of vertical curbs, paved gutters, and sidewalks in rural areas if adequate drainage conditions are provided.
- CD-8.4. For lighting in rural areas of the community, provide:
 - Minimal levels of street, parking, building, site and public area lighting to meet safety standards and provide direction.
 - Directional shielding for all exterior lighting to minimize the annoyance of direct or indirect glare.
 - Automatic shutoff or motion sensors for lighting features in newly developed areas.

Implementation: Community Design Element

- CD-2a. Adopt and maintain, in consistency with the General Plan, the City's Zoning regulations, and current best practice design solutions, Citywide Design Guidelines for the architectural review of discretionary projects.
- CD-2b. Require development projects to incorporate Crime Prevention through Environmental Design (CPTED) techniques and defensible space design concepts.
- CD-8a. Require projects developing on the fringe of the City or adjacent to agricultural or rural residential uses to be compatible with the character of the area, including implementing the City's light and glare standards, use of appropriate materials and design, and siting of more intense uses away from rural and agricultural uses, where feasible.

City of Manteca Zoning Ordinance

Chapter 17.48, Landscaping, of the City Zoning Ordinance contains standards and provisions related to landscaping design requirements that would apply to the proposed Project. The primary intent of Chapter 17.48, Landscaping, is to require water efficient landscaping and to promote water conservation. However, this chapter also includes provisions related to landscape design that would apply to the proposed Project. These applicable provisions include parking lot landscaping design standards, setback area landscaping standards, and landscaping standards adjacent to fences and walls.

Chapter 17.50, Lighting, of the City Zoning Ordinance contains standards and provisions related to exterior lighting. The primary purpose of this chapter is to regulate lighting to balance the safety and security needs for lighting with the City's desire to preserve dark skies and to ensure that light trespass and glare have negligible impacts on surrounding property (especially residential) and

3.1 AESTHETICS AND VISUAL RESOURCES

roadways. Section 17.50.070 requires the preparation of an outdoor lighting plan as part of each Site Plan and Design Review application. At a minimum, the outdoor lighting plan shall include the following:

1. Manufacturer specifications sheets, cut sheets, and other manufacturer-provided information for all proposed outdoor light fixtures to show fixture diagrams and outdoor light output levels.
2. The proposed location, mounting height, and aiming point of all outdoor lighting fixtures.
3. If building elevations are proposed for illumination, drawings of all relevant building elevations showing the fixtures, the portions of the elevations to be illuminated, the illumination level of the elevations, and the aiming point for any remote light fixture.
4. Photometric data including a computer-generated photometric grid showing foot-candle readings every 10 feet within the property or site and 10 feet beyond the property lines.

3.1.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

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

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway;
- In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality; and/or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

IMPACTS AND MITIGATION MEASURES

Impact 3.1-1: Project implementation may result in substantial adverse effects on scenic vistas and resources or substantial degradation of visual character. (Significant and Unavoidable)

The proposed Project involves the annexation of 183.46 acres into the City of Manteca, including the proposed 161.19-acre Development Area, 19.11-acre Non-development Area, and 3.16 acres of existing right-of-way, to develop 827 single family detached units, two parks totaling 12.15-acres,

This section provides an overview of the agricultural crops in San Joaquin County and the City of Manteca, agricultural capability of the soils on the Project site, and existing site conditions. This section concludes with an evaluation of the impacts related to agricultural resources and recommendations for mitigating impacts as needed. Information in this section is derived primarily from:

- *City of Manteca General Plan 2023* (City of Manteca, as amended through 2013);
- *Manteca General Plan 2023 Draft Environmental Impact Report* (City of Manteca, 2003);
- *California Important Farmlands Map* (California Department of Conservation, 2019);
- *California Land Conservation (Williamson) Act Status Report* (California Department of Conservation, 2010);
- *San Joaquin County Agricultural Report* (San Joaquin County Agricultural Commissioner, 2016); and
- *Natural Resources Conservation Service (NRCS) Web Soil Survey* (NRCS, 2020).

It is noted that there are no forest resources located on the Project site or in the City of Manteca, thus this CEQA topic is not relevant to the proposed Project and will not be addressed further in this EIR. Additionally, no comments were received during the NOP scoping process related to this environmental topic.

3.2.1 ENVIRONMENTAL SETTING

SAN JOAQUIN COUNTY AGRICULTURE

San Joaquin County occupies a central location in California’s vast agricultural heartland, the San Joaquin Valley. The County’s Agricultural Commissioner’s most recent published Agricultural Reports (2017 and 2018) contains the following information relating to agriculture in the County.

Agricultural Value

San Joaquin County has a total land area of 1,391 square miles. The total acreage of crop land in the county is approximately 772,762 acres. The gross value of agricultural production in San Joaquin County for 2019 was \$2,617,815,000 which represents a 9.1 percent increase from 2018 when gross production value totaled \$2,594,246,000. Table 3.2-1 lists the top eight (8) commodities in San Joaquin County in 2018 and 2019.

TABLE 3.2-1: SUMMARY COMPARISON OF CROP VALUES

<i>PRODUCT TYPE</i>	<i>2017 VALUE IN DOLLARS</i>	<i>2018 VALUE IN DOLLARS</i>
Field Crops	\$200,369,000	\$204,057,000
Vegetable Crops	\$245,902,000	\$228,893,000
Fruit and Nut Crops	\$1,403,768,000	\$1,354,789,000
Nursery Products	\$120,004,000	\$115,542,000
Livestock and Poultry	\$120,100,000	\$540,204,000
Livestock and Poultry Products	\$467,289,000	\$133,196,000
Seed Crops	\$3,904,000	\$3,281,000
Apiary Products	\$32,910,000	\$37,853,000

SOURCE: SAN JOAQUIN COUNTY AGRICULTURAL REPORT, 2018 AND 2019.

AGRICULTURAL CAPABILITY

The California Department of Conservation Farmland Mapping and Monitoring Program identifies lands that have agriculture value and maintains a statewide map of these lands called the Important Farmlands Inventory (IFI). IFI classifies land based upon the productive capabilities of the land, rather than the mere presence of ideal soil conditions.

The suitability of soils for agricultural use is just one factor for determining the productive capabilities of land. Suitability is determined based on many characteristics, including fertility, slope, texture, drainage, depth, and salt content. A variety of classification systems have been devised by the State to categorize soil capabilities. The two most widely used systems are the Capability Classification System and the Storie Index. The Capability Classification System classifies soils from Class I to Class VIII based on their ability to support agriculture with Class I being the highest quality soil. The Storie Index considers other factors such as slope and texture to arrive at a rating. The IFI is in part based upon both of these two classification systems.

Soil Capability Classification System

The Soil Capability Classification System takes into consideration soil limitations, the risk of damage when soils are used, and the way in which soils respond to treatment. Capability classes range from Class I soils, which have few limitations for agriculture, to Class VIII soils that are unsuitable for agriculture. Generally, as the rating of the capability classification increases, yields and profits are more difficult to obtain. A general description of soil classifications, as defined by the Natural Resources Conservation Service (NRCS) is provided in Table 3.2-2 below.

TABLE 3.2-2: SOIL CAPABILITY CLASSIFICATION

CLASS	DEFINITION
I	Soils have slight limitations that restrict their use.
II	Soils have moderate limitations that restrict choice plants or that require moderate conservation practices.
III	Soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.
IV	Soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.
V	Soils are not likely to erode but have other limitations; impractical to remove that limits their use largely to pasture or range, woodland, or wildlife habitat.
VI	Soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife habitat.
VII	Soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to pasture or range, woodland, or wildlife habitat.
VIII	Soils and landforms have limitations that preclude their use for commercial plans and restrict their use to recreation, wildlife habitat, water supply, or aesthetic purposes.

SOURCE: USDA SOIL CONSERVATION SERVICE.

Storie Index Rating System

The Storie Index Rating system ranks soil characteristics according to their suitability for agriculture from Grade 1 soils (80 to 100 rating) which have few or no limitations for agricultural production, to Grade 6 soils (less than 10) which are not suitable for agriculture. Under this system, soils deemed

less than prime can function as prime soils when limitations such as poor drainage, slopes, or soil nutrient deficiencies are partially or entirely removed. The six grades, ranges in index rating, and definition of the grades, as defined by the NRCS, are provided below in Table 3.2-3.

TABLE 3.2-3: STORIE INDEX RATING SYSTEM

<i>GRADE</i>	<i>INDEX RATING</i>	<i>DEFINITION</i>
1	80 – 100	Few limitations that restrict their use for crops
2	60 – 80	Suitable for most crops, but have minor limitations that narrow the choice of crops and have a few special management needs
3	40 – 60	Suited to a few crops or to special crops and require special management
4	20 – 40	If used for crops, severely limited and require special management
5	10 – 20	Not suited for cultivated crops, but can be used for pasture and range
6	Less than 10	Soil and land types generally not suited to farming

SOURCE: USDA SOIL CONSERVATION SERVICE, SOIL SURVEY OF YOLO COUNTY, CALIFORNIA, 1972.

In addition to soil suitability, other factors for determining the agricultural value of land include whether soils are irrigated, the depth of soil, water-holding capacity, and physical and chemical characteristics. Areas considered to have the greatest agricultural potential are designated as Prime Farmland or Farmland of Statewide Importance.

Important Farmlands

The Farmland Mapping and Monitoring Program (FMMP) is a farmland classification system administered by the California Department of Conservation. Important farmland maps are based on the Land Inventory and Monitoring criteria, which classify a land’s suitability for agricultural production based on both the physical and chemical characteristics of soils, and the actual land use. The system maps five categories of agricultural land, which include important farmlands (prime farmland, farmland of statewide importance, unique farmland, and farmland of local importance) and grazing land, as well as three categories of non-agricultural land, which include urban and built-up land, other land, and water area.

IMPORTANT FARMLANDS IN SAN JOAQUIN COUNTY

Data from the Department of Conservation indicates that approximately 1,858 acres of Prime Farmland in the County was developed for other uses between 2016 and 2018, resulting in an existing total of 381,934 acres of Prime Farmland (42 percent of agricultural land). The remaining agricultural land is comprised of Farmland of Statewide Importance (9 percent), Unique Farmland (9 percent), Farmland of Local Importance (7 percent), and Grazing Land (14 percent). The types and acreages of farmland in 2016 and 2018 are shown in Table 3.2-4.

3.2 AGRICULTURAL RESOURCES

TABLE 3.2-4: SAN JOAQUIN COUNTY FARMLANDS SUMMARY AND CHANGE BY LAND USE CATEGORY

LAND USE CATEGORY	2016-2018 ACREAGE CHANGES							
	TOTAL ACREAGE INVENTORIED				ACRES LOST	ACRES GAINED	TOTAL	NET
	2016		2018		(-)	(+)	ACREAGE CHANGED	ACREAGE CHANGED
	Acres	Percent	Acres	Percent				
Prime Farmland	381,634	42%	381,984	42%	1,858	2,210	4,068	352
Farmland of Statewide Importance	82,618	9%	82,163	9%	921	466	1,387	-455
Unique Farmland	81,920	9%	85,694	9%	402	4,174	4,576	3,772
Farmland of Local Importance	68,903	8%	65,944	7%	5,507	2,547	8,054	-2,960
IMPORTANT FARMLAND SUBTOTAL	615,075	67%	615,785	67%	8,688	9,397	18,085	709
Grazing Land	129,760	14%	126,902	14%	2,893	37	2,930	-2,856
AGRICULTURAL LAND SUBTOTAL	744,835	82%	742,687	81%	11,581	9,434	21,015	-2,147
Urban and Built-up Land	95,329	10%	97,541	11%	121	2,332	2,453	2,211
Other Land	60,602	7%	60,987	7%	922	1,312	2,234	390
Water Area	11,836	1%	11,382	1%	680	226	906	-454
TOTAL AREA INVENTORIED	912,602	100%	912,597	100%	13,304	13,304	26,608	0

SOURCE: CA DEPARTMENT OF CONSERVATION, DIVISION OF LAND RESOURCE PROTECTION TABLE A-30, 2018.

EXISTING SITE CONDITIONS

The Project site is located in the southwestern portion of the City of Manteca directly adjacent to the city limits. The Project site is immediately southwest of the intersection of Airport Way and Woodward Avenue. The Project site is bounded on the north by the City of Manteca city limits, on the east by Airport Way, on the south by an existing Reclamation District #2094 (RD2094) dry levee and existing agricultural fields, and on the west by the existing single-family subdivisions. The Project site encompasses 183.46 acres, including a 161.19-acre Development Area, a 19.11-acre Non-development Area, and 3.16 acres of existing right-of-way owned by San Joaquin County.

The Development Area is bordered on the north by Woodward Avenue, on the east by Airport Way, on the south by an existing Reclamation District #2094 (RD2094) dry levee and existing agricultural fields, and on the west by the Terra Ranch Subdivision. The current uses on the Development Area are predominantly agricultural and undeveloped, except for two existing houses and barns and/or sheds with associated equipment in the northeastern portion of the site. Additionally, two dirt/gravel roadways bisect the Development Area, including one roadway running north to south down the center of the Development Area from Woodward Avenue to the southern boundary and another running east to west from Airport Avenue connecting to the dirt/gravel roadway in the center of the Development Area. A South San Joaquin Irrigation District (SSJID) pipeline exists within the Development Area. An RD 2094 dry levee makes up a portion of the southern property line. This dryland levee is not intended to hold floodwaters from the south (upstream), instead it is intended to contain flows on RD 2094 and RD 2096 in the event of a levee breach of levees along RD 2094, RD 2096, or RD 17.

The Non-development Area is located south and east of the City of Manteca city limits, west of Airport Way, and north of Woodward Avenue. The Non-development Area contains 15 parcels each developed with a single-family residence. Six of the existing residential homes (Non-development Area 1) are located just north of the Development Area and Woodward Avenue in the northwest corner of the Project site while the remaining nine residential homes (Non-development Area 2) are just north of Woodward Avenue and west of Airport Way in the northeast corner of the Project site.

The Project site is located within Section 12 of Township 2 South, Range 6 East Mount Diablo Base and Meridian (MDBM), and located on the USGS Lathrop, California, 7.5-minute series quadrangle map. The Project site is relatively flat with natural gentle slope from south to north with an elevation ranging from approximately 19 to 24 feet above sea level.

Surrounding Land Uses

The Project site is surrounded by a variety of agricultural and residential land uses. Uses immediately south of the Project site include agricultural and residential uses, including ranchettes and large estates lots. Residential subdivisions are located to the north and east of the Project site, including the Terra Ranch Subdivision which borders the Development Area on the west. Existing uses to the east of the Project site include a residential subdivision north of Woodward Avenue and agricultural and rural residential uses south of Woodward Avenue.

Project Site Farmland Characteristics

The State of California Department of Conservation FMMP and San Joaquin County GIS data were used to illustrate the farmland characteristics for the Project site. Farmlands on the Project site are identified in Figure 3.2-1. The farmland classifications for the site and surrounding area are described below.

PRIME FARMLAND

Prime Farmland is farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

Approximately 10.3 acres of Prime Farmland are located in the southeastern corner of the Project site. Prime Farmlands are also located southeast, south, and west of the Project site.

FARMLAND OF STATEWIDE IMPORTANCE

Farmland of Statewide Importance is farmland with characteristics similar to those of Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

3.2 AGRICULTURAL RESOURCES

The majority of the Project site, approximately 148.0 acres, is designated Farmland of Statewide Importance as shown on Figure 3.2-1. Farmland of Statewide Importance is also located in the general vicinity of the Project site to the east, south, and west.

UNIQUE FARMLAND

Unique Farmland is farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

There is no Unique Farmland within the Project site, or in the immediately vicinity, that is designated Unique Farmland.

FARMLAND OF LOCAL IMPORTANCE

Farmland of Local Importance is land of importance to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee.

There is no Farmland of Local Importance located within the Project site. Farmland of Local Importance is located to the east of the Project site.

URBAN AND BUILT-UP LAND

Urban and Built-up Land is land occupied by structures with a building density of at least one (1) unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

Approximately 9.0 acres of Urban and Built-up Land is located on the northern portion of the Project site. Urban and Built-up Land is located to the north and east of the Project site.

RURAL RESIDENTIAL LAND

Rural Residential Land has a building density of less than 1 structure per 1.5 acres, but with at least 1 structure per 10 acres. Approximately 15.7 acres of Rural Residential land are located within the northeastern portion of the Project site. Additionally, areas of Rural Residential Land are found adjacent to the Project site to the east of Airport Way.

OTHER LAND

Other Land is not included in any other mapping category. Common examples include brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty (40) acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

Other Land is not located on the Project site or within the general vicinity of the Project as shown on Figure 3.2-1.

Soils and Farmland Characteristics

A Custom Soil Survey was completed for the Project site using the NRCS Web Soil Survey program. Table 3.2-5 identifies the soils found in the Project area. The NRCS Soils Map is provided on Figure 3.2-2.

TABLE 3.2-5: PROJECT SITE SOILS

<i>UNIT SYMBOL</i>	<i>NAME</i>	<i>ACRES IN AOI (AREA OF INTEREST)</i>	<i>PERCENT OF AOI</i>	<i>CAPABILITY CLASSIFICATION*</i>
108	Arents, saline-sodic	19.4	10.6%	III-IV
109	Bisgani loamy coarse sand	85.9	47.0%	III-IV
142	Delhi loamy sand	17.1	9.3%	III-IV
160	Galt clay	48.7	26.6%	III-IV
196	Manteca fine sandy loam	0.2	0.1%	III-IV
255	Tinnin loamy coarse sand	0.5	0.3%	III-IV
266	Veritas fine sandy loam	11.2	6.1%	II-IV

* DEPICTS IRRIGATED VS NON IRRIGATED CAPABILITY RATING

SOURCE: NRCS CUSTOM WEB SOIL SURVEY, 2021; SAN JOAQUIN COUNTY SOIL SURVEY, 1992.

Arents, saline-sodic. This series consists of very deep, well drained soils formed in materials weathered from a fanglomerate of quartzite, sandstone, aporhyolite, and other rocks held together in a red sandy matrix. Slopes range from 0 to 2 percent. This series is characterized as well draining, medium to very rapid runoff, and permeability is moderate to moderately rapid. This series is commonly used as cropland, urban land, or pasture.

Bisgani loamy coarse sand. This series consists of very deep, poorly drained soils that formed in mixed alluvium dominantly from granitic rock sources. Bisgani soils are on bars, flood plains, low alluvial fans, basins floors and valley basins. Slope is 0 to 2 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 62 degrees F. These soils occur near the San Joaquin River in the central part of the San Joaquin Valley of California and are not extensive. Most of these soils are cultivated and irrigated. They are principally used for field crops and vegetable production with small acreage of orchard and pasture. The remainder is annual range vegetation.

Delhi loamy sands. This series consists of very deep, somewhat excessively drained soils. They formed in wind modified material weathered from granitic rock sources. Delhi soils are on floodplains, alluvial fans and terraces. Slopes are 0 to 15 percent. They have negligible to slow runoff and rapid permeability. Common uses for this series include: growing grapes, peaches, truck crops, alfalfa and for home sites. Principal native plants are buckwheat and a few shrubs and trees. Typical vegetation is annual grasses and forbs.

3.2 AGRICULTURAL RESOURCES

Galt Clay. This series consists of moderately deep, moderately well drained soils that formed in fine textured alluvium from mixed but dominantly granitic rock sources. Galt soils are on low terraces, basins and basin rims and have slopes of 0 to 5 percent. The mean annual precipitation is about 16 inches and the mean annual temperature is about 60 degrees. Used for range, dryland crops, irrigated pasture, rice and irrigated field crops. Moderately well drained; runoff is ponded to medium; slow permeability. Some areas are rarely or occasionally flooded for brief to long periods in December through April. Natural vegetation is soft chess, annual ryegrass, foxtail fescue, broadleaf filaree and clovers.

Manteca Fine Sandy Loam. The Manteca series consists of moderately deep to hardpan, moderately well drained soils that formed in alluvium derived from mixed rock sources. Manteca soils are on low terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 11 inches and the mean annual temperature is about 60 degrees. These soils are used for irrigated crops. Alfalfa, almonds, barley, corn, grapes, melons, pasture and tomatoes are the principal crops. Vegetation is soft chess, wild oats, ripgut brome, turkey mullein and other annual grasses, forbs and scattered valley oaks.

Tinnin loamy coarse sand. This series consists of well drained soils on low fan terraces and alluvial fans. These soils are very deep, and form in alluvium derived from granitic rock sources. Slopes range from 0 to 2 percent. This series is characterized as well draining, slow runoff, and rapid permeability. Common uses for this series are irrigated cropland growing primarily almonds, alfalfa, onions, tomatoes, small grains, grapes and pasture. Vegetation consists of red brome, filaree, soft chess, wildoats, ripgut brome and scattered valley oaks.

Veritas fine sandy loam. This series consists of deep to duripan, moderately well drained soils. They formed in alluvium derived from mixed rock sources. Veritas soils are on low fan terraces. They have slow runoff and moderately rapid permeability. Common uses for this series include irrigated cropland. Alfalfa, barley and corn are the principal crops. Vegetation is annual grasses, forbs and scattered valley oaks.

3.2.2 REGULATORY SETTING

FEDERAL

Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) is intended to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. It ensures that, to the extent practicable, federal programs are compatible with State and local units of government as well as private programs and policies to protect farmland. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or with assistance from a federal agency. For the purpose of the FPPA, farmland includes Prime Farmland, Unique Farmland, and Land of Statewide or Local Importance. Farmland subject to FPPA requirements does not have to be currently used for crop production. In fact, the land can be forest land, pastureland, cropland, or

other land but does not include water bodies or land developed for urban land uses (i.e., residential, commercial, or industrial uses).

The Natural Resource Conservation Service (NRCS) administers the Farmland Protection Program. NRCS uses a land evaluation and site assessment (LESA) system to establish a farmland conversion impact rating score on proposed sites of federally funded and assisted projects. This score is used as an indicator for the project sponsor to consider alternative sites if the potential adverse impacts on the farmland exceed the recommended allowable level. The assessment is completed on form AD-1006, Farmland Conversion Impact Rating. The sponsoring agency completes the site assessment portion of the AD-1006, which assesses non-soil related criteria such as the potential for impact on the local agricultural economy if the land is converted to non-farm use and compatibility with existing agricultural use.

The Project site and adjacent parcels will not be completed by a federal agency, or with assistance from a federal agency. Therefore, the Project will not be subject to the FPPA.

STATE

Williamson Act

The California Land Conservation Act of 1965, commonly known as the Williamson Act, was established based on numerous State legislative findings regarding the importance of agricultural lands in an urbanizing society. Policies emanating from those findings include those that discourage premature and unnecessary conversion of agricultural land to urban uses and discourage discontinuous urban development patterns, which unnecessarily increase the costs of community services to community residents.

The Williamson Act authorizes each County to establish an agricultural preserve. Land that is within the agricultural preserve is eligible to be placed under a contract between the property owner and County that would restrict the use of the land to agriculture in exchange for a tax assessment that is based on the yearly production yield. The contracts have a 10-year term that is automatically renewed each year, unless the property owner requests a non-renewal or the contract is cancelled. If the contract is cancelled the property owner is assessed a fee of up to 12.5 percent of the property value.

The Project site is not under a Williamson Act contract, nor are any of the parcels that are located adjacent to the Project site under a current contract.

Farmland Security Zones

In 1998 the State legislature established the Farmland Security Zone (FSZ) program. FSZs are similar to Williamson Act contracts, in that the intention is to protect farmland from conversion. The main difference however, is that the FSZ must be designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. The term of the contract is a minimum of 20 years. The property owners are offered an incentive of greater property tax reductions when compared to the Williamson Act contract tax incentives; the incentives were

3.2 AGRICULTURAL RESOURCES

developed to encourage conservation of prime farmland through FSZs. The non-renewal and cancellation procedures are similar to those for Williamson Act contracts.

The Project site and the adjacent parcels are not within the FSZ program.

California Government Code Section 56064

This section of the Government Codes defines “Prime agricultural land” as follows:

- Prime agricultural land means an area of land, whether a single parcel or contiguous parcels, that has not been developed for a use other than an agricultural use and that meets any of the following qualifications:
 - Land that qualifies, if irrigated, for rating as Class I or Class II in the USDA Natural Resources Conservation Service land use capability classification, whether or not land is actually irrigated, provided that irrigation is feasible.
 - Land that qualifies for rating 80 through 100 Storie Index Rating.
 - Land that supports livestock used for the production of food and fiber and that has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture in the National Range and Pasture Handbook, Revision 1, December 2003.
 - Land planted with fruit or nut-bearing trees, vines, bushes, or crops that have a nonbearing period of less than five years and that will re-turn during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than four hundred dollars (\$400) per acre.
 - Land that has returned from the production of unprocessed agricultural plant products an annual gross value of not less than four hundred dollars (\$400) per acre for three of the previous five calendar years.

LOCAL

Local Agency Formation Commission Boundary Controls

The San Joaquin Local Agency Formation Commission (LAFCo) is responsible for coordinating orderly amendments to local jurisdictional boundaries, including annexations. Annexation of the Project site into the City of Manteca would be subject to LAFCo approval, and LAFCo’s decision is governed by state law (Gov’t Code § 56001 et seq.) and the local LAFCo Policies and Procedures. State law requires LAFCo to consider agricultural land and open space preservation in all decisions related to expansion of urban development. LAFCo’s definition of Prime Agriculture land refers to California Government Code Section 56064, which is described above.

City of Manteca General Plan

The General Plan includes several policies relevant to agricultural resources. 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 existing 2023 General Plan policies and proposed General Plan Update policies applicable to the Project are identified below:

2023 GENERAL PLAN (EXISTING)

Policies: Resource Conservation Element

- RC-P-19. The City shall support the continuation of agricultural uses on lands designated for urban use, until urban development is imminent.
- RC-P-20. The City shall provide an orderly and phased development pattern so that farmland is not subjected to premature development pressure.
- RC-P-21. In approving urban development near existing agricultural lands, the City shall take actions so that such development will not unnecessarily constrain agricultural practices or adversely affect the viability of nearby agricultural operations.
- RC-P-23. Protect designated agricultural lands, without placing an undue burden on agricultural landowners.
- RC-P-24. Provide buffers at the interface of urban development and farmland; in order to minimize conflicts between these uses.
- RC-P-25. The City shall ensure, in approving urban development near existing agricultural lands, that such development will not unnecessarily constrain agricultural practices or adversely affect the economic viability of nearby agricultural operations.
- RC-P-28. The City shall not extend water and sewer lines to premature urban development that would adversely affect agricultural operations.
- RC-P-30. The City of Manteca will participate in a county-wide program to mitigate the conversion of Prime Farmland and Farmlands of Statewide Importance to urban uses.

Implementation: Resource Conservation Element

- RC-I-30. Apply the following conditions of approval where urban development occurs next to farmland:
 - Require notifications in urban property deeds that agricultural operations are in the vicinity, in keeping with the City's right-to-farm ordinance.
 - Require adequate and secure fencing at the interface of urban and agricultural use.
 - Require phasing of new residential subdivisions; so as to include an interim buffer between residential and agricultural use.

GENERAL PLAN UPDATE

Policies: Resource Conservation Element

- RC-8.1. Support the continuation of agricultural uses on lands designated for urban use, until urban development is imminent.

3.2 AGRICULTURAL RESOURCES

- RC-8.2. Provide an orderly and phased development pattern, encouraging the development of vacant lands within City boundaries prior to conversion of agricultural lands, so that farmland is not subjected to premature development pressure.
- RC-8.3. Encourage permanent agricultural lands surrounding the Planning Area to serve as community separators and continue the agricultural heritage of Manteca.
- RC-8.4. Support and encourage the preservation of designated Agriculture lands, without placing an undue burden on agricultural landowners.
- RC-8.5. Minimize conflicts between agricultural and urban land uses.
- RC-8.6. Ensure that urban development near existing agricultural lands will not unnecessarily constrain agricultural practices or adversely affect the economic viability of nearby agricultural operations.
- RC-8.7. Prohibit the fragmentation of agricultural parcels into small rural residential parcels except in areas designated for urban development in the Land Use Diagram.
- RC-8.9. Work with the Local Agency Formation Commission (LAFCO) on issues of mutual concern including the conservation of agricultural land through consistent use of LAFCO policies, particularly those related to conversion of agricultural lands and establishment of adequate buffers between agricultural and non-agricultural uses, and the designation of a reasonable and logical Sphere of Influence boundary for the City.
- RC-8.10. Prohibit re-designation of Agricultural lands to other land use designations unless all of the following findings can be made:
 - There is a public need or net community benefit derived from the conversion of the land that outweighs the need to protect the land for long-term agricultural use.
 - There are no feasible alternative locations for the proposed project that are either designated for non-agricultural land uses or are less productive agricultural lands.
 - The use would not have a significant adverse effect on existing or potential agricultural activities on surrounding lands designated Agriculture.
- RC- P-8.11. Require the development projects to reduce impacts on agricultural lands through the use of buffers, such as greenbelts, drainage features, parks, or other improved and maintained features, in order to separate residential and other sensitive land uses, such as schools and hospitals, from agricultural operations and from lands designated Agriculture.
- RC-8.12. Work with agricultural landowners to improve practices that have resulted in adverse impacts to adjacent properties. Such practices include site drainage and flood control measures.
- RC-8.15. Do not extend water and sewer lines to noncontiguous urban development that would adversely affect agricultural operations.

Implementation: Resource Conservation Element

- RC-8a. Continue to implement Chapter 8.24 (Right to Farm) of the Municipal Code in order to protect farming uses from encroaching urban uses and to notify potential homebuyers of nearby agricultural operations.
- RC-8b. Consider impacts to agricultural lands and agricultural productivity when reviewing new development projects, amendments to the General Plan, and rezoning applications.
- RC-8c. Amend Title 17 (Zoning) of the Municipal Code to include specific agricultural buffer requirements for residential and sensitive land uses (i.e., schools, day care facilities, and medical facilities) that are proposed near existing agricultural lands in order to protect the associated agricultural operations from encroachment by incompatible uses. Buffers shall generally be defined as a physical separation, depending on the land use, and may consist of topographic features, roadways, bike/pedestrian paths, greenbelts, water courses, or similar features. The buffer shall occur on the parcel for which a permit is sought and shall favor protection of the maximum amount of agricultural land.
- RC-8e. Apply the following conditions of approval where urban development occurs next to farmland.
 - Require notifications in urban property deeds that agricultural operations are in the vicinity, in keeping with the City's right-to-farm ordinance.
 - Require adequate and secure fencing at the interface of urban and agricultural use.
 - Require phasing of new residential subdivisions; so as to include an interim buffer between residential and agricultural use.
 - Require a buffer, which may include a roadway and landscaped buffer, open space transition area, or low intensity uses, between urban uses and lands designated Agriculture on the Land Use Map.
- RC-8f. Work with San Joaquin County on the following issues:
 - The establishment and implementation of consistent policies for agricultural lands in the Planning Area that prioritize the preservation of agricultural lands and support ongoing agricultural activities.
 - Pesticide application and types of agricultural operations adjacent to urban uses.
 - Support the continuation of County agricultural zoning in areas designated for agricultural land use in the Area Plan.

City of Manteca Agricultural Mitigation Fee Program

Chapter 13.42 of the Municipal Code establishes the City's Agricultural Mitigation Fee Program, which authorizes the collection of development impact fees to offset costs associated with the loss of productive agricultural lands converted for urban uses within the City. Agricultural mitigation fees are required to be paid prior to issuance of any building permit. Fees are used to protect agricultural lands planned for agricultural use. Fees collected under Chapter 13.42 may be used as fair

compensation for farmland conservation easements or farmland deed restrictions that conserve existing agricultural land.

City of Manteca Right to Farm Ordinance

Chapter 8.24 of the Municipal Code establishes the City's "Right to Farm" ordinance, which is intended to protect agricultural uses in the City. The ordinance establishes the City's policy to preserve, protect and encourage the use of viable agricultural land for the production of food and other agricultural products. Chapter 8.24 identifies that when nonagricultural land uses extend into or approach agricultural areas, conflicts may arise between such land uses and agricultural operations that often result in the involuntary curtailment or cessation of agricultural operations, and discourage investment in such operations.

Chapter 8.24 of the City's Municipal Code is intended to reduce the occurrence of such conflicts between nonagricultural and agricultural land uses within the City through requiring the transferor of any property in the City to provide a disclosure statement describing that the City permits agricultural operations, including those that utilize chemical fertilizers and pesticides. The disclosure statement notifies the purchaser that the property being purchased may be located close to agricultural lands and operations and that the purchaser may be subject to inconvenience or discomfort arising from the lawful and proper use of agricultural chemical and pesticides and from other agricultural activities, including without limitation, cultivation, plowing, spraying, irrigation, pruning, harvesting, burning of agricultural waste products, protection of crops and animals from depredation, and other activities which occasionally generate dust, smoke, noise and odor. In addition, prior to issuance of a city building permit for construction of a residential building, the owner of the property upon which the building is to be constructed is required to file a disclosure statement acknowledging the proximity of agricultural operations and the potential for inconvenience or nuisance associated with those uses.

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP)

The SJMSCP provides comprehensive measures for compensation and avoidance of impacts on various biological resources, which includes ancillary benefits to agricultural resources. For instance, many of the habitat easements that are purchased or facilitated by the SJMSCP program are targeted for the protection of Swainson's hawk or other sensitive species habitat that are dependent on agricultural lands. The biological mitigation for these species through the SJMSCP includes the purchase of certain conservation easements for habitat purposes; however, the conservation easements are placed over agricultural land, such as alfalfa and row crops (not vines or orchards). As such, SJMSCP fees paid to San Joaquin Council of Governments (SJCOG) as administrator of the SJMSCP will result in the preservation of agricultural lands in perpetuity.

3.2.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact on agricultural and forest resources if it will:

- 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;
- Conflict with existing zoning for agricultural use, or a Williamson Act contract;
- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland zoned Timberland Production (as defined in Public Resources Code section 51104 (g));
- Result in the loss of forest land or conversion of forest land to non-forest use; or
- 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.

There are no forest lands or timber lands located within the Manteca Planning Area. There are also no parcels that are currently zoned as forest land, timber, or timber production. Therefore, implementation of the proposed Project would have no impact on forest land, timber, or timber production and this impact will not be discussed further.

IMPACTS AND MITIGATION MEASURES

Impact 3.2-1: The proposed Project has the potential to result in the conversion of Farmlands, including Prime Farmland and Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses. (Significant and Unavoidable)

Development of the proposed Project would result in the permanent conversion of approximately 10.3 acres of Prime Farmland and 148.0 acres of Farmland of Statewide Importance, as shown on Figure 3.2-1, to nonagricultural use. The loss of Important Farmland as classified under the FMMP is considered a potentially significant environmental impact.

As previously discussed, Chapter 13.42 of the Municipal Code establishes the City's Agricultural Mitigation Fee Program, which authorizes the collection of development impact fees to offset costs associated with the loss of productive agricultural lands converted for urban uses within the City. The City's agricultural mitigation fee program requires that future development pay the agricultural mitigation fee, currently \$2,956.20 per acre, to mitigate the conversion of agricultural land to urban

3.2 AGRICULTURAL RESOURCES

use. The City will use these funds to purchase conservation easements or deed restrictions on agricultural land to ensure that the land remains in agricultural use in perpetuity.

In addition to the City's agricultural mitigation fee program, the SJMSCP requires development to pay fees on a per-acre basis for impacts to agricultural lands that function as habitat for biological resources. As discussed in section 3.4, Biological Resources, the Project site functions as biological habitat because it has been previously and actively used for agricultural use (i.e., crop production, pasture uses, dairy, and grazing). Agricultural fields commonly have irrigation canals, ditches, and stock ponds that serve as a water source or drainage for the fields and habitat for a limited variety of plants and animals.

SJCOG will then use these funds to purchase the conservation easements on agricultural and habitat lands in the Project vicinity. The compensation results in the purchase of conservation easements that are placed over agricultural land. As such, the Project fees paid to SJCOG as administrator of the SJMSCP will result in the preservation of agricultural lands in perpetuity.

The purchase of conservation easements and/or deed restrictions through the City agricultural mitigation fee program and the SJMSCP allows the landowners to retain ownership of the land and continue agricultural operations, and preserves such lands in perpetuity.

The proposed conversion is consistent with the City's overall planning vision, as identified in the 2023 General Plan, which assumes the site would be developed with residential and park uses. The 2023 General Plan and General Plan EIR anticipated development of the Project site as part of the overall evaluation of buildout of the City. Additionally, the proposed General Plan Update designates this land for Low Density Residential uses consistent with the proposed Project and is anticipated in the overall buildout of the City as part of the General Plan Update EIR, currently out for public review. The 2023 General Plan EIR also addressed the conversion and loss of agricultural land that would result from buildout of the 2023 General Plan, providing a discussion of the General Plan policies intended to reduce impacts. However, the 2023 General Plan EIR concluded that although these policies and regulations would reduce impacts related to the conversion of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, the permanent loss of farmland would result in a significant and unavoidable impact to agricultural resources.

While the proposed Project will contribute fees toward the purchase of conservation easements on agricultural lands through the City's agricultural mitigation fee program and the SJMSCP (as required by Mitigation Measure 3.2-1), those fees and conservation easements would not result in the creation of new farmland to offset the loss that would occur with Project implementation. As such, the loss of Important Farmland would be a **significant and unavoidable** impact relative to this topic.

MITIGATION MEASURE(S)

Mitigation Measure 3.2-1: *Prior to the issuance of a Grading Permit, the Project applicant shall participate in the City's agricultural mitigation fee program and the SJMSCP by paying the established fees on a per-acre basis for the loss of important farmland. Fees paid toward the City's*

program shall be used to fund conservation easements on comparable or better agricultural lands to provide compensatory mitigation.

Impact 3.2-2: The proposed Project has the potential to conflict with existing zoning for agricultural use, or Williamson Act Contracts. (Less than Significant)

The Project site is not under a Williamson Act Contract. As shown on Figure 2.0-6 in Chapter 2.0, Project Description, the San Joaquin County General Plan designates the site Agriculture/Urban Reserve (A/UR) and the Zoning Ordinance designates the Project site for General Agriculture (AG-40). The A/UR land use designation is intended for agricultural land expected to become urban. The AG Zone is established to preserve agricultural lands for the continuation of commercial agriculture enterprises. The San Joaquin County Local Agency Formation Commission (LAFCo) will require the Project site to be pre-zoned by the City of Manteca in conjunction with the proposed annexation. The City's pre-zoning will include the following zoning designations: Planned Development (PD), One-Family Dwelling (R-1), General Commercial (CG), and Mixed Use Commercial (CMU). The pre-zoning would go into effect upon annexation into the City of Manteca.

Although the Project site is currently zoned for agricultural use by the County, the proposed Project includes pre-zoning consistent with the proposed residential and commercial uses. Additionally, conversion of the Project site from agricultural to urban uses has been anticipated by the City since as part of the 2023 General Plan and associated EIR. Therefore, implementation of the proposed Project would have a **less than significant** impact relative to this topic and no mitigation is required.

Impact 3.2-3: The proposed Project has the potential to result in conflicts with adjacent agricultural lands or indirectly cause conversion of agricultural lands. (Less than Significant with Mitigation)

Neighboring agricultural land, including Prime Farmland and Farmland of Statewide Importance, are located to the east, south, and west of the Project site as shown on Figure 3.2-1. A variety of residential and commercial uses would be developed on the Project site with implementation of the proposed Project.

As shown on Figure 2.0-7 in Chapter 2.0, Project Description, the City's existing 2023 General Plan anticipates that agricultural lands to the east, south, and west of the Project site would develop with urban uses. Additionally, the proposed General Plan Update anticipates that the agricultural lands to the east and west of the Project site would develop with urban uses. However, differing from the existing 2023 General Plan, lands to the south are proposed to be designated for future agricultural uses under the General Plan Update. Existing agricultural lands that are located east of Airport Way and to the south of the site may be impacted by the increased human presence on the Project site. However, the City's Right-to-Farm Ordinance reduces the potential for conflict between existing agricultural lands and adjacent uses. The notification procedures in the ordinance serves to inform landowners and developers of non-agricultural uses of what the expectations are in the area with regard to agricultural activities and to reduce complaints.

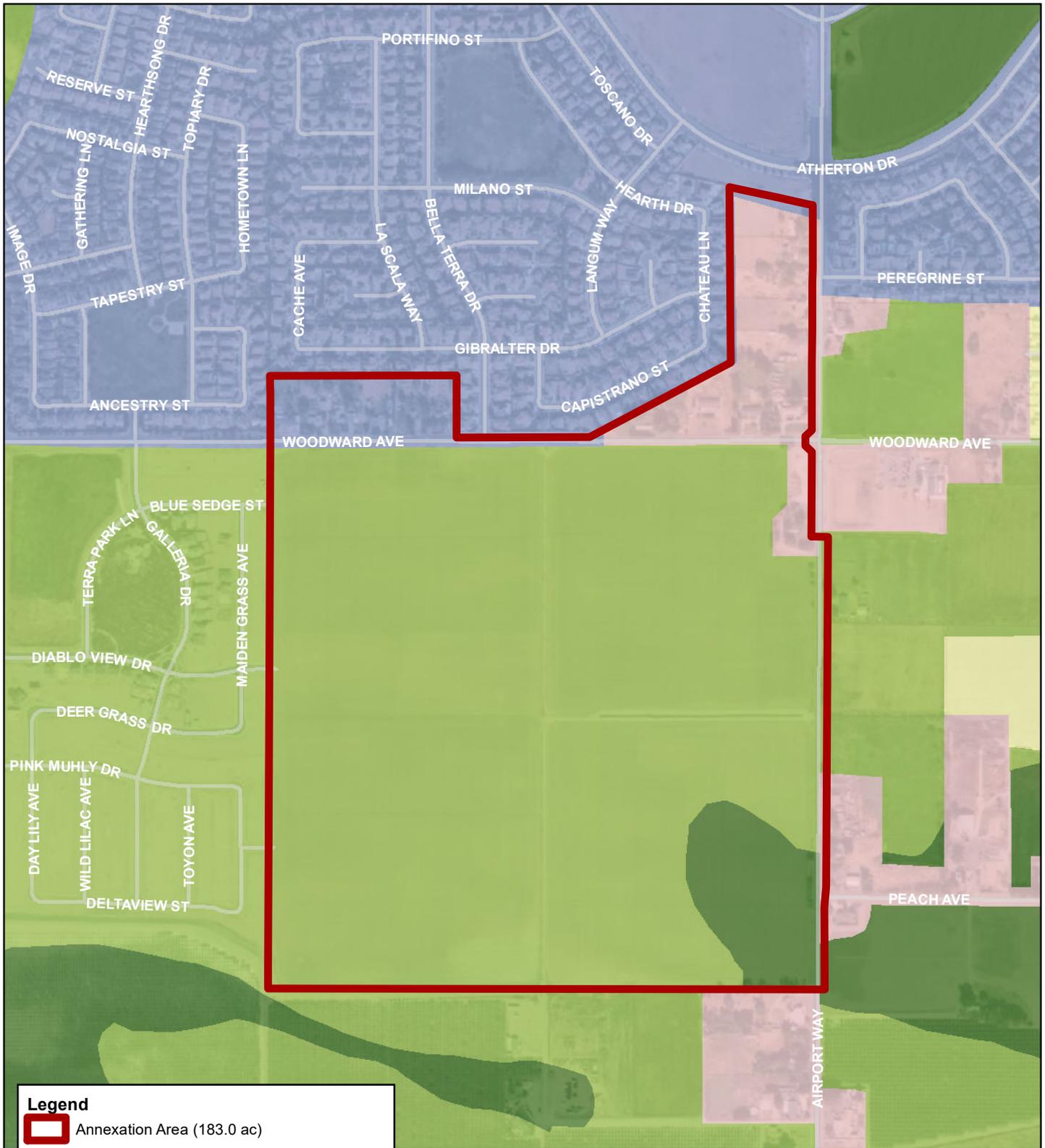
3.2 AGRICULTURAL RESOURCES

Most of the proposed development would be buffered from existing agricultural operations by existing roadways including, Airport Way on the eastern side of the Project site. However, the southern portion of the Project site would not be buffered from nearby agricultural operations. As discussed previously, the City's Right to Farm Ordinance is intended to reduce the occurrence of such conflicts between nonagricultural and agricultural land uses within the City through requiring the transferor of any property in the City to provide a disclosure statement describing that the City permits agricultural operations, including those that utilize chemical fertilizers and pesticides. Implementation of Mitigation Measure 3.2-2 would further ensure that the Project includes adequate measures to buffer Project uses from adjacent agricultural uses and would reduce adverse effects on neighboring agricultural uses. Implementation of Mitigation Measure 3.2-2 would reduce potential impacts to **less than significant**.

MITIGATION MEASURE(S)

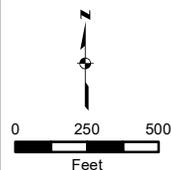
Mitigation Measure 3.2-2: *Prior to approval of improvement plans for each phase of the Project, the Project applicant shall demonstrate that the Project site plans include adequate measures to buffer adjacent agricultural uses from urban uses on the Project site and to reduce adverse impacts to neighboring agricultural uses; such measures shall include, but not be limited to:*

- *The Project shall provide adequate and secure fencing at the interface of the Project site, or any individual phase of the Project, and adjacent agricultural uses. Said fencing shall be reviewed and approved by the Community Development Department.*
- *The Project shall provide buffers, which may include parking areas, roadways and streets, drainage channels, and landscaped corridors, to buffer adjacent agricultural uses from the Project, including any individual phase of the Project, from proposed urban uses.*
- *The Project shall provide notifications to all operators of uses on the Project site that are adjacent or in the vicinity of existing agricultural land of the City's Right-to-Farm Ordinance.*



Legend

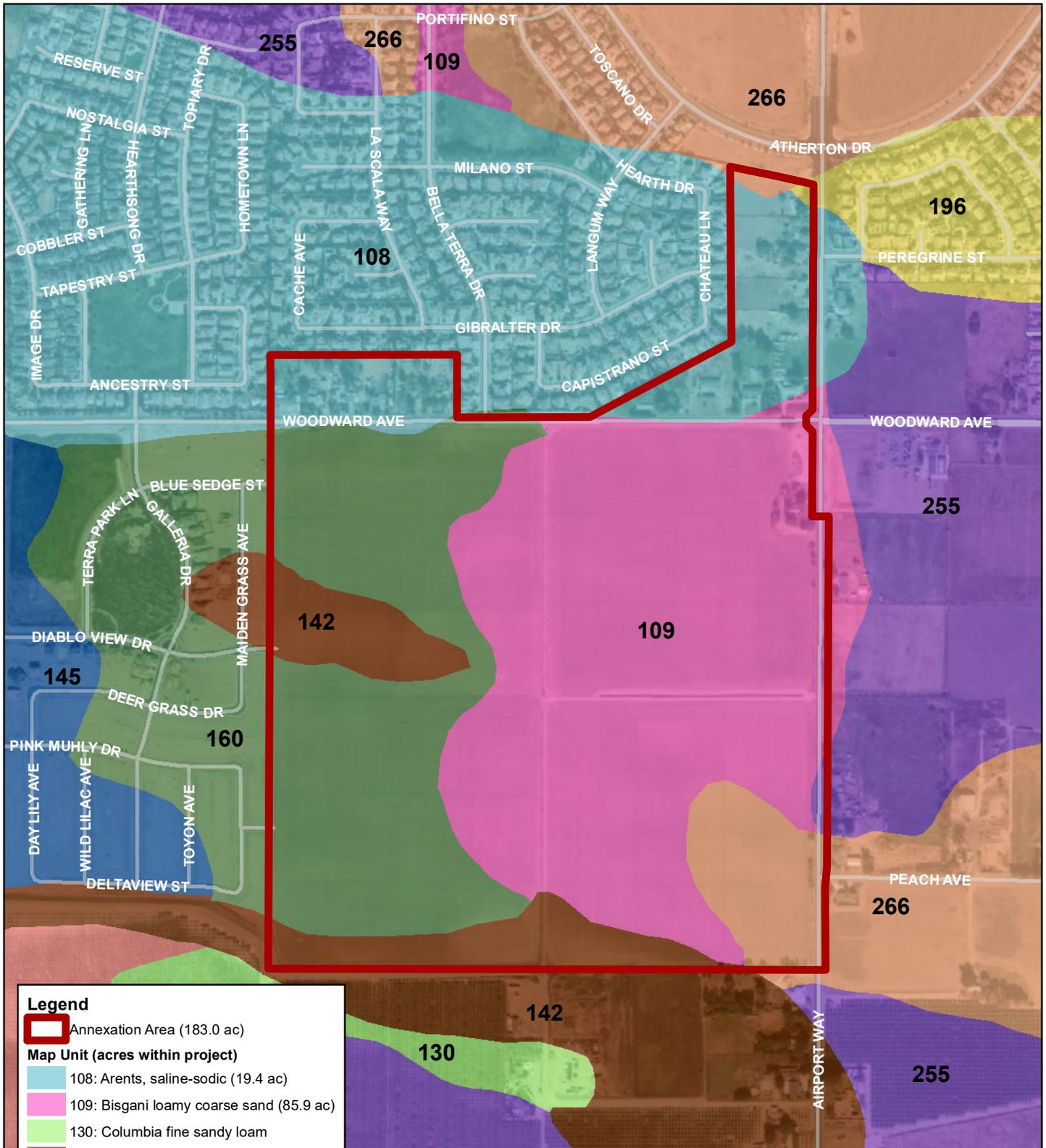
- Annexation Area (183.0 ac)
- Farmland Classification (acres within project)**
- Prime Farmland (10.3 ac)
- Farmland of Statewide Importance (148.0 ac)
- Farmland of Local Importance
- Rural Residential Land (15.7 ac)
- Urban and Built-Up Land (9.0 ac)



LUMINA at MACHADO RANCH
Figure 3.2-1. Farmland Classifications

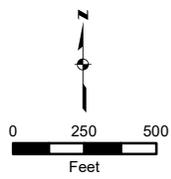
Sources: San Joaquin County GIS; California Department of Conservation Farmland Mapping and Monitoring Program, San Joaquin County 2016; ArcGIS Online World Imagery Map Service. Map date: February 22, 2021.

This page intentionally left blank.



Legend

- Annexation Area (183.0 ac)
- Map Unit (acres within project)**
- 108: Arents, saline-sodic (19.4 ac)
- 109: Bisgani loamy coarse sand (85.9 ac)
- 130: Columbia fine sandy loam
- 142: Delhi loamy sand (17.1 ac)
- 145: Dello loamy sand
- 160: Galt clay (48.7 ac)
- 166: Grangeville fine sandy loam
- 196: Manteca fine sandy loam (0.2 ac)
- 255: Tinnin loamy coarse sand (0.5 ac)
- 266: Veritas fine sandy loam (11.2 ac)



LUMINA at MACHADO RANCH
 Figure 3.3-1. Soils Map

Sources: San Joaquin County GIS; USDA/NRCS Soils via ArcGIS Online; ArcGIS Online World Imagery Map Service. Map date: February 22, 2021.

This page intentionally left blank.

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 Mitigating Air Quality Impacts* (San Joaquin Valley Air Pollution Control District [SJVAPCD], 2002), *Guidance for Assessing and Mitigating Air Quality Impacts - 2015* (SJVAPCD, 2015), and CalEEMod (v.2016.3.1) (CARB, 2007).

There was one Notice of Preparation (NOP) comment provided by the San Joaquin Valley Air Pollution Control District (SJVAPCD). The commenter pointed out that the SJVAPCD has the *Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI)* (March 19, 2015) as a technical guidance for the review of air quality impacts from proposed projects within the boundaries of the District.

3.3.1 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

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

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 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 PM₁₀ 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 PM₁₀ (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 3.3-1) 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 (O₃) is a photochemical oxidant and the major component of smog. While O₃ in the upper atmosphere is beneficial to life by shielding the earth from harmful ultraviolet radiation from the sun, high concentrations of O₃ at ground level are a major health and environmental concern. O₃ 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 O₃ levels occur typically during the warmer times of the year. Both ROG and NO_x are emitted by transportation and industrial sources. ROG 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 ROG that are reactive enough to contribute substantially to atmospheric photochemistry.

The reactivity of O₃ 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 O₃ not only affect people with impaired respiratory systems, such as asthmatics, but healthy adults and children as well. Exposure to O₃ 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. O₃ 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 NO₂ is the increased likelihood of respiratory problems. Under ambient conditions, NO₂ can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections. Nitrogen oxides are an important precursor both to ozone (O₃) and acid rain and may affect both terrestrial and aquatic ecosystems. Longer exposures to elevated concentrations of NO₂ 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 NO₂.

The major mechanism for the formation of NO₂ in the atmosphere is the oxidation of the primary air pollutant nitric oxide (NO_x). NO_x plays a major role, together with ROG_s, in the atmospheric reactions that produce O₃. 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 (SO₂) 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 SO₂ emissions in the U.S. is fossil fuel combustion at electric utilities and other industrial facilities. SO₂ is also emitted from certain manufacturing processes and mobile sources, including locomotives, large ships, and construction equipment.

SO₂ 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. SO₂ 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 SO₂ 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 SO₂ 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 SO₂ 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, SO₂ 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 SO₂ levels would lead to increased risk of such effects.

SO₂ emissions that lead to high concentrations of SO₂ in the air generally also lead to the formation of other sulfur oxides (SO_x). SO_x 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 SO₂ and ROG_s are also considered particulate matter. PM is generally categorized based on the diameter of the particulate matter: PM₁₀ is particulate matter 10 micrometers or less in diameter (known as respirable particulate matter), 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 SO₂) 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 (PM₁₀) 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. PM₁₀ 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 PM₁₀, 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 PM₁₀, 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 PM₁₀ 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 3.3-1 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 PM₁₀. 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 3.3-1: 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 PM₁₀ 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.

3.3 AIR QUALITY

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, PM₁₀ 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 3.3-2 presents the state and nation attainment status for San Joaquin County.

TABLE 3.3-2: STATE AND NATIONAL ATTAINMENT STATUS IN SAN JOAQUIN COUNTY

<i>CRITERIA POLLUTANTS</i>	<i>STATE DESIGNATIONS</i>	<i>NATIONAL DESIGNATIONS</i>
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, 2020.

San Joaquin County Air Quality Monitoring

The San Joaquin Valley Air Pollution District (SJVAPCD) and the CARB maintain air quality monitoring sites throughout San Joaquin County that collect data for ozone and PM_{2.5}. In addition, air quality monitoring sites for PM₁₀ are located throughout the San Joaquin Valley (though not in San Joaquin County). 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. Best available data obtained from the monitoring sites between 2017 and 2019 (latest year of data available) is shown in Table 3.3-3, Table 3.3-4, and Table 3.3-5.

TABLE 3.3-3 AMBIENT AIR QUALITY MONITORING DATA SUMMARY (SAN JOAQUIN COUNTY) - OZONE

YEAR	DAYS > STANDARD				1-HOUR OBSERVATIONS			8-HOUR AVERAGES				YEAR COVERAGE	
	STATE		NATIONAL		MAX.	STATE	NAT'L	STATE		NATIONAL			
	1-HR	8-HR	1-HR	8-HR		D.V. ¹	D.V. ²	MAX.	D.V. ¹	MAX.	D.V. ²	MIN	MAX
2019	2	4	0	4	0.098	0.09	0.092	0.08	0.0823	0.079	0.073	91	99
2018	1	8	0	8	0.099	0.10	0.099	0.082	0.0872	0.081	0.076	96	99
2017	0	8	0	6	0.093	0.10	0.105	0.082	0.0898	0.082	0.077	84	95

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 3.3-4: AMBIENT AIR QUALITY MONITORING DATA SUMMARY (SAN JOAQUIN VALLEY) – PM₁₀

YEAR	EST. DAYS > STD.		ANNUAL AVERAGE		HIGH 24-HR AVERAGE		YEAR COVERAGE
	NAT'L	STATE	NAT'L	STATE	NAT'L	STATE	
2019	16.2	129.7	55.6	55.6	652.2	664.2	0 – 100
2018	9.6	164.4	54.5	53.0	250.2	250.4	0 – 100
2017	7.7	145.5	55.3	48.4	298.4	210.0	0 – 100

NOTES: THE NATIONAL ANNUAL AVERAGE PM₁₀ 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 IADAM) AIR POLLUTION SUMMARIES.

TABLE 3.3-5 AMBIENT AIR QUALITY MONITORING DATA SUMMARY (SAN JOAQUIN COUNTY) - 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	MIN	MAX
2019	6.4	9.6	6.2	13.0	17	32.9	56	50.1	50.1	77	95
2018	25.0	17.6	17.4	13.8	17	96.9	56	188.0	257.5	96	100
2017	16.9	12.1	11.0	12.2	13	44.2	39	53.7	53.7	94	99

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 IADAM) 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 Planning Area include existing residences located within the Planning Area itself.

3.3.2 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.

- **NO₂:** The national NO₂ standard was most recently revised in 2010 following an exhaustive review of new literature pointed to evidence for adverse effects in asthmatics at lower NO₂ concentrations than the existing national standard.
- **SO₂:** On June 2, 2010, a new 1-hour SO₂ 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 3.3-1.

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 PM₁₀ 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-NO_x Rule

The CARB approved the Omnibus Low-NO_x Rule on August 28, 2020, which will require engine NO_x 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

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.

3.3 AIR QUALITY

- 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.

3.3 AIR QUALITY

- 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.

3.3 AIR QUALITY

- 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 PM₁₀ 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.

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).

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.

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}

PM₁₀ PLAN

Based on PM₁₀ measurements from 2003 to 2006, the U.S. EPA found that the SJVAB has reached federal PM₁₀ standards. On September 21, 2007, the SJVAPCD's Governing Board adopted the 2007 PM₁₀ Maintenance Plan and Request for Redesignation. This plan demonstrates that the valley will continue to meet the PM₁₀ standard. U.S. EPA approved the document and on September 25, 2008, the SJVAB was redesignated to attainment/maintenance (SJVAPCD, 2015).

PM_{2.5} 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 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 PM₁₀ 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

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.

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 NO_x or two or more tons of PM₁₀.
- 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 NO_x or PM₁₀ 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).²⁸ 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 NO_x emissions
- 45 percent of the total PM₁₀ 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

- NO_x Emissions. Applicants shall reduce 33.3 percent of the project's operational baseline NO_x emissions over a period of 10 years as quantified in the approved AIA.
- PM₁₀ Emissions. Applicants shall reduce of 50 percent of the project's operational baseline PM₁₀ 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 PM₁₀ Prohibitions

SJVAPCD controls fugitive PM₁₀ through Regulation VIII, Fugitive PM₁₀ Prohibitions. The purpose of this regulation is to reduce ambient concentrations of PM₁₀ 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 NO_x, ROG, and particulate matter (PM₁₀ 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.

3.3.3 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)TM (v.2016.3.2), 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 2030 over several phases. 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 2030.

The assumptions for the modeling were selected on a best-fit basis, and are consistent with the information provided in Chapter 2.0: Project Description. The land uses modeled include: Single Family Housing – (827 dwelling units); City Park – (10.9 acres). 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 demolition, site preparation, grading, building construction, paving, and architectural coating phases. See Appendix B.2 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, NO₂, SO₂, 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 SJVAPCD does not currently have a methodology that would correlate the expected air quality emissions of Projects to the likely health consequences of the increased emissions.

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.

Models and tools have been developed to correlate regional criteria pollutant emissions to potential community health impacts. Appendix B.1 contains a table that summarizes many of these tools, identifies the analyzed pollutants, describes their intended application and resolution, and analyzes whether they could be used to reasonably correlate project-level emissions to specific health consequences. As provided in Appendix B.1, while there are models capable of quantifying ozone and secondary PM formation and associated health effects, these tools were developed to support regional planning and policy analysis and have limited sensitivity to small changes in criteria pollutant concentrations induced by individual projects. Therefore, translating project generated criteria pollutants to the locations where specific health effects could occur or the resultant number of additional days of nonattainment cannot be estimated with a high degree of accuracy.

Technical limitations of existing models to correlate project-level regional emissions to specific health consequences are recognized by air quality management districts throughout the state, including the SJVAPCD and South Coast Air Quality Management District (SCAQMD), who provided amici curiae briefs for the Friant Ranch legal proceedings. In its brief, SJVAPCD (2015) acknowledges that while health risk assessments for localized air toxics, such as DPM, are commonly prepared, “it is not feasible to conduct a similar analysis for criteria air pollutants because currently available computer modeling tools are not equipped for this task.” The air district further notes that emissions solely from the Friant Ranch Project (which equate to less than one-tenth of one percent of the total NO_x and VOC in the Valley) is not likely to yield valid information,” and that any such information should not be “accurate when applied at the local level.” SCAQMD presents similar information in

their brief, stating that “it takes a large amount of additional precursor emissions to cause a modeled increase in ambient ozone levels”⁷.

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 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 cannot be traced to specific health outcomes on a regional scale without speculation, and a quantitative correlation of project-generated regional criteria pollutant emissions to specific human health impacts is not included in this analysis.

Models and Tools to Correlate Project-generated Criteria Pollutant Emissions to Health Impacts

Although available tools to correlate Project-generated criteria pollutant emissions to health impacts are designed to be used at the national, state, regional, and/or city-levels rather than the project level, this impact analysis includes CalEEMod modeling to identify criteria pollutant emissions that affect health. The higher the emissions generated by a project, the higher the chance that a given individual’s health would be affected by the development of a particular project.

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 quantitatively and provided in Appendix B.5 (see the Health Risk Assessment).

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 SJVPACD’s Rule 4102 and California Code of Regulations, Health and Safety Code Section 41700, Air Quality Public Nuisance.

⁷ For example, SCAQMD’s analysis of their 2012 Air Quality Attainment Plan showed that modeled NO_x and ROG reductions of 432 and 187 tons per day, respectively, only reduced ozone levels by 9 parts per billion. Analysis of SCAQMD’s Rule 1315 showed that emissions of NO_x and ROG of 6,620 and 89,180 pounds per day, respectively, contributed to 20 premature deaths per year and 89,947 school absence (South Coast Air Quality Management District, 2015).

IMPACTS AND MITIGATION MEASURES

Impact 3.3-1: Project operation would 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. (Significant and Unavoidable)

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.2016.3.2) was used to model operational emissions of the proposed Project. Table 3.3-6 shows proposed Project emissions as provided by CalEEMod. The SJVAPCD provides a list of applicable air quality emissions thresholds.

TABLE 3.3-6: OPERATIONAL PROJECT GENERATED EMISSIONS (TONS PER YEAR)

<i>POLLUTANT</i>	<i>CO</i>	<i>NO_x</i>	<i>ROG</i>	<i>SO_x</i>	<i>PM₁₀</i>	<i>PM_{2.5}</i>
THRESHOLD	100	10	10	27	15	15
EMISSIONS	22.0	12.1	8.6	0.1	8.6	2.4
EXCEEDS THRESHOLD?	N	Y	N	N	N	N

SOURCES: CAL EEMOD (V.2016.3.2)

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 (PM₁₀), 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 3.3-6 above, operational emissions would exceed the SJVACPD thresholds of significance for NO_x. Therefore, the proposed Project is required to implement all feasible mitigation to reduce criteria pollutant emissions to below the applicable SJVAPCD thresholds of significance. Therefore, the proposed Project would be required to implement Mitigation Measure 3.3-1. This

measure would ensure that individual phases within the footprint of the proposed Project would reduce emissions to less the applicable SJVAPCD thresholds of significance.

It should be noted that the emissions of ozone precursors such as ROG and NO_x attributable to the proposed Project would not be substantial enough on a regional basis for the City to be able, with currently available technical tools, to predict how the emissions of such pollutants would translate into either physical environmental changes, such as measurable effects on ambient ozone concentrations within the air basin, or health effects, such as increased respiratory problems, within any discrete population within the City or the region. Such an analysis is not reasonably feasible within the meaning of CEQA because it would require a level of speculation.

PROJECT EFFECTS ON PUBLIC HEALTH

San Joaquin County has a state designation of Nonattainment for ozone, PM₁₀ 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).

As shown in the table provided in Appendix B.1 of this EIR, almost all tools available to measure criteria pollutant emissions were designed to be used at the national, state, regional, and/or city-levels. These tools are not well suited to analyze small or localized changes in pollutant concentrations associated with individual projects. Accordingly, they are not recommended by the SJVAPCD for CEQA analyses. Instead, the following analysis of health effects is presented qualitatively.

Ozone

O₃ 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 O₃ 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 O₃ not only affect people with impaired respiratory systems, such as asthmatics, but healthy adults and children as well. Exposure to O₃ 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 3.3-6. 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 San Joaquin 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 SO₂) 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 PM₁₀ 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 3.3-6. 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 San Joaquin 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.

Discussion

The magnitude and locations of any potential changes in ambient air quality, and thus health consequences, from these additional emissions cannot be quantified with a high level of certainty due to the dynamic and complex nature of pollutant formation and distribution (e.g., meteorology, emissions sources, sunlight exposure), as well as the variabilities in the receptors that reside in a particular area. Additionally, SJVAPCD has not established any methodology or thresholds (quantitative or qualitative) for assessing the health effects from criteria pollutants. From a qualitative perspective, it is well documented from scientific studies that criteria pollutants can have adverse health effects. The federal and state governments have established the NAAQS or CAAQS as an attempt to regionally, and cumulatively, assess and control the health effects that criteria pollutants have within Air Basins. It is anticipated that public health will continue to be affected by the emission of criteria pollutants, especially by those with impaired respiratory systems in the City of Manteca and the surrounding region so long as the region does not attain the CAAQS or NAAQS. 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 to the San Joaquin County as a whole. Instead, the increases in criteria pollutants generated by the proposed Project when combined with the existing criteria pollutants emitted regionally, would affect people, especially those with impaired respiratory systems located in the immediate vicinity of the Project site.

CONCLUSION

With implementation of Mitigation Measures 3.3-1, the Project's operational emissions would be reduced. Mitigation Measure 3.3-1 requires individual phases of the proposed Project to ensure emissions are below all of the applicable SJVAPCD thresholds through on- and off-site mitigation measures, where applicable. However, even with implementation of all feasible mitigation, it may not be feasible for all individual phases within the Project site to reduce operational emissions at full Project buildout below the applicable thresholds. Therefore, the Project's criteria pollutant emissions would be considered to have a **significant and unavoidable** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.3-1: *Prior to the final discretionary approval of individual phases of development (e.g. the first final map), the Project Proponent shall coordinate with the SJVAPCD to ensure compliance with Rule 9510 for both operational and construction emissions. The intent is that each phase of development would demonstrate that the Project does not exceed the applicable SJVAPCD criteria pollutant thresholds for Project operations or construction. If the SJVAPCD criteria*

3.3 AIR QUALITY

pollutant thresholds is exceeded, the Project applicant shall develop a reasonably feasible off-site mitigation strategy to reduce long-term air quality impacts to below the applicable SJVAPCD thresholds of significance. For example, this may consist of fee payments to the SJVAPCD for their use in funding offsite mitigation strategies. Each off-site mitigation strategy shall be developed with, and approved by, the SJVAPCD and the City of Manteca. Each off-site mitigation strategy is subject to the review and approval of the Air District and the City of Manteca on a phase-by-phase basis, and is intended to be in addition to offsets that are obtained through any on-site mitigation measures. The City of Manteca is required to verify each offsite mitigation strategy and its associated reductions to ensure that the associated air quality impacts are reduced to the maximum extent feasible (i.e. to below the applicable SJVAPCD thresholds of significance, at minimum).

Impact 3.3-2: 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 with Mitigation)

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.2016.3.2) was used to estimate construction emissions for the proposed Project. Table 3.3-7, below, provides the construction criteria pollutant emissions associated with implementation of the proposed Project.

TABLE 3.3-7: MAXIMUM CONSTRUCTION PROJECT GENERATED EMISSIONS (TONS PER YEAR) - MITIGATED

<i>POLLUTANT</i>	<i>CO</i>	<i>NOx</i>	<i>ROG</i>	<i>SOx</i>	<i>PM₁₀</i>	<i>PM_{2.5}</i>
THRESHOLD	100	10	10	27	15	15
EMISSIONS	5.5	5.1	1.9	<0.1	1.0	0.5
EXCEEDS THRESHOLD?	N	N	N	N	N	N

SOURCES: CAL EEMOD (v.2016.3.2)

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 3.3-7, Project maximum construction emissions would not exceed the SJVAPCD thresholds of significance. Nevertheless, regardless of emission quantities, the SJVAPCD requires construction related mitigation in accordance with their rules and regulations. Implementation of the Mitigation Measure 3.3-2 through 3.3-5 would further reduce proposed Project construction related emissions to the extent possible.

CONCLUSION

The proposed Project would comply with pre-existing requisite federal, State, SJVAPCD, and other local regulations and requirements, as well as implement the mitigation measures provided by the SJVAPCD for construction-related PM₁₀ emissions, including those provided in Mitigation Measure 3.3-2 through 3.3-5. Furthermore, the proposed Project would implement Mitigation Measure 3.3-1, which requires the Project to demonstrate that individual projects that are part of the proposed Project demonstrate that the individual Project does not exceed the applicable SJVAPCD criteria pollutant thresholds for construction activities, or, if any of the SJVAPCD criteria pollutant thresholds are exceeded, the project applicant must develop a reasonably feasible offsite mitigation strategy or pay the SJVAPCD to fund offsite mitigation. Therefore, the Project's criteria pollutant emissions would be considered to have a **significant and unavoidable** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.3-2: *Prior to the issuance of a Grading Permit for each phase of the Project, the Project Proponent shall prepare and submit a Dust Control Plan that meets all of the applicable requirements of APCD Rule 8021, Section 6.3, for the review and approval of the APCD Air Pollution Control Officer.*

Mitigation Measure 3.3-3: *During all construction activities, the Project Proponent shall implement dust control measures, as required by APCD Rules 8011-8081, to limit Visible Dust Emissions to 20% opacity or less. Dust control measures shall 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.*

Mitigation Measure 3.3-4: *During all construction activities, the Project proponent shall implement the following dust control practices 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 5 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.

Mitigation Measure 3.3-5: Asphalt paving shall be applied in accordance with APCD Rule 4641, the purpose of which is to limit VOC emissions by restricting the application and manufacturing of certain types of asphalt for paving and maintenance operations. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations. The Project Applicant shall coordinate with the APCD, prior to Project asphalt paving activities, to ensure all Project asphalt paving would comply with this rule. The Project Applicant shall provide the City of Manteca with evidence of consultation with the APCD, including confirmation of compliance with APCD Rule 4641.

Impact 3.3-3: 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 3.3-4: The proposed Project has 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-butadiene, 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

3.3 AIR QUALITY

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 3.3-8 provides the California Air Resources Board minimum separation recommendations on siting sensitive land uses.

TABLE 3.3-8: CARB MINIMUM SEPARATION RECOMMENDATIONS ON SITING SENSITIVE LAND USES

<i>SOURCE CATEGORY</i>	<i>ADVISORY RECOMMENDATIONS</i>
Freeways and High-Traffic Roads	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloro-ethylene	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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)

Residences are proposed as part of the Project, which are considered traditional sensitive receptors. However, the Project is located in an area within any of the CARB minimum separation recommendations for sensitive land uses, as provided in Table 3.3-8. Therefore, implementation of the proposed Project would cause a **less than significant** impact relative to this topic.

Impact 3.3-5: 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 3.3-1 through 3.3-4.

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 page left intentionally blank.

This section describes the regulatory setting, regional biological resources, 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 an urban use. This section is based in part on the following technical studies: *City of Manteca General Plan 2023* (City of Manteca, as amended through 2013), and *Manteca General Plan 2023 Draft Environmental Impact Report* (City of Manteca, 2003), as well as site specific surveys and analysis.

There were no comments received during the Notice of Preparation (NOP) comment period regarding biological resources.

3.4.1 ENVIRONMENTAL SETTING

GEOMORPHIC PROVINCES/BIOREGION

The City of Manteca is located in the western portion of the Great Valley Geomorphic Province of California. The Great Valley Province is a broad structural trough bounded by the tilted block of the Sierra Nevada Range on the east and the complexly folded and faulted Coast Ranges on the west. The San Joaquin River is located just south and west of the City. This major river drains the Great Valley Province into the San Joaquin Delta to the north, ultimately discharging into the San Francisco Bay to the northwest.

The City of Manteca is located within the San Joaquin Valley Bioregion, which is comprised of Kings County, most of Fresno, Kern, Merced, and Stanislaus counties, and portions of Madera, San Luis Obispo, and Tulare counties. The San Joaquin Valley Bioregion is the third most populous out of ten bioregions in the State, with an estimated two million people. The largest cities are Fresno, Bakersfield, Modesto, and Stockton. Interstate 5 and State Route 99 are the major north-south roads that run the entire length of the bioregion.

The bioregion is bordered on the west by the coastal mountain ranges. Its eastern boundary joins the southern two-thirds of the Sierra bioregion, which features Yosemite, Kings Canyon, and Sequoia National Parks. At its northern end, the San Joaquin Valley bioregion borders the southern end of the Sacramento Valley bioregion. To the west, south, and east, the bioregion extends to the edges of the valley floor.

Habitat in the bioregion includes vernal pools, valley sink scrub and saltbush, freshwater marsh, grasslands, arid plains, orchards, and oak savannah. Historically, millions of acres of wetlands flourished in the bioregion, but stream diversions for irrigation dried all but about five percent. Remnants of the wetland habitats are protected in this bioregion in publicly owned parks, reserves, and wildlife areas. The bioregion is considered the State's top agricultural producing region with the abundance of fertile soil.

LOCAL SETTING

Location

The Project site is located in the southwestern portion of the City of Manteca directly adjacent to the city limits. The Project site is immediately southwest of the intersection of Airport Way

3.4 BIOLOGICAL RESOURCES

and Woodward Avenue. The Project site is bounded on the north by Woodward Avenue, on the east by Airport Way, on the south by an existing Reclamation District #2094 (RD 2094) dry levee and existing agricultural fields, and on the west by the existing Terra Ranch Subdivision. Figures 2.0-1 and 2.0-2 in Chapter 2.0, Project Description, show the Project's regional location and vicinity. The Project site is located within Sections 12 of Township 2 South, Range 6 East Mount Diablo Base and Meridian (MDBM). Figure 2.0-3 illustrates the proposed Project location on the U.S. Geological Survey (USGS) Lathrop, California, 7.5-minute series quadrangle map.

Topography

The Project site is relatively flat with natural gentle slope from south to north. The Project site topography ranges in elevation from approximately nineteen (19) to twenty-four (24) feet above sea level.

Climate

The City of Manteca is located in the northern portion of the San Joaquin Valley, which has a Mediterranean climate that is subject to cool, wet winters (often blanketed with fog) and hot, dry summers. The average annual precipitation is approximately 13.81 inches. Precipitation occurs as rain most of which falls between the months of November through April, peaking in January at 2.85 inches. The average temperatures range from December lows of 37.5 F to July highs of 94.3 F.

Vegetation

Vegetation on the Project site consists of agricultural, ruderal, and landscaping. Because of the active agricultural use over the majority of the Project site, there is very limited natural vegetation on the Project site with the exception of the perimeter of the agricultural fields and near the existing residential uses along Airport Way and Woodward Avenue. Common plant species observed in the perimeter of the agricultural fields include: wild oat (*Avena barbata*), rip-gut brome (*Bromus diandrus*), softchess (*Bromus hordeaceus*) alfalfa (*Medicago sativa*), Russian thistle (*Salsola tragus*), Italian thistle (*Carduus pycnocephalus*), rough pigweed (*Amaranthus retroflexus*), sunflower (*Helianthus annuus*), tarragon (*Artemisia dracuncululus*), coyote brush (*Baccharis pilularis*), prickly lettuce (*Lactuca serriola*), milk thistle (*Silybum marianum*), sow thistle (*Sonchus asper*), telegraph weed (*Heterotheca grandiflora*), barley (*Hordeum* sp.), mustard (*Brassica niger*), and heliotrope (*Heliotropium curassavicum*).

Wildlife

Agricultural and ruderal vegetation found on the Project site provides habitat for both common and a few special-status wildlife populations. For example, some commonly observed wildlife species in the region include: California ground squirrel (*Spermophilus beecheyi*), California vole (*Microtus californicus*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), red-tailed hawk (*Buteo jamaicensis*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), white-tailed kite (*Elanus leucurus*), American killdeer (*Charadrius vociferus*), gopher snake (*Pituophis melanoleucus*), garter snake (*Thamnophis species*), and western fence lizard (*Sceloporus occidentalis*), as well as many native insect species. There are

also several bat species in the region. Bats often feed on insects as they fly over agricultural and natural areas.

Locally common and abundant wildlife species are important components of the ecosystem. Due to habitat loss, many of these species must continually adapt to using agricultural, ruderal, and ornamental vegetation for cover, foraging, dispersal, and nesting.

Plant Communities

Agricultural and natural plant communities provide habitat for a variety of biological resources in the region. Sensitive habitats include those that are of special concern to resource agencies or those that are protected under a Habitat Conservation Plan, Natural Community Conservation Plan, the California Environmental Quality Act (CEQA), the Fish and Game Code, or the Clean Water Act (CWA). Additionally, sensitive habitats are usually protected under specific policies from local agencies. Figure 3.4-1 illustrates the plant communities (land cover types) in the vicinity of the Project site.

Table 3.4-1 summarizes the plant communities (land cover types) by acreage.

TABLE 3.4-1: LAND COVER TYPES

<i>LAND COVER TYPE</i>	<i>ACREAGE</i>
Cropland	8.1
Dryland Grain Crops	144.0
Irrigated Grain Crops	0.7
Irrigated Hayfield	0.8
Irrigated Row and Field Crops	5.6
Rice	0.2
Urban	23.6

SOURCE: CALFIRE FRAP DATA, 2021.

The majority of the Project site is labeled as Dryland Grain Crops (144.0 acres) on the land cover types maps. The remainder of the site includes Urban (23.6 acres), Cropland (8.1 acres), Irrigated Row and Field Crops (5.6 acres), Irrigated Hayfield (0.8 acres), Irrigated Grain Crops (0.7 acres), and Rive (0.2 acres).

The Project site has been previously and actively used for agricultural use (i.e., crop production, pasture uses, dairy, and grazing). Agricultural areas, including the Plan Area, are generally flat and well drained, and as a result are well suited for many crops. Alfalfa fields, hay, row crops, orchards, annual grasslands, cattle pasture, and dairies dominate the agricultural areas in the region. Agricultural fields commonly have irrigation canals, ditches, and stock ponds that serve as a water source or drainage for the fields and habitat for a limited variety of plants and animals.

Hydrogeomorphic Features

The Development Area has some existing improvements including two existing houses and barns and/or sheds with associated equipment, dirt and gravel roadways. The house and barn structures are located in the northeastern portions of the Development Area. The majority of the Development Area is in active agricultural use. Woodward Avenue is along the north, and Airport Way is along the

3.4 BIOLOGICAL RESOURCES

east. A South San Joaquin Irrigation District (SSJID) pipeline exists within the Development Area. An RD 2094 dry levee makes up a portion of the southern property line. This dryland levee is not intended to hold floodwaters from the south (upstream), instead it is intended to contain flows on RD 2094 and RD 2096 in the event of a levee breach of levees along RD 2094, RD 2096, or RD 17. It is noted that the Annexation Area is located within the RD 17 boundary.

Non-development Area 1 includes six existing residential homes just north of the Development Area and Woodward Avenue.

Non-development Area 2 includes nine existing residential homes just north of Woodward Avenue, and West of Airport Way.

There are no rivers, streams, or other aquatic habitats on the Project site.

SPECIAL-STATUS SPECIES

The following discussion is based on a background search of special-status species that are documented in the California Natural Diversity Database (CNDDDB), the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants, and the U.S. Fish and Wildlife Service's (USFWS) records of listed endangered and threatened species from the Information for Planning and Consultation (IPaC) database. The background search was regional in scope and focused on the documented occurrences within the nine-quadrangle region (approximately 10 miles) of the Project site. The background search included the following USGS quadrangles: Holt, Stockton West, Stockton East, Union Island, Lathrop, Manteca, Tracy, Vernalis, and Ripon. The Table 3.4-2 provides a list of special-status plants and Table 3.4-3 provides a list of special-status animals. Figure 3.4-2 presents the documented occurrences within the nine-quadrangle region for the Project site.

TABLE 3.4-2: SPECIAL-STATUS PLANT SPECIES WHICH MAY OCCUR IN PROJECT AREA

SPECIES	STATUS (FED./CA/ CNPS/SJMSCP)	GEOGRAPHIC DISTRIBUTION	HABITAT AND BLOOMING PERIOD	PRESENCE DETERMINATION
alkali-sink goldfields <i>Lasthenia chrysantha</i>	--/--/1B.1/No	Sacramento Valley, San Joaquin Valley	Vernal pools. Alkaline. 0-200 m. Feb-April.	Not Present
big tarplant <i>Blepharizonia plumosa</i>	--/--/1B.1/No	San Francisco Bay area with occurrences in Alameda, Contra Costa, San Joaquin, Stanislaus, and Solano Counties	Valley and foothill grassland; 30-505 m. July-Oct.	Not Present
caper-fruited tropidocarpum <i>Tropidocarpum capparideum</i>	--/--/1B.1/Yes	Historically known from the northwest San Joaquin Valley and adjacent Coast Range foothills; currently known from Fresno, Monterey, and San Luis Obispo Counties	Alkaline hills in valley and foothill grassland; below 455 m. March-April.	Not Present
Delta button-celery <i>Eryngium racemosum</i>	--/E/1B.1/Yes	San Joaquin River delta floodplains and adjacent Sierra Nevada foothills: Calaveras, Merced, San Joaquin, and Stanislaus Counties	Riparian scrub, seasonally inundated depressions along floodplains on clay soils; below 75 m. June-August.	Not Present
diamond-petaled California poppy <i>Eschscholzia rhombipetala</i>	--/--/1B.1/Yes	Found in Alameda, Contra Costa*, Colusa*, San Joaquin, San Luis Obispo (SLO), Stanislaus* Counties *presumed extirpated	Valley and foothill grassland. Alkaline, clay slopes and flats. 30-625 m. March-April.	Not Present
large-flowered fiddleneck <i>Amsinckia grandiflora</i>	E/E/1B.1/Yes	Native to California found in Contra Costa, Alameda, and San Joaquin Counties	Found in grasslands; it grows on sedimentary loam in mesic areas of its range. April–May.	Not Present
lesser saltscale <i>Atriplex minuscula</i>	--/--/1B.2/No	Scattered locations in the Central Valley in Alameda, Butte, Fresno, Kings, Kern, Madera, Merced, Stanislaus, Tulare counties	Alkaline, sandy soils. Chenopod scrub, playas, valley and foothill grassland. May-October.	Not Present
Mason's lilaepsis <i>Lilaeopsis masonii</i>	--/R/1B.1/Yes	Sacramento-San Joaquin River Delta and nearby shores of San Francisco Bay	Marshes and swamps, riparian scrub. Tidal zones, in muddy or silty soil formed through river deposition or river bank erosion. In brackish or freshwater. 0-10 m. April-November.	Not Present

3.4

BIOLOGICAL RESOURCES

<i>SPECIES</i>	<i>STATUS (FED./CA/ CNPS/SJMSCP)</i>	<i>GEOGRAPHIC DISTRIBUTION</i>	<i>HABITAT AND BLOOMING PERIOD</i>	<i>PRESENCE DETERMINATION</i>
palmate-bracted bird's-beak <i>Chloropyron palmatum</i>	E/E/1B.1/Yes	Scattered locations in Fresno and Madera counties in the San Joaquin Valley, San Joaquin, Yolo, and Colusa counties in the Sacramento Valley, and the Livermore Valley area of Alameda County	Saline-alkaline soils in seasonally-flooded lowland plains and basins at elevations of less than 500 feet. May-October.	Not Present
showy golden madia <i>Madia radiata</i>	--/--/1B.1/Yes	It is endemic to California, where it is known mostly from the Central Coast Ranges and adjacent edges of the San Francisco Bay Area and Central Valley	Valley and foothill grassland, cismontane woodland. Mostly on adobe clay in grassland or among shrubs. 75-1220 m. March-May.	Not Present
slough thistle <i>Cirsium crassicaule</i>	--/--/1B.1/Yes	San Joaquin Valley: Kings, Kern, and San Joaquin Counties	Freshwater sloughs and marshes; 3-100 m. May-August.	Not Present
recurved larkspur <i>Delphinium recurvatum</i>	--/--/1B.2/Yes	Central Valley from Colusa to Kern Counties	Alkaline soils in saltbush scrub, cismontane woodland, valley and foothill grassland; 3-750 m. March-May.	Not Present
saline clover <i>Trifolium hydrophilum</i>	--/--/1B.2/No	Eastern and Northern San Francisco Bay region, the Delta, western San Joaquin Valley, southern San Jose	Marshes and swamps, Valley and foothill grassland (mesic, alkaline), and Vernal pools. April-June.	Not Present
San Joaquin spearscale <i>Extriplex joaquinana</i>	--/--/1B.2/Yes	Delta region, central valley and central coast	Alkaline. Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland. April-October.	Not Present
Sanford's arrowhead <i>Sagittaria sanfordii</i>	--/--/1B.2/Yes	Butte, Del Norte, El Dorado, Fresno, Merced, Mariposa, Marin, Napa, Orange, Placer, Sacramento, San Bernardino, Shasta, San Joaquin, Solano, Tehama, Tulare, Ventura, and Yuba Counties	Marshes and swamps. In standing or slow-moving freshwater ponds, marshes, and ditches. 0-605 m. May-October (November).	Not Present
Suisun Marsh aster <i>Symphyotrichum lentum</i>	--/--/1B.2/Yes	Contra Costa, Napa, Sacramento, San Joaquin, Solano, and Yolo Counties	Marshes and swamps (brackish and freshwater). Most often seen along sloughs with Phragmites, Scirpus, blackberry, Typha, etc. 0-15 m. (April) May-November.	Not Present
woolly rose-mallow <i>Hibiscus lasiocarpus</i> <i>var. occidentalis</i>	--/--/1B.2/No	Central Valley of California, as well as populations in eastern North America	All along the waterways of the Delta. June-September.	Not Present

SPECIES	STATUS (FED./CA/ CNPS/SJMSCP)	GEOGRAPHIC DISTRIBUTION	HABITAT AND BLOOMING PERIOD	PRESENCE DETERMINATION
Wright's trichocoronis <i>Trichocoronis wrightii</i> var. <i>wrightii</i>	--/--/2.1/Yes	Scattered locations in the Central Valley; southern coast of Texas	Floodplains, moist places, on alkaline soils; below 450 m. May-September.	Not Present
watershield <i>Brasenia schreberi</i>	--/--/2B.3/No	Central Valley of California and western North America	Freshwater Marshes and swamps. June- September.	Not Present

NOTES: CNPS = CALIFORNIA NATIVE PLANT SOCIETY
 SJMSCP = SAN JOAQUIN MULTI-SPECIES HABITAT CONSERVATION AND OPEN SPACE PLAN

FEDERAL

E = ENDANGERED UNDER THE FEDERAL ENDANGERED SPECIES ACT.
 T = THREATENED UNDER THE FEDERAL ENDANGERED SPECIES ACT.

STATE

E = ENDANGERED UNDER THE CALIFORNIA ENDANGERED SPECIES ACT.
 T = THREATENED UNDER THE FEDERAL CALIFORNIA ENDANGERED SPECIES ACT.
 R = RARE UNDER THE CALIFORNIA ENDANGERED SPECIES ACT

CALIFORNIA NATIVE PLANT SOCIETY

1B = RARE, THREATENED, OR ENDANGERED IN CALIFORNIA AND ELSEWHERE.
 2 = RARE, THREATENED, OR ENDANGERED IN CALIFORNIA, BUT MORE COMMON ELSEWHERE.
 3 = A REVIEW LIST – PLANTS ABOUT WHICH MORE INFORMATION IS NEEDED.
 4 = PLANTS OF LIMITED DISTRIBUTION – A WATCH LIST
 .1 = SERIOUSLY ENDANGERED IN CALIFORNIA (OVER 80% OF OCCURRENCES THREATENED-HIGH DEGREE AND IMMEDIACY OF THREAT).
 .2 = FAIRLY ENDANGERED IN CALIFORNIA (20-80% OCCURRENCES THREATENED).
 .3 = NOT VERY ENDANGERED IN CALIFORNIA (<20% OF OCCURRENCES THREATENED).

3.4

BIOLOGICAL RESOURCES

TABLE 3.4-3: SPECIAL-STATUS WILDLIFE AND FISH SPECIES WHICH MAY OCCUR IN PROJECT AREA

SPECIES	STATUS (FED/CA/ SJMSCP)	GEOGRAPHIC DISTRIBUTION	HABITAT REQUIREMENTS
<i>INVERTEBRATES</i>			
California linderiella <i>Linderiella occidentalis</i>	--/--/No	Ranges from near Redding in the north to as far south as Fresno County, mainly to the east of the Sacramento and San Joaquin Rivers	Natural, and artificial, seasonally ponded habitat types including: vernal pools, swales, ephemeral drainages, stock ponds, reservoirs, ditches, backhoe pits, and ruts caused by vehicular activities
Conservancy fairy shrimp <i>Branchinecta conservatio</i>	E/--/Yes	Sacramento Valley and the northern San Joaquin Valley, and the eastern flank of the central coastal range	Large to very large vernal pools and vernal lakes although they also have been found in alkaline pools
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	T/--/Yes	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County	Common in vernal pools; they are also found in sandstone rock outcrop pools.
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	E/--/Yes	Shasta County south to Merced County	Vernal pools and ephemeral stock ponds.
Crotch bumble bee <i>Bombus crotchii</i>	--/CE/No	Central California south to Baja California del Norte, Mexico, and includes coastal areas east to the edges of the deserts and the Central Valley	Open grassland and scrub
Molestan blister beetle <i>Lytta molesta</i>	--/--/Yes	Distribution of this species is poorly known.	Annual grasslands, foothill woodlands or saltbush scrub.
Sacramento anthicid beetle <i>Anthicus sacramento</i>	--/--/No	Found in several locations along the Sacramento and San Joaquin rivers, from Shasta to San Joaquin counties, and at one site along the Feather River.	Sand dune area, sand slipfaces among bamboo and willow, but may not depend on these plants.
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	T/--/Yes	Stream side habitats below 3,000 feet throughout the Central Valley	Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant.
western bumble bee <i>Bombus occidentalis</i>	--/CE/No	Western North America, ranging from the tundra region in Alaska and Yukon south along the west coast to southern British Columbia to central California, Arizona and New Mexico and east into southern Saskatchewan and northwestern Great Plains	Open coniferous, deciduous and mixed-wood forests, wet and dry meadows, montane meadows and prairie grasslands, meadows bordering riparian zones, and along roadsides in taiga adjacent to wooded areas, urban parks, gardens and agricultural areas, subalpine habitats and more isolated natural areas
<i>AMPHIBIANS</i>			
California tiger salamander <i>Ambystoma californiense</i> (<i>A. tigrinum c.</i>)	T/SSC/Yes	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to northeastern San Luis Obispo County.	Small ponds, lakes, or vernal pools in grass-lands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy.
California red-legged frog <i>Rana aurora draytoni</i>	T/SSC/Yes	Found along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Tehama County to Fresno County	Permanent and semi-permanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation. May estivate in rodent burrows or cracks during dry periods.
foothill yellow-legged frog <i>Rana boylei</i>	T/SSC/Yes	Coast Ranges from northern Oregon, through California, and into Baja California, Mexico as well as in the foothills of the Sierra Nevada and southern Cascade Range in California.	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.

SPECIES	STATUS (FED/CA/ SJMSCP)	GEOGRAPHIC DISTRIBUTION	HABITAT REQUIREMENTS
western spadefoot <i>Spea hammondi</i>	T/T/Yes	Found along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Tehama County to Fresno County	Permanent and semi-permanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation. May estivate in rodent burrows or cracks during dry periods.
<i>BIRDS</i>			
Aleutian goose <i>Branta canadensis leucopareia</i>	D/--/Yes	The entire population winters in Butte Sink, then moves to Los Banos, Modesto, the Delta, and East Bay reservoirs; stages near Crescent City during spring before migrating to breeding grounds.	Roosts in large marshes, flooded fields, stock ponds, and reservoirs; forages in pastures, meadows, and harvested grainfields; corn is especially preferred
Burrowing owl <i>Athene cunicularia</i>	BCC/SSC/Yes	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast	Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows
California black rail <i>Laterallus jamaicensis coturniculus</i>	BCC/T/Yes	Permanent resident in the San Francisco Bay and east-ward through the Delta into Sacramento and San Joaquin Counties; small populations in Marin, Santa Cruz, San Luis Obispo, Orange, Riverside, and Imperial Counties	Tidal salt marshes associated with heavy growth of pickleweed; also occurs in brackish marshes or freshwater marshes at low elevations
California horned lark <i>Eremophila alpestris actia</i>	--/WL/Yes	Central Valley and coastal valleys and foothills.	Forage in large groups in open grasslands, nesting in hollows on the ground, and are also regularly found breeding on the Valley floor in suitable habitat.
least Bell's vireo <i>Vireo bellii pusillus</i>	E/E/No	Central Valley of California and other low-elevation river valleys.	Dense brush, mesquite, willow-cottonwood forest, streamside thickets, and scrub oak.
loggerhead shrike <i>Lanius ludovicianus</i>	BCC/SSC/Yes	Resident and winter visitor in lowlands and foothills throughout California. Rare on coastal slope north of Mendocino County, occurring only in winter	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches
merlin <i>Falco columbarius</i>	--/WL/Yes	Does not nest in California. Rare but widespread winter visitor to the Central Valley and coastal areas	Forages along coastline in open grasslands, savannas, and woodlands. Often forages near lakes and other wetlands
song sparrow (Modesto Population) <i>Melospiza melodia</i>	BCC/SSC/Yes	Restricted to California, where it is locally numerous in the Sacramento Valley, Sacramento–San Joaquin River Delta, and northern San Joaquin Valley. Exact boundaries of range uncertain.	Found in emergent freshwater marshes dominated by tules (<i>Scirpus</i> spp.) and cattails (<i>Typha</i> spp.) as well as riparian willow (<i>Salix</i> spp.) thickets. They also nest in riparian forests of Valley Oak (<i>Quercus lobata</i>) with a sufficient understory of blackberry (<i>Rubus</i> spp.), along vegetated irrigation canals and levees, and in recently planted Valley Oak restoration sites.
Swainson's hawk <i>Buteo swainsoni</i>	BCC/T/Yes	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. Highest nesting densities occur near Davis and Woodland, Yolo County	Nests in oaks or cottonwoods in or near riparian habitats. Forages in grasslands, irrigated pastures, and grain fields
tricolored blackbird <i>Agelaius tricolor</i>	BCC/C (SSC)/Yes	Permanent resident in the Central Valley from Butte County to Kern County. Breeds at scattered coastal locations from Marin County south to San Diego County; and at scattered locations in Lake, Sonoma, and Solano Counties. Rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields. Habitat must be large enough to support 50 pairs. Probably requires water at or near the nesting colony

3.4

BIOLOGICAL RESOURCES

<i>SPECIES</i>	<i>STATUS (FED/CA/ SJMSCP)</i>	<i>GEOGRAPHIC DISTRIBUTION</i>	<i>HABITAT REQUIREMENTS</i>
Western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	T (BCC)/E/Yes	Nests along the upper Sacramento, lower Feather, south fork of the Kern, Amargosa, Santa Ana, and Colorado Rivers	Wide, dense riparian forests with a thick understory of willows for nesting; sites with a dominant cottonwood overstory are preferred for foraging; may avoid valley oak riparian habitats where scrub jays are abundant
white-tailed kite <i>Elanus leucurus</i>	--/FP/Yes	Gulf Coast in Texas and Mexico and in the valley and coastal regions of central and southern California	Grasslands, marshes, row crops and alfalfa, where they hover while foraging for rodents and insects.
Yellow-headed blackbird <i>Xanthocephalus xanthocephalus</i>	--/SSC/Yes	Nests in freshwater emergent wetlands with dense vegetation and deep water. Often along borders of lakes or ponds.	Nests only where large insects such as odonatan are abundant, nesting timed with maximum emergence of aquatic insects.
<i>FISH</i>			
Delta smelt <i>Hypomesus transpacificus</i>	T/T/Yes	Primarily in the Sacramento–San Joaquin Estuary but has been found as far upstream as the mouth of the American River on the Sacramento River and Mossdale on the San Joaquin River; range extends downstream to San Pablo Bay.	Occurs in estuary habitat in the Delta where fresh and brackish water mix in the salinity range of 2–7 parts per thousand.
Hardhead <i>Mylopharodon conocephalus</i>	--/SSC/No	Tributary streams in the San Joaquin drainage; large tributary streams in the Sacramento River and the main stem	Resides in low to mid-elevation streams and prefer clear, deep pools and runs with slow velocities. They also occur in reservoirs.
steelhead - Central Valley DPS <i>Oncorhynchus mykiss irideus pop. 11</i>	T/--/No	From Russian River, south to Soquel Creek and to, but not including, Pajaro River. Also San Francisco and San Pablo Bay basins.	Aquatic, flowing waters. Populations in the Sacramento and San Joaquin rivers and their tributaries.
Longfin smelt <i>Spirinchus thaleichthys</i>	--/SSC/Yes	Occurs in estuaries along the California coast. Adults concentrated in Suisun, San Pablo, and North San Francisco Bays.	Prior to spawning, these fish aggregate in deepwater habitats available in the northern Delta, including, primarily, the channel habitats of Suisun Bay and the Sacramento River. Spawning occurs in fresh water on the San Joaquin River below Medford Island and on the Sacramento River below Rio Vista.
<i>MAMMALS</i>			
American badger <i>Taxidea taxus</i>	--/SSC/Yes	In California, badgers occur throughout the State except in humid coastal forests of northwestern California in Del Norte and Humboldt Counties	Badgers occur in a wide variety of open, arid habitats but are most commonly associated with grasslands, savannas, mountain meadows, and open areas of desert scrub; the principal habitat requirements for the species appear to be sufficient food (burrowing rodents), friable soils, and relatively open, uncultivated ground
pallid bat <i>Antrozous pallidus</i>	--/SSC/No	Occurs throughout California except the high Sierra from Shasta to Kern County and the northwest coast, primarily at lower and mid elevations	Occurs in a variety of habitats from desert to coniferous forest. Most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California. Relies heavily on trees for roosts

SPECIES	STATUS (FED/CA/ SJMSCP)	GEOGRAPHIC DISTRIBUTION	HABITAT REQUIREMENTS
Riparian (San Joaquin Valley) woodrat <i>Neotoma fuscipes riparia</i>	E/SSC, FP/Yes	Historical distribution along the San Joaquin, Stanislaus, and Tuolumne Rivers, and Caswell State Park in San Joaquin, Stanislaus, and Merced Counties; presently limited to San Joaquin County at Caswell State Park and a possible second population near Vernalis	Riparian habitats with dense shrub cover, willow thickets, and an oak overstory
Riparian brush rabbit <i>Sylvilagus bachmani riparius</i>	E/E/Yes	Limited to San Joaquin County at Caswell State Park near the confluence of the Stanislaus and San Joaquin Rivers and Paradise Cut area on Union Pacific right-of-way lands	Native valley riparian habitats with large clumps of dense shrubs, low-growing vines, and some tall shrubs and trees
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	E/T/Yes	Principally occurs in the San Joaquin Valley and adjacent open foothills to the west; recent records from 17 counties extending from Kern County north to Contra Costa County	Saltbush scrub, grassland, oak, savanna, and freshwater scrub
San Joaquin pocket mouse <i>Perognathus inornatus</i>	--/--/Yes	Occurs throughout the San Joaquin Valley and in the Salinas Valley	Favors grasslands and scrub habitats with fine textured soils
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	--/SSC/Yes	Throughout California in a wide variety of habitats	Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.
western mastiff bat <i>Eumops perotis californicus</i>	--/SSC/Yes	Ranges from central Mexico across the southwestern United States (parts of California, southern Nevada, southwestern Arizona, southern New Mexico and western Texas). Significant populations of <i>E. perotis</i> occur in many of the Sierra Nevada river drainages, particularly in the central and southern Sierra, i.e., the Stanislaus, Tuolumne, Merced (North and South Forks), San Joaquin, Kaweah, Tule, and Kern rivers.	Many open, semi-arid to arid habitats, including conifer & deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in cliff faces, high buildings, trees and tunnels.
<i>REPTILES</i>			
California glossy snake <i>Arizona elegans occidentalis</i>	--/SSC/No	Patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular ranges, south to Baja California.	Generalist reported from a range of scrub and grassland habitats, often with loose or sandy soils
coast horned lizard <i>Phrynosoma blainvillii</i>	--/SSC/No	Historically found in California along the Pacific coast from the Baja California border west of the deserts and the Sierra Nevada, north to the Bay Area, and inland as far north as Shasta Reservoir, and south into Baja California.	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.
Giant garter snake <i>Thamnophis couchi gigas</i>	T/T/Yes	Central Valley from the vicinity of Burrell in Fresno County north to near Chico in Butte County; has been extirpated from areas south of Fresno	Sloughs, canals, low gradient streams and freshwater marsh habitats where there is a prey base of small fish and amphibians; they are also found in irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter.
San Joaquin coachwhip <i>Masticophis flagellum ruddocki</i>	--/SSC/Yes	The San Joaquin coachwhip is endemic to California, ranging from Arbuckle in the Sacramento Valley in Colusa County southward to the Grapevine in the Kern County portion of the San Joaquin Valley and westward into the inner South Coast Ranges.	Open, dry habitats with little or no tree cover. Found in valley grassland and saltbush scrub in the San Joaquin Valley. Needs mammal burrows for refuge and oviposition sites.

3.4

BIOLOGICAL RESOURCES

SPECIES	STATUS (FED/CA/ SJMSCP)	GEOGRAPHIC DISTRIBUTION	HABITAT REQUIREMENTS
western pond turtle <i>Emys marmorata</i>	--/SSC/Yes	Southern Central Valley (San Joaquin clade), a limited region in Santa Barbara and Ventura counties (Santa Barbara clade), and a region south of the Tehachapi Mountains and west of the Transverse ranges south to Baja California (Southern clade)	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying

STATUS EXPLANATIONS:

FEDERAL

E = ENDANGERED UNDER THE FEDERAL ENDANGERED SPECIES ACT.

T = THREATENED UNDER THE FEDERAL ENDANGERED SPECIES ACT.

PE = PROPOSED FOR ENDANGERED UNDER THE FEDERAL ENDANGERED SPECIES ACT.

PT = PROPOSED FOR THREATENED UNDER THE FEDERAL ENDANGERED SPECIES ACT.

C = CANDIDATE SPECIES FOR LISTING UNDER THE FEDERAL ENDANGERED SPECIES ACT.

D = DELISTED FROM FEDERAL LISTING STATUS.

BCC = BIRD OF CONSERVATION CONCERN

STATE

E = ENDANGERED UNDER THE CALIFORNIA ENDANGERED SPECIES ACT.

T = THREATENED UNDER THE CALIFORNIA ENDANGERED SPECIES ACT.

C = CANDIDATE SPECIES FOR LISTING UNDER THE CALIFORNIA ENDANGERED SPECIES ACT.

FP = FULLY PROTECTED UNDER THE CALIFORNIA FISH AND GAME CODE.

SSC = SPECIES OF SPECIAL CONCERN IN CALIFORNIA.

3.4.2 REGULATORY SETTING

There are a number of regulatory agencies whose responsibility includes the oversight of the natural resources of the State and nation including the California Department of Fish and Wildlife (CDFW), USFWS, U.S. Army Corps of Engineers (USACE), and the Central Valley Regional Water Quality Control Board (CVRWQCB). These agencies often respond to declines in the quantity of a particular habitat or plant or animal species by developing protective measures for those species or habitat type. The following is an overview of the Federal, State and local regulations that are applicable to the proposed Project.

FEDERAL

Federal Endangered Species Act

The Federal Endangered Species Act (FESA), passed in 1973, defines an endangered species as any species or subspecies that is in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as any species or subspecies that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Once a species is listed it is fully protected from a “take” unless a take permit is issued by the USFWS. A take is defined as the harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct, including modification of its habitat (16 USC 1532, 50 CFR 17.3). Proposed endangered or threatened species are those species for which a proposed regulation, but not a final rule, has been published in the Federal Register.

Migratory Bird Treaty Act

To kill, possess, or trade a migratory bird, bird part, nest, or egg is a violation of the Federal Migratory Bird Treaty Act (FMBTA: 16 U.S.C., §703, Supp. I, 1989), unless it is in accordance with the regulations that have been set forth by the Secretary of the Interior.

Federal Bald and Golden Eagle Protection Act

The Federal Bald and Golden Eagle Protection Act provide regulations to protect bald and golden eagles as well as their nests and eggs from willful damage or injury.

Clean Water Act – Section 404

Section 404 of the CWA regulates all discharges of dredged or fill material into waters of the U.S. Discharges of fill material includes the placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes and subaqueous utility lines [33 C.F.R. §328.2(f)].

Waters of the U.S. include lakes, rivers, streams, intermittent drainages, mudflats, sandflats, wetlands, sloughs, and wet meadows. Wetlands are defined as “those areas that are inundated or

saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” [33 C.F.R. §328.3(b)]. Waters of the U.S. exhibit a defined bed and bank and ordinary high-water mark (OHWM). The OHWM is defined by the USACE as “that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas” [33 C.F.R. §328.3(e)].

The USACE is the agency responsible for administering the permit process for activities that affect waters of the U.S. Executive Order 11990 is a Federal implementation policy, which is intended to result in no net loss of wetlands.

Clean Water Act – Section 401

Section 401 of the CWA (33 U.S.C. 1341) requires an applicant who is seeking a 404 permit to first obtain a water quality certification from the CVRWQCB. To obtain the water quality certification, the CVRWQCB must indicate that the proposed fill would be consistent with the standards set forth by the State.

Rivers and Harbors Act of 1899

The Rivers and Harbors Act prohibits the obstruction or alteration of any navigable water of the United States. The Act requires authorization from the USACE for any excavation or deposition of materials into these waters or for any work that could affect the course, location, condition, or capacity of rivers or harbors.

STATE

Fish and Game Code §2050-2097 – California Endangered Species Act

The California Endangered Species Act (CESA) protects certain plant and animal species when they are of special ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the State. CESA established that it is State policy to conserve, protect, restore, and enhance endangered species and their habitats.

CESA was expanded upon the original Native Plant Protection Act and enhanced legal protection for plants. To be consistent with Federal regulations, CESA created the categories of "threatened" and "endangered" species. It converted all "rare" animals into the Act as threatened species, but did not do so for rare plants. Thus, there are three listing categories for plants in California: rare, threatened, and endangered. Under State law, plant and animal species may be formally designated by official listing by the California Fish and Game Commission.

Fish and Game Code §1900-1913 – California Native Plant Protection Act

In 1977 the State Legislature passed the Native Plant Protection Act (NPPA) in recognition of rare and endangered plants of the State. The intent of the law was to preserve, protect, and enhance endangered plants. The NPPA gave the California Fish and Game Commission the power to designate

native plants as endangered or rare, and to require permits for collecting, transporting, or selling such plants. The NPPA includes provisions that prohibit the taking of plants designated as "rare" from the wild, and a salvage mandate for landowners, which requires notification of the CDFW 10 days in advance of approving a building site.

Fish and Game Code §3503, 3503.5, 3800 – Predatory Birds

Under the California Fish and Game Code, all predatory birds in the order Falconiformes or Strigiformes in California, generally called "raptors," are protected. The law indicates that it is unlawful to take, possess, or destroy the nest or eggs of any such bird unless it is in accordance with the code. Any activity that would cause a nest to be abandoned or cause a reduction or loss in a reproductive effort is considered a take. This generally includes construction activities.

Fish and Game Code §1601-1603 – Streambed Alteration

Under the California Fish and Game Code, CDFW has jurisdiction over any proposed activities that would divert or obstruct the natural flow or change the bed, channel, or bank of any lake or stream. Private landowners or project proponents must obtain a "Streambed Alteration Agreement" from CDFW prior to any alteration of a lake bed, stream channel, or their banks. Through this agreement, the CDFW may impose conditions to limit and fully mitigate impacts on fish and wildlife resources. These agreements are usually initiated through the local CDFW warden and will specify timing and construction conditions, including any mitigation necessary to protect fish and wildlife from impacts of the work.

Public Resources Code §21000 - California Environmental Quality Act

CEQA identifies that a species that is not listed on the Federal or State endangered species list may be considered rare or endangered if the species meets certain criteria. (CEQA Guidelines § 15380) Species that are not listed under FESA or CESA, but are otherwise eligible for listing (i.e., candidate, or proposed) may be protected by the local government until the opportunity to list the species arises for the responsible agency.

Species that may be considered for review are included on a list of "Species of Special Concern," developed by the CDFW. Additionally, the California Native Plant Society (CNPS) maintains a list of plant species native to California that have low populations, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. List 1A contains plants that are believed to be extinct. List 1B contains plants that are rare, threatened, or endangered in California and elsewhere. List 2 contains plants that are rare, threatened, or endangered in California, but more numerous elsewhere.

California Wetlands Conservation Policy

In August 1993, the Governor announced the "California Wetlands Conservation Policy." The goals of the policy are to establish a framework and strategy that will:

3.4 BIOLOGICAL RESOURCES

- Ensure no overall net loss and to achieve a long-term net gain in the quantity, quality, and permanence of wetland acreage and values in California in a manner that fosters creativity, stewardship, and respect for private property.
- Reduce procedural complexity in the administration of State and Federal wetland conservation programs.
- Encourage partnerships to make landowner incentive programs and cooperative planning efforts the primary focus of wetland conservation and restoration.

The Governor also signed Executive Order W-59-93, which incorporates the goals and objectives contained in the new policy and directs the Resources Agency to establish an Interagency Task Force to direct and coordinate administration and implementation of the policy.

Natural Community Conservation Planning Act

The Natural Community Conservation Planning Act provides long-term protection of species and habitats through regional, multi-species planning before the special measures of the CESA become necessary.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act authorizes the SWRCB to regulate State water quality and protect beneficial uses.

Water Quality Control Plan for the Sacramento-San Joaquin River Basins

The Water Quality Control Plan for the Sacramento-San Joaquin River Basins (Basin Plan), adopted by the CVRWQCB in 1998, identifies the beneficial uses of water bodies and provides water quality objectives and standards for waters of the Sacramento River and SJR basins, including the Delta.

State and Federal laws mandate the protection of designated “beneficial uses” of water bodies. State law defines beneficial uses as “domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves” (Water Code Section 13050[f]). Additional protected beneficial uses of the SJR include groundwater recharge and fresh water replenishment. Major issues and the general conditions of existing beneficial uses in the SJR are as follows:

- **Water Supply:** The SJR is not currently a source of municipal water supply for the City of Manteca and is not identified as a source for the proposed Project, although some farms in the region use the river as a source of water for irrigation. The City currently uses groundwater only and surface water from the SSJID South County Surface Water Supply Project (SCSWSP), which does not rely on the SJR.
- **Agricultural Supply:** Extensive use is made of SJR and Delta waters for agricultural purposes. Annual water diversions from the Delta by the State Water Project (SWP) and the Central Valley Project (CVP) for agriculture are estimated to reach 4.3 million acre-feet (MAF) per year by 2030. In addition, about 2,000 privately owned agricultural water supply diversions are scattered throughout the Delta, generally consisting of riverside pumping stations.

- **Recreation:** Water-dependent recreation uses of the SJR and the Delta include swimming, wading, waterskiing, sport fishing, and a variety of other activities that involve contact with the water. Noncontact (water-enhanced) recreation uses include picnicking, camping, pleasure boating, hunting, bird watching, education, and aesthetic enjoyment.
- **Groundwater Recharge:** Water from the SJR and the Delta recharges the San Joaquin Valley groundwater basin. Recharge serves to maintain salt balance in the soil column, prevent saltwater intrusion into freshwater aquifers, and provide for water supplies. Groundwater is replenished through deep percolation of streamflow, precipitation, and applied irrigation water. Groundwater quality is generally adequate throughout the San Joaquin Valley and the Delta, although at shallow depths within the Delta the water is often saline and contains high levels of total dissolved solids (TDS) and dissolved minerals. Enforceable TDS standards do not exist for drinking water. The need for treatment generally depends on consumer acceptance.
- **Fish and Wildlife:** The SJR and the waterways of the Delta provide important habitat for a diverse variety of aquatic life and terrestrial wildlife. This includes temporary habitat and migration routes for anadromous and other migratory species, as well as permanent habitat for resident species. Fish dependent on the Delta as a migration corridor, nursery, or permanent residence include Chinook salmon, steelhead, delta smelt, Sacramento splittail, striped bass, American shad, sturgeon, catfish, largemouth bass, and numerous other estuary and freshwater species. The amount and quality of water flowing through the Delta greatly influences the overall productivity of the area on an annual basis. A large assemblage of wildlife uses the Delta either seasonally or year-round, including waterfowl; migratory and resident songbirds; mice, rabbits, and other small mammals; water dependent mammals, such as beaver and muskrat; and predators such as skunk, raccoon, northern harrier, and coyote.

LOCAL

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

A Habitat Conservation Plan (HCP) is a Federal planning document that is prepared pursuant to Section 10 of the FESA. An approved HCP within a defined plan area allows for the incidental take of species and habitat that are otherwise protected under FESA during development activities.

A Natural Community Conservation Plan (NCCP) is a State planning document administered by CDFW. An approved NCCP within a defined plan area allows for the incidental take of species and habitat that are otherwise protected under CESA during growth and development activities.

BACKGROUND

The key purpose of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), 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

3.4 BIOLOGICAL RESOURCES

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.

San Joaquin County's past and future (2001-2051) growth has affected and will continue to affect 97 special status plant, fish and wildlife species in 52 vegetative communities scattered throughout San Joaquin County's 1,400+ square miles and 900,000+ acres, which include 43% of the Sacramento-San Joaquin Delta's Primary Zone. The SJMSCP, in accordance with ESA Section 10(a)(1)(B) and CESA Section 2081(b) Incidental Take Permits, provides compensation for the Conversion of Open Space to non-Open Space uses which affect the plant, fish and wildlife species covered by the Plan, hereinafter referred to as "SJMSCP Covered Species". In addition, the SJMSCP provides some compensation to offset the impacts of open space land conversions on non-wildlife related resources such as recreation, agriculture, scenic values and other beneficial Open Space uses.

The SJMSCP compensates for Conversions of Open Space for the following activities: urban development, mining, expansion of existing urban boundaries, non-agricultural activities occurring outside of urban boundaries, levee maintenance undertaken by the San Joaquin Area Flood Control Agency, transportation projects, school expansions, non-Federal flood control projects, new parks and trails, maintenance of existing facilities for non-Federal irrigation district projects, utility installation, maintenance activities, managing Preserves, and similar public agency projects. These activities will be undertaken by both public and private individuals and agencies throughout San Joaquin County and within the County's incorporated cities of Escalon, Manteca, Lodi, Manteca, Ripon, Stockton and Tracy. Public agencies including Caltrans (for transportation projects), and the San Joaquin Council of Governments (for transportation projects) also will undertake activities which will be covered by the SJMSCP. In addition, 5,340 acres is allocated for anticipated projects (e.g., annexations, general plan amendments)

The 97 SJMSCP Covered Species include 25 State and/or Federally listed species. The SJMSCP Covered Species include 27 plants (6 listed), 4 fish (2 listed), 4 amphibians (1 listed), 4 reptiles (1 listed), 33 birds (7 listed), 15 mammals (3 listed) and 10 invertebrates (5 listed).

IMPLEMENTATION

The SJMSCP is administered by a Joint Powers Authority consisting of members of the San Joaquin County Council of Governments (SJCOG), the CDFW, and the USFWS. Development project applicants are given the option of participating in the SJMSCP as a way to streamline compliance with required local, State and Federal laws regarding biological resources, and typically avoid having to approach each agency independently. According to the SJMSCP, adoption and implementation by local planning jurisdictions provides full compensation and mitigation for impacts to plants, fish and wildlife. Adoption and implementation of the SJMSCP also secures compliance pursuant to the State and Federal laws such as CEQA, the National Environmental Policy Act (NEPA), the Planning

and Zoning Law, the State Subdivision Map Act, the Porter-Cologne Act and the Cortese-Knox Act in regard to species covered under the SJMSCP.

Applicants pay mitigation fees on a per-acre basis, as established by the Joint Powers Authority according to the measures needed to mitigate impacts to the various habitat and biological resources. Different types of land require different levels of mitigation; i.e., one category requires that one acre of a similar land type be preserved for each acre developed, while another type requires that two acres be preserved for each acre developed. The entire County is mapped according to these categories so that land owners, project proponents and project reviewers are easily aware of the applicable SJMSCP fees for the proposed development.

The appropriate fees are collected by the City and remitted to SJCOG for administration. SJCOG uses the funds to preserve open space land of comparable types throughout the County, often coordinating with other private or public land trusts to purchase conservation easements or buy land outright for preservation. Development occurring on land that has been classified under the SJMSCP as “no-pay” would not be required to pay a fee. This category usually refers to already urbanized land and infill development areas. Although the fees are automatically adjusted on an annual basis, based on the construction cost index, they often cannot keep pace with the rapidly rising land prices in the Central Valley.

City of Manteca General Plan

The City of Manteca General Plan includes several policies that are relevant to biological resources and the conservation of sensitive environmental resources. 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 General Plan policies applicable to the Project are identified below:

2023 GENERAL PLAN (EXISTING)

Policies: Resource Conservation Element

- RC-P-31. Minimize impact of new development on native vegetation and wildlife.
- RC-P-32. Condition new development in the vicinity of the San Joaquin River and Walthall Slough to protect riparian habitat, wetlands, and other native vegetation and wildlife communities and habitats.
- RC-P-33. Discourage the premature removal of orchard trees in advance of development, and discourage the removal of other existing healthy mature trees, both native and introduced.
- RC-P-34. Protect special status species and other species that are sensitive to human activities.
- RC-P-35. Allow contiguous habitat areas.
- RC-P-36. Consider the development of new drainage channels planted with native vegetation, which would provide habitat as well as drainage.

3.4 BIOLOGICAL RESOURCES

Implementation: Resource Conservation Element

- RC-I-32. Continue to support and comply with the requirements of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) when reviewing proposed public and private land use changes.
- RC-I-33. Project proponents who opt not to participate in the SJMSCP shall:
 - Satisfy applicable U.S. Endangered Species Act (ESA), California Endangered Species Act (CESA), National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and other applicable local, state, and federal laws and regulation provisions through consultations with the Permitting Agencies and local planning agencies.
 - Provide site-specific research and ground surveys for proposed development projects. This research must include a detailed inventory of all biological resources onsite, and appropriate mitigation measures for avoiding or reducing impact to these biological resources. This requirement may be waived if determined by the City that the proposed project area is already sufficiently surveyed.
- RC-I-34. Until such time that a Clean Water Act regional general permit or its equivalent is issued for coverage under the SJMSCP, acquisition of a Section 404 permit by project proponents will continue to occur as required by existing regulations. Project proponents shall comply with all requirements for protecting federally protected wetlands.
- RC-I-35. Continue to enforce the City's heritage tree ordinance which defines and identifies mature trees to be protected, and establishes regulations for their protection and removal.
- RC-I-36. Limit the access of pedestrians and bicyclists to wetland areas so that access is compatible with long-term protection of these natural resources.
- RC-I-37. The City shall implement multiple use of resource areas, where feasible, that includes passive recreational and educational opportunities with the protection of wildlife and vegetation habitat areas.

MANTECA GENERAL PLAN UPDATE (PROPOSED)

Policies: Resource Conservation Element

- RC-1.1: Where feasible, protect and enhance surface water resources in creeks, streams, channels, seasonal and permanent marshland, wetlands, sloughs, riparian habitat, and vernal pools through sound land use planning, community design, and site planning.
- RC-1.4: Encourage the rehabilitation of culverted or open existing channelized waterways to a more natural condition, as feasible, to remove concrete linings and allow for a connection between the stream channel and the natural water table. Avoid creating additional culverted or open channelized waterways, unless no other alternative is available to protect human health, safety, and welfare.
- RC-1.5: Where feasible, require development projects adjacent to creeks and streams to include opportunities for beneficial uses, such as flood control, ecological restoration, public access trails, and walkways.
- RC-1.6: Encourage the conservation of riparian habitat along local creeks and waterways in order to maintain water quality and provide suitable habitat for native fish and plant species.
- RC-1.8: Minimize pollution of water resources, including the San Joaquin River, other waterways, and the groundwater basin, from urban runoff, soil erosion, and sedimentation.

- RC-7.1: Consider General Plan land use designations that include agriculture, permanent open space, parks and similar uses, as well as waterways (i.e., San Joaquin River, Lower Lone Tree Creek, Middle Lone Tree Creek, Oakwood Lake, Walker Slough, and Walthall Slough), as contributing to the City's open space.
- RC-7.2: Conserve open space for conservation, recreation, and agricultural uses. Conversion of open space, as described under Policy RC-7.1, to developed residential, commercial, industrial, or other similar types of uses, shall be strongly discouraged. Undeveloped land that is designated for urban uses may be developed if needed to support economic development, improve the City's housing stock and range of housing types, and if the proposed development is consistent with the General Plan Land Use Map.
- RCP-8.1: Support the continuation of agricultural uses on lands designated for urban use, until urban development is imminent.
- RC-8.2: Provide an orderly and phased development pattern, encouraging the development of vacant lands within City boundaries prior to conversion of agricultural lands, so that farmland is not subjected to premature development pressure.
- RC-8.3: Encourage permanent agricultural lands surrounding the Planning Area to serve as community separators and continue the agricultural heritage of Manteca.
- RC-9.1: Protect sensitive habitats that include creek corridors, wetlands, vernal pools, riparian areas, wildlife and fish migration corridors, native plant nursery sites, waters of the United States, sensitive natural communities, and other habitats designated by State and Federal agencies.
- RC-9.2: Preserve and enhance those biological communities that contribute to Manteca and the region's biodiversity, including but not limited to, wetlands, riparian areas, aquatic habitat, and agricultural lands
- RC-9.3: Focus conservation efforts on high priority conservation areas that contain suitable habitat for endangered, threatened, migratory, or special-status species and that can be managed with minimal interference with nearby urban land uses.
- RC-9.4: Conserve existing native vegetation, where possible, and integrate regionally native plant species into development and infrastructure projects where appropriate.
- RC-9.5: Condition new development in the vicinity of the San Joaquin River and Walthall Slough to protect riparian habitat, wetlands, and other native vegetation and wildlife communities and habitats.
- RC-9.7: Protect special status species and other species that are sensitive to human activities.
- RC-9.9: Encourage the planting of native vegetation on new drainage channels.
- RC-9.8: Encourage contiguous habitat areas.
- RC-9.10: Continue to support and implement the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (County Habitat Plan).
- RC-11.1: Support the long-term viability and success of the natural Delta ecosystems and the continuation of Delta heritage.

3.4 BIOLOGICAL RESOURCES

- RC-11.2: Support efforts to ensure the protection, viability, and restoration of the Delta ecosystem in perpetuity, including implementing local conservation efforts that improve adequate water supply and quality.
- RC-11.4: Promote protection of areas for habitat restoration, including remnants of riparian and aquatic habitat, particularly in the Delta.
- RC-11.5: Encourage compatibility between agricultural practices and wildlife habitat.
- RC-11.6: Preserve and protect the water availability and quality of the Delta for designated beneficial uses and habitat protection.
- RC-11.7: Encourage and promote the expansion of floodplains and riparian habitats in levee projects.
- RC-12.1: Ensure the long-term viability, success of the natural Delta ecosystems, and continuation of Delta heritage.
- RC-12.2: Support efforts for the protection and restoration of the Delta ecosystem in perpetuity, including implementing local conservation efforts that improve adequate water supply and quality.
- RC-12.4: Support regional efforts to address issues related to urban development, habitat conservation and agricultural protection through participating in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP).
- RC-12.5: Promote protection of remnants of riparian and aquatic habitat.
- RC-12.7: Preserve and protect the water availability and quality of the Delta for both designated beneficial uses, and habitat protections.
- RC-12.8: Protect opportunities for habitat restoration.
- RC-12.9: Encourage and promote the expansion of floodplains and riparian habitats in levee projects.

Implementation: Resource Conservation Element

- RC-1f: Coordinate with the California Department of Fish and Wildlife, San Joaquin County, and local watershed protection groups to identify potentially impacted aquatic habitat within Manteca's Planning Area and to develop riparian management guidelines to be implemented by development, recreation, and other projects adjacent to creeks, streams, and other waterways.
- RC-1g: Explore revising Title 17 (Zoning) of the Municipal Code to include standards for the protection of riparian habitat. The standards should include minimum setback requirements, site design standards, and requirements for the ongoing maintenance of creek and riparian habitat on public and private lands.
- RC-1h: Conserve, and where feasible, create or restore areas that provide important water quality benefits such as riparian corridors, buffer zones, wetlands, undeveloped open space areas, levees, and drainage canals. Restoration efforts should provide for naturalized hydraulic functioning. Restoration should also promote the growth of riparian vegetation to effectively stabilize banks, screen pollutants from runoff entering the channel, enhance fisheries, and provide other opportunities for natural habitat restoration.
- RC-1k: Maintain a buffer area between waterways and urban development to protect water quality and riparian areas.

- RC-7e: Review all development proposals within or adjacent to the Sphere of Influence, to ensure adequate preservation of community separators and open space resources.
- RC-9a: Continue to require projects to comply with the requirements of the County Habitat Plan when reviewing proposed public and private land use changes.
- RC-9b: Require project proponents who opt not to participate in the SJMSCP to:
 - Satisfy applicable U.S. Endangered Species Act (ESA), California Endangered Species Act (CESA), National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and other applicable local, state, and federal laws and regulation provisions through consultations with the Permitting Agencies and local planning agencies.
 - Provide site-specific research and ground surveys for proposed development projects. This research must include a detailed inventory of all biological resources onsite, and appropriate mitigation measures for avoiding or reducing impact to these biological resources. This requirement may be waived if determined by the City that the proposed project area is already sufficiently surveyed.
- RC-9c: Until such time that a Clean Water Act regional general permit or its equivalent is issued for coverage under the SJMSCP, acquisition of a Section 404 permit by project proponents will continue to occur as required by existing regulations. Project proponents shall comply with all requirements for protecting federally protected wetlands.
- RC-9e: Limit the access of pedestrians and bicyclists to wetland areas so that access is compatible with long-term protection of these natural resources.
- RC-9f: Implement the multiple use of resource areas, where feasible, that includes passive recreational and educational opportunities with the protection of wildlife and vegetation habitat areas.
- RC-9g: Where sensitive biological habitats have been identified on or immediately adjacent to a project site, the project shall include appropriate mitigation measures identified by a qualified biologist.
- RC-9h: Utilize existing regulations and procedures, including but not limited to, the Zoning Ordinance and the environmental review process, in order to address impacts to special-status species and conserve sensitive habitats, including wetlands and riparian habitat.
- RC-9i: Consult with State and Federal agencies during the development review process to help identify wetland and riparian habitat that has candidacy for restoration, conservation, and/or mitigation. Focus restoration and/or conservation efforts on areas that would maximize multiple beneficial uses for such habitat.
- RC-11a: Review all projects affecting areas within the Delta Secondary Zone to ensure they are consistent with the criteria and policies set forth by the Delta Stewardship Council's "Delta Plan".
- RC-11b: As applicable, provide opportunities for review of and comment by the Reclamation Districts, the Delta Stewardship Council, Delta Protection Commission, and SWRCB during project review.
- RC-11c: Review all projects located within or adjacent to priority habitat restoration areas, and consult the California Department of Fish and Wildlife to ensure that any impacts do

3.4 BIOLOGICAL RESOURCES

not have a significant effect on the opportunity to restore habitat as described in the Delta Plan.

- RC-12a: Review all projects affecting areas within the Deltas' Secondary Zone to ensure they are consistent with the criteria and policies set forth by the Delta Stewardship Council's "Delta Plan".
- RC-12c: Review all projects located within or adjacent to priority habitat restoration areas, and consult the California Department of Fish and Wildlife to ensure that any impacts do not have a significant effect on the opportunity to restore habitat as described in the Delta Plan.

City of Manteca Municipal Code

The Manteca Municipal Code calls for the avoidance of heritage trees. Heritage trees are defined under Section 17.61.030 of the code as any natural woody plant rooted in the ground and having a diameter of 30 inches or more when measured two feet above the ground. Section 17.19.060 calls for the protection of all existing trees having a diameter of six inches or more when measured 4½ feet above the ground. The City planning department must be notified of planned construction or grade changes within the proximity of existing mature trees. Existing trees must be protected from construction equipment, machinery, grade changes, and excavation for utilities, paving, and footers. Replacement of existing trees is subject to approval from the planning director and must be with a minimum 24-inch box tree of compatible species for the development site and be consistent with Section 17.19.030. Orchard areas of one acre or more are exempt from Section 17.19.060(A); however, as outlined above, policy RC-P-33 of the City's General Plan discourages the premature removal of orchard trees in advance of development.

Section 12.08.070 of the Municipal Code prohibits cutting, pruning, removing, injuring, or interference with any tree, shrub, or plant upon or in any street tree area or other public place in the City without prior approval from the superintendent. The City is authorized to grant such permission at their discretion and where necessary. Except for utility companies, as provided in Section 12.08.080, no such permission shall be valid for a longer period than 30 days after its issuance.

3.4.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact on biological resources if it will:

- 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;
- 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;

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

IMPACTS AND MITIGATION

Impact 3.4-1: The proposed Project has the potential to have a direct or indirect effect on special-status invertebrate species. (Less than Significant)

According to the CNDDDB, there are nine (9) special-status invertebrate species that are documented within the nine-quadrangle region for the Project site, including: California linderiella (*Linderiella occidentalis*), Conservancy fairy shrimp (*Branchinecta conservation*), Vernal pool fairy shrimp (*Branchinecta lynchi*), Vernal pool tadpole shrimp (*Lepidurus packardi*), Crotch bumble bee (*Bombus crotchii*), Molestan blister beetle (*Lytta molesta*), Sacramento anthicid beetle (*Anthicus sacramento*), Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), and western bumble bee (*Bombus occidentalis*). Conservancy fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp, Molestan blister beetle, and valley elderberry longhorn beetle are protected by the SJMSCP.

A field survey/habitat evaluation for the entire Project site was performed on March 15, 2021.

California linderiella requires natural and artificial, seasonally ponded habitat types including: vernal pools, swales, ephemeral drainages, stock ponds, reservoirs, ditches, backhoe pits, and ruts caused by vehicular activities. California linderiella is not anticipated to be directly affected by any individual phase or component of the proposed Project because there are no seasonally ponded habitat types in the Project site.

Conservancy fairy shrimp is a Federal endangered invertebrate. This species requires large to very large vernal pools and vernal lakes, although they also have been found in alkaline pools. Conservancy fairy shrimp is not anticipated to be directly affected by any individual phase or component of the proposed Project because there are no vernal pools or alkaline pools in the Project site.

Vernal pool fairy shrimp is a Federal threatened invertebrate found in the Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. They are commonly found in vernal pools and in sandstone rock outcrop pools. Vernal pool fairy shrimp is not anticipated to be

3.4 BIOLOGICAL RESOURCES

directly affected by any individual phase or component of the proposed Project because there is not appropriate vernal pool habitat on the Project site.

Vernal pool tadpole shrimp is a Federal endangered invertebrate found in vernal pools and stock ponds from Shasta County south to Merced County. Vernal pool tadpole shrimp is not anticipated to be directly affected by any individual phase or component of the proposed Project because there is not appropriate vernal pool habitat on the Project site.

Valley elderberry longhorn beetle is a Federal threatened insect, proposed for delisting. Elderberry (*Sambucus* sp.), which is a primary host species for valley elderberry longhorn beetle, is not present within the Project site. Valley elderberry longhorn beetle is not anticipated to be directly affected by any individual phase or component of the proposed Project because there are no blue elderberry shrubs in the Project site.

Essential habitat for crotch bumble bee, Molestan blister beetle, Sacramento anthicid beetle, and western bumble bee is not present on the Project site.

No special-status invertebrates, or their habitat, were observed within the Project site during field survey and none are expected to be affected by the proposed Project. Therefore, the proposed Project would have a **less than significant** impact on special-status invertebrate species.

Impact 3.4-2: The proposed Project has the potential to have direct or indirect effects on special-status reptile and amphibian species. (Less than Significant)

According to the CNDDDB, there are four (4) special-status reptile species that are documented within the nine-quadrangle region for the Project site, including: California glossy snake (*Arizona elegans occidentalis*), coast horned lizard (*Phrynosoma blainvillii*), Giant garter snake (*Thamnophis couchi gigas*), San Joaquin coachwhip (*Masticophis flagellum ruddocki*), and western pond turtle (*Emys marmorata*). Giant garter snake, San Joaquin coachwhip and western pond turtle are protected by the SJMSCP. Additionally, there are four special-status amphibian species that are documented within the nine-quadrangle region for the Project site, including: California tiger salamander (*Ambystoma californiense* [*A. tigrinum* c.]), California red-legged frog (*Rana aurora draytoni*), foothill yellow-legged frog (*Rana boylei*), and western spadefoot (*Spea hammondi*). All four amphibians are protected by the SJMSCP.

No special-status reptiles or amphibians, or their habitat, were observed within the Project site during the field survey and none are expected to be affected by the proposed Project. Therefore, the proposed Project would have a **less than significant** impact on special status reptile or amphibian species.

Impact 3.4-3: The proposed Project has the potential to have direct or indirect effects on special-status bird species. (Less than Significant with Mitigation)

According to the CNDDDB, there are thirteen (13) special-status bird species that are documented within the nine-quadrangle region for the Project site, including: Aleutian goose (*Branta canadensis leucopareia*), Burrowing owl (*Athene cunicularia*), California black rail (*Laterallus jamaicensis coturniculus*), California horned lark (*Eremophila alpestris actia*), least Bell's vireo (*Vireo bellii pusillus*), loggerhead shrike (*Lanius ludovicianus*), merlin (*Falco columbarius*), song sparrow (Modesto Population) (*Melospiza melodia*), Swainson's hawk (*Buteo swainsoni*), tricolored blackbird (*Agelaius tricolor*), Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), white-tailed kite (*Elanus leucurus*), and Yellow-headed blackbird (*Xanthocephalus xanthocephalus*). Least Bell's vireo is not protected by the SJMSCP; the remaining bird species are protected by the SJMSCP.

The Project site may provide suitable foraging habitat for a variety of potentially occurring special-status birds, including some of those listed above. Potential nesting habitat is present in a variety of trees located within the Project site and in the vicinity. There is also the potential for other special-status birds that do not nest in this region and represent migrants or winter visitants to forage on the Project site.

Year-round birds: Special-status birds that can be present in the region throughout the year include: bald eagle (*Haliaeetus leucocephalus*), black rail (*Laterallus jamaicensis*), burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), Nuttalls woodpecker (*Picoides nuttallii*), oak titmouse (*Baeolophus inornatus*), song sparrow (Modesto population) (*Melospiza melodia*), tricolored blackbird (*Agelaius tricolor*), Williamson's sapsucker (*Sphyrapicus thyroideus*), yellow-billed magpie (*Pica nuttalli*), among others. Some of these species are migratory, but also reside year-round in California.

Summering Birds: Special-status birds that are only present in the region in the spring and summer months include: Aleutian goose (*Branta canadensis leucopareia*), least bittern (*Ixobrychus exilis*), Swainson's hawk (*Buteo swainsoni*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), and yellow-billed magpie (*Pica nuttalli*).

Overwintering Birds: Special-status birds that are only present in the region in the fall and winter months include: fox sparrow (*Passerella iliaca*), lesser yellowlegs (*Tringa flavipes*), Lewis's woodpecker (*Melanerpes lewis*), long-billed curlew (*Numenius americanus*), marbled godwit (*Limosa fedoa*), merlin (*Falco columbarius*), mountain plover (*Charadrius montanus*), peregrine falcon (*Falco peregrinus*), short-eared owl (*Asio flammeus*), and western grebe (*Aechmophorus occidentalis*).

Nesting Raptors (Birds of Prey): All raptors (owls, hawks, eagles, falcons), including species and their nests, are protected from take pursuant to the Fish and Game Code of California Section 3503.5, and the Federal Migratory Bird Treaty Act, among other Federal and State regulations. Special-status raptors that are known to occur in the region include: burrowing owl (*Athene cunicularia*), red-tailed

3.4 BIOLOGICAL RESOURCES

hawk (*Buteo jamaicensis*), Swainson's hawk (*Buteo swainsoni*), and white-tailed kite (*Elanus leucurus*), among others.

Analysis: Powerlines and trees located in the region represent potentially suitable nesting habitat for a variety of special-status birds. Additionally, the agricultural land represents potentially suitable nesting habitat for the ground-nesting birds. In general, most nesting occurs from late February and early March through late July and early August, depending on various environmental conditions. The CNDDDB currently contains records for Swainson's hawk, burrowing owl, loggerhead shrike, and tricolored blackbird within two miles of the Project site. In addition to the species described above, common raptors may nest in or adjacent to the Project site.

New sources of noise and light during the construction and operational phases of the project could adversely affect nesters if they located adjacent to the Project site in any given year. Additionally, the proposed Project would eliminate the agricultural areas on the Project site, which serve as potential foraging habitat for birds throughout the year. Mitigation Measure 3.4-1 requires participation in the SJMSCP. As part of the SJMSCP, SJCOG requires preconstruction surveys for projects that occur during the avian breeding season (March 1 – August 31). When active nests are identified, the biologists develop buffer zones around the active nests as deemed appropriate until the young have fledged. SJCOG also uses the fees to purchase habitat as compensation for the loss of foraging habitat. Implementation of the proposed Project, with the Mitigation Measure 3.4-1, would ensure that potential impacts to special status birds are reduced to a **less than significant** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.4-1: *Prior to commencement of any grading activities, the Project proponent shall seek coverage under the SJMSCP to mitigate for habitat impacts to covered special status species. Coverage involves compensation for habitat impacts on covered species through implementation of incidental take and minimization Measures (ITMMs) and payment of fees for conversion of lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. Obtaining coverage for a Project includes incidental take authorization (permits) under the Endangered Species Act Section 10(a), California Fish and Game Code Section 2081, and the MBTA. Coverage under the SJMSCP would fully mitigate all habitat impacts on covered special-status species.*

Impact 3.4-4: The proposed Project has the potential to result in direct or indirect effects on special-status mammal species. (Less than Significant)

According to the CNDDDB, there are eight (8) special-status mammal species that are documented within the nine-quadrangle region for the Project site, including: American badger (*Taxidea taxus*), pallid bat (*Antrozous pallidus*), Riparian (San Joaquin Valley) woodrat (*Neotoma fuscipes riparia*), Riparian brush rabbit (*Sylvilagus bachmani riparius*), San Joaquin kit fox (*Vulpes macrotis mutica*), San Joaquin pocket mouse (*Perognathus inornatus*), Townsend's big-eared bat (*Corynorhinus townsendii*), and western mastiff bat (*Eumops perotis californicus*). Pallid bat is not protected by the SJMSCP; the remaining mammal species are protected by the SJMSCP.

Riparian (San Joaquin Valley) woodrat and riparian brush rabbit: The Project site does not contain appropriate habitat for riparian (San Joaquin Valley) woodrat and riparian brush rabbit. These species were not observed during the field survey and have not been documented on the Project site. Based on a field survey these species are not present. Therefore, the proposed Project would have a *less than significant* impact on this special-status species.

American badger, San Joaquin kit fox, or San Joaquin pocket mouse: The Project site is frequently disturbed from active agricultural activities. As a result, the Project site does not contain high quality habitat for the American badger. These species have not been documented within two miles of the Project site. It is unlikely that the Project site is used by American badger, San Joaquin kit fox, or San Joaquin pocket mouse and these species have not been observed during recent or previous field surveys. Therefore, the proposed Project would have a *less than significant* impact on these species.

Special-status bats: The Project site provides potential habitat for several special-status bats, including: pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), and western mastiff bat (*Eumops perotis californicus*). All three bat species are Species of Special Concern; pallid bat is not protected by the SJMSCP, but the other two bat species are protected by the SJMSCP.

Development of the Project site would eliminate foraging habitat for special status bats by removing the agricultural areas. These special status bat species were not observed during the field survey and have not been documented on the Project site; therefore, they are not expected to be directly affected. Implementation of Mitigation Measure 3.4-1 would provide compensation for the loss of the potential foraging habitat. Therefore, the proposed Project would have a *less than significant* impact on special status bat species.

Impact 3.4-5: The proposed Project has the potential for direct or indirect effects on candidate, sensitive, or special-status plant species. (Less than Significant)

According to the CNDDDB, there are 19 special-status plant species that are documented within the nine-quadrangle region for the Project site, including: alkali-sink goldfields (*Lasthenia chrysantha*), big tarplant (*Blepharizonia plumosa*), caper-fruited tropidocarpum (*Tropidocarpum capparideum*), Delta button-celery (*Eryngium racemosum*), diamond-petaled California poppy (*Eschscholzia rhombipetala*), large-flowered fiddleneck (*Amsinckia grandiflora*), lesser saltscale (*Atriplex minuscula*), Mason's lilaeopsis (*Lilaeopsis masonii*), palmate-bracted bird's-beak (*Chloropyron palmatum*), showy golden madia (*Madia radiata*), slough thistle (*Cirsium crassicaule*), recurved larkspur (*Delphinium recurvatum*), saline clover (*Trifolium hydrophilum*), San Joaquin spearscale (*Extriplex joaquinana*), Sanford's arrowhead (*Sagittaria sanfordii*), Suisun Marsh aster (*Symphyotrichum lentum*), woolly rose-mallow (*Hibiscus lasiocarpus* var. *occidentalis*), Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*), and watershield (*Brasenia schreberi*). The following six plant species are not protected by the SJMSCP: alkali-sink goldfields, big tarplant, lesser saltscale, saline clover, woolly rose-mallow, and watershield. The remaining plant species are protected by the SJMSCP.

Of the nineteen (19) documented plant species, two (2) are Federally listed species (large-flowered fiddleneck and palmate-bracted bird's-beak, both endangered) and four (4) are State listed species (Delta button-celery, large-flowered fiddleneck, and palmate-bracted bird's-beak are endangered, while Mason's lilaeopsis is rare). Additionally, seventeen (17) are CNPS 1B listed species and two (2) are CNPS 2 listed species.

A field survey/habitat evaluation was performed on March 15, 2021. The field survey coincided with the early blooming period for special status plants known to occur within the region; however, it was determined during the field survey that the agricultural disturbance on the project site precludes the existence of special status plants unless agricultural operations were to cease. The conditions of the Project site are highly disturbed due to the active agricultural operations and active urban operations. Implementation of the individual phases, and the proposed Project as a whole, will have a *less than significant* impact on special status plants.

Impact 3.4-6: The proposed Project has the potential to effect protected wetlands and jurisdictional waters. (No Impact)

As noted previously, the Development Area has some existing improvements including two existing houses and barns and/or sheds with associated equipment, dirt and gravel roadways. The house and barn structures are located in the northeastern portions of the Development Area. The majority of the Development Area is in active agricultural use. Additionally, an SSJID pipeline exists within the Development Area. Further, an RD 2094 dry levee makes up a portion of the southern property line.

The Project site does not contain protected wetlands or other jurisdictional areas and there is no need for permitting associated with the Federal or State Clean Water Acts. Absent any wetlands or jurisdictional waters, implementation of the proposed Project would have *no impact* relative to this topic.

Impact 3.4-7: The proposed Project has the potential to result in adverse effects on riparian habitat or a sensitive natural community. (Less than Significant)

The CNDDDB record search revealed documented occurrences of five sensitive habitats within the nine-quadrangle region for the Project site, including: Great Valley Cottonwood Riparian Forest, Great Valley Mixed Riparian Forest, Great Valley Valley Oak Riparian Forest, Coastal and Valley Freshwater Marsh, and Elderberry Savanna. None of these sensitive natural communities occur within the portion of the Project site. Implementation of the proposed Project would have a *less than significant* impact on riparian habitats or natural communities.

Impact 3.4-8: The proposed Project has the potential to result in interference with the movement of native fish or wildlife species or with established wildlife corridors, or impede the use of native wildlife nursery sites. (Less than Significant)

The CNDDDB record search did not reveal any documented wildlife corridors or wildlife nursery sites on or adjacent to the Project site. Special status fish species documented within the region include:

Delta smelt (*Hypomesus transpacificus*), Hardhead (*Mylopharodon conocephalus*), Central Valley steelhead (*Oncorhynchus mykiss*), Central Valley fall- /late fall-run Chinook salmon (*Oncorhynchus tshawytscha*), and Longfin smelt (*Spirinchus thaleichthys*). The closest major natural movement corridor for native fish that are documented in the region is the San Joaquin River, located approximately 2.1 miles to the west of the Project site. There are also SSJID irrigation canals that run through Manteca that are known to have native fish enter the canal system approximately 11 miles north of Manteca at the French Camp Slough. Specifically, Central Valley fall- /late fall-run Chinook salmon (*Oncorhynchus tshawytscha*) and known to exist in the SSJID canals.

The land uses within the Project site would not have any direct disturbance to the San Joaquin River or its tributaries, and therefore, would not have any direct disturbance to the movement corridor or habitat.

The ongoing operational phase of the proposed Project requires discharge of stormwater into the City storm drainage system, which is discharges in the SSJID system and ultimately into the Delta. The discharge of stormwater could result in indirect impacts to special status fish and wildlife if stormwater was not appropriately treated through BMPs prior to its discharge to the Delta. The Manteca Municipal Code Title 13 (Public Services) Chapter 13.28 (Stormwater Management and Discharges) establish minimum storm water management requirements and controls. Storm water drainage is managed through the implementation of best management practices to the extent they are technologically achievable to prevent and reduce pollutants. The City requires reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses. The management of water quality through BMPs is intended to ensure that water quality does not degrade to levels that would interfere or impede fish or wildlife. Implementation of these required measures would ensure that this potential impact is reduced to a *less than significant* level.

Impact 3.4-9: The proposed Project has the potential to conflict with an adopted Habitat Conservation Plan. (Less than Significant)

The proposed Project is subject to the SJMSCP. The proposed Project does not conflict with the SJMSCP. Therefore, the proposed Project would have a *less than significant* impact relative to this topic. Mitigation Measure 3.4-1 requires participation in the SJMSCP.

Impact 3.4-10: The proposed Project has the potential to conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (Less than Significant)

The Resource Conservation Element of the General Plan establishes numerous policies and implementation measures related to biological resources as listed below:

Resource Conservation Element Policies (General Plan 2023)

RC-P-31. Minimize impact of new development on native vegetation and wildlife.

3.4 BIOLOGICAL RESOURCES

- **Consistent:** *This EIR includes an in depth analysis of impacts for sensitive plants and wildlife, as well as habitat. Where impacts are identified, mitigation measures are presented to minimize, avoid, or compensate to the extent practicable.*

RC-P-33. Discourage the premature removal of orchard trees in advance of development, and discourage the removal of other existing healthy mature trees, both native and introduced.

- **Consistent:** *The proposed Project will not require the removal of orchard trees in order to develop the Project site. There are no orchard trees located on-site. The Project site contains numerous ornamental landscaping and shade trees in association with the existing residences, structures, and roadways. The proposed site plan would incorporate specific trees into the final design. Neither the City, nor the applicants have any intention on removing these trees in advance of development. Nevertheless, the City would review Project improvement plans, grading plans, and building plans and apply the Manteca Municipal Code (17.19.060) as applicable once these Project details are known.*

RC-P-34. Protect special status species and other species that are sensitive to human activities.

- **Consistent:** *This EIR includes an in depth analysis of impacts for sensitive plants and wildlife, as well as habitat. Where impacts are identified, mitigation measures are presented to minimize, avoid, or compensate to the extent practicable.*

RC-P-35. Allow contiguous habitat areas.

- **Consistent:** *Habitat areas in the vicinity of the Project site include largely agricultural plant communities which provide habitat for a variety of biological resources in the region. Agricultural areas occur throughout the region and are generally flat and well drained, and as a result are well suited for many crops. Alfalfa fields, hay, row crops, orchards, dominate the agricultural areas in the vicinity. The proposed Project does not require contiguous habitat areas to change or convert to another use.*

RC-P-36. Consider the development of new drainage channels planted with native vegetation, which would provide habitat as well as drainage.

- **Consistent:** *The Project does not include new drainage channels.*

Resource Conservation Element Policies (2040 General Plan)

RC-1.5: Where feasible, require development projects adjacent to creeks and streams to include opportunities for beneficial uses, such as flood control, ecological restoration, public access trails, and walkways.

- **Consistent:** *The land uses within the Project site would not have any direct disturbance to the San Joaquin River or its tributaries. There are no creeks or streams located on or adjacent to the Project site.*

RC-7.2: Conserve open space for conservation, recreation, and agricultural uses. Conversion of open space, as described under Policy RC-7.1, to developed residential, commercial, industrial, or other

similar types of uses, shall be strongly discouraged. Undeveloped land that is designated for urban uses may be developed if needed to support economic development, improve the City's housing stock and range of housing types, and if the proposed development is consistent with the General Plan Land Use Map.

- **Consistent:** *The proposed Project site contains undeveloped agricultural land and rural residential land that is designated for urban uses by the General Plan Land Use Map. The proposed Project would require a minor General Plan Land Use Amendment to adjust the exact location and shape of the Park land use designation within Development Area. No changes are proposed for the Non-development Area 1. It is noted that the General Plan Update proposed changes to the land use in Non-development Area 2, and the proposed Land Uses under this General Plan Amendment are consistent with the General Plan Update. As such, the Project is generally consistent with the General Plan Land Use Map.*

RCP-8.1: Support the continuation of agricultural uses on lands designated for urban use, until urban development is imminent.

- **Consistent:** *As noted above in the discussion for Policy RC-7.2, the Project site contains undeveloped agricultural land and rural residential land that is designated for urban uses by the General Plan Land Use Map. The proposed Project would require a minor General Plan Land Use Amendment to adjust the exact location and shape of the Park land use designation within Development Area. The Project is generally consistent with the General Plan Land Use Map. It is also noted that development of the Project site is likely imminent due to the planned future growth near regional roadways and highways, particularly in the southern portion of the City of Manteca.*

RC-8.2: Provide an orderly and phased development pattern, encouraging the development of vacant lands within City boundaries prior to conversion of agricultural lands, so that farmland is not subjected to premature development pressure.

- **Consistent:** *The Project site is located in the southwestern portion of the City of Manteca directly adjacent to the to the city limits. Although the Project site is not currently within the City limits, the Project would establish a logical phasing plan designed to ensure that each phase of development would include necessary public improvements required to meet City standards. The proposed Project would also provide an orderly and phased development pattern on a site currently used for agricultural and rural residential uses. The Project site is located within an area of the City planned for urban uses. The Project site is located along a major roadway, Airport Way, and south of State Route 120. Uses immediately adjacent to the east and south of the Project site include agricultural and residential uses, including ranchettes and large estates lots. Existing uses north of the Project site are residential uses which includes a residential subdivision. Existing uses west of the Project site are residential uses.*

RC-9.4: Conserve existing native vegetation, where possible, and integrate regionally native plant species into development and infrastructure projects where appropriate.

3.4 BIOLOGICAL RESOURCES

- **Consistent:** *Vegetation on the Project site consists of agricultural, ruderal, and landscaping. Because of the active agricultural use over the majority of the Project site, there is very limited natural vegetation on the Project site with the exception of the perimeter of the agricultural fields and near the existing residential uses along Airport Way and Woodward Avenue. As discussed in Impact 3.4-5, no special-status plants were observed within the Project site during field survey/habitat evaluation.*

RC-9.5: Condition new development in the vicinity of the San Joaquin River and Walthall Slough to protect riparian habitat, wetlands, and other native vegetation and wildlife communities and habitats.

- **Consistent:** *The Project site is not located in the vicinity of the San Joaquin River or Walthall Slough. There are no creeks, streams, or sensitive natural communities located on or adjacent to the Project site.*

RC-12.4: Support regional efforts to address issues related to urban development, habitat conservation and agricultural protection through participating in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP).

- **Consistent:** *The proposed Project is subject to the SJMSCP. The proposed Project does not conflict with the SJMSCP. Mitigation Measure 3.4-1 requires participation in the SJMSCP.*

Municipal Code

The Manteca Municipal Code calls for the avoidance of heritage trees as defined under section 17.61.030. Heritage trees are any natural woody plant rooted in the ground and having a diameter of 30 inches or more when measured two feet above the ground. There are 13 existing trees located near the existing residences along Woodward Avenue and Airport Way that likely need to be removed in order to develop the site.

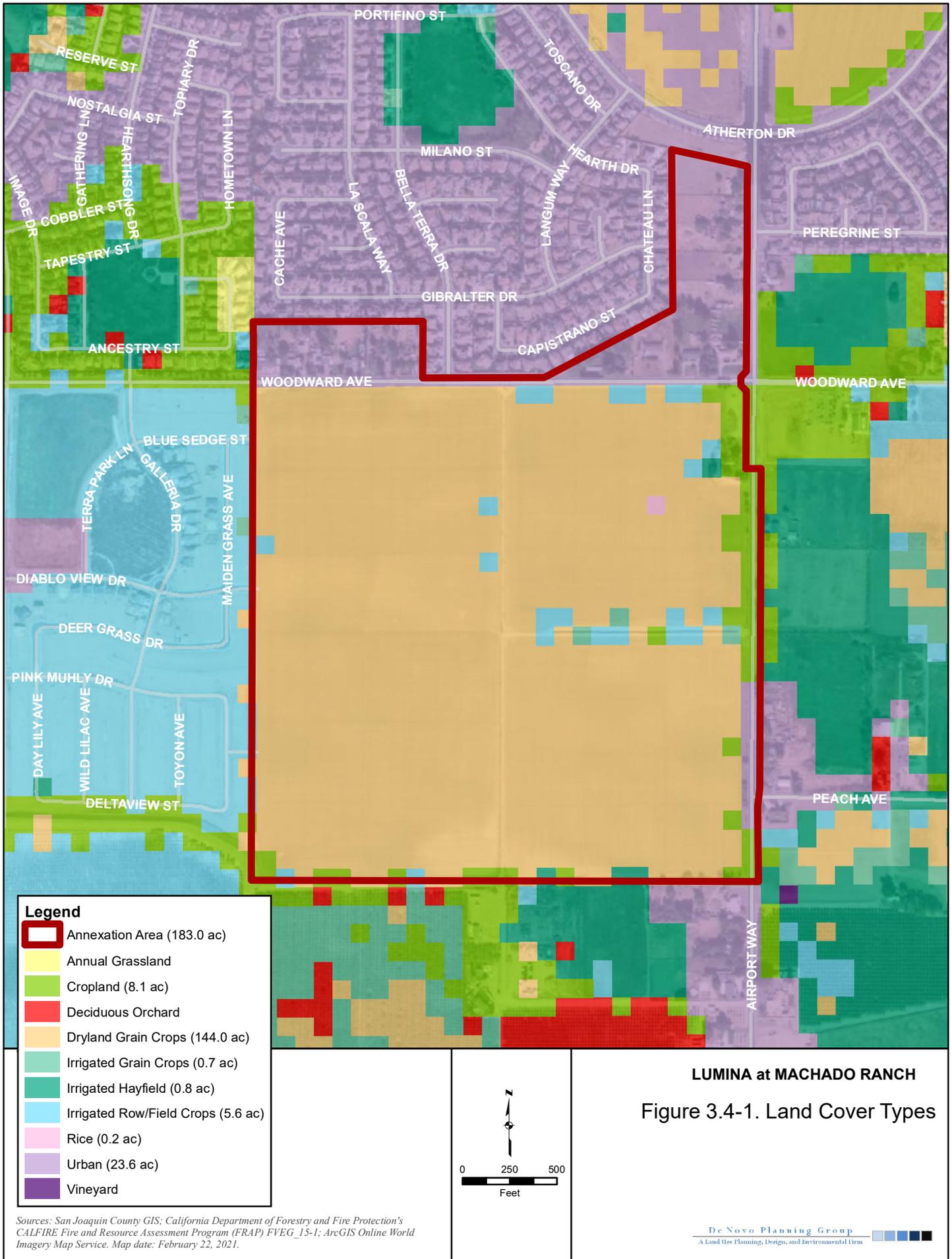
Section 17.19.060 calls for the protection of all existing trees having a diameter of six inches or more when measured 4½ feet above the ground. The City planning department must be notified of planned construction or grade changes within the proximity of existing mature trees. Existing trees must be protected from construction equipment, machinery, grade changes, and excavation for utilities, paving, and footers. Replacement of existing trees is subject to approval from the planning director and must be with a minimum 24-inch box tree of compatible species for the development site and be consistent with Section 17.19.030.

Section 12.08.070 of the municipal code prohibits cutting, pruning, removing, injuring, or interference with any tree, shrub, or plant upon or in any street tree area or other public place in the City without prior approval from the superintendent. The City is authorized to grant such permission at their discretion and where necessary. Except for utility companies, as provided in Section 12.08.080, no such permission shall be valid for a longer period than 30 days after its issuance.

Any trees that cannot remain in the final design as shown in the improvement plans must be replaced in accordance with the *Manteca Municipal Code (17.19.060)* if deemed applicable at the time of removal.

The City would require compliance with the Manteca Municipal Code for removal and replacement of trees as a Condition of Approval. Specifically, the Project Proponent would be required to provide a landscape plan that includes tree planting specifications established by the Manteca Municipal Code (17.19.060) for the replacement of any trees, excluding orchard and non-native trees, to be removed at a ratio of 1:1. Replacement trees would be planted on-site at a location that is agreeable to the City. Therefore, the proposed Project would have a ***less than significant*** impact relative to this topic.

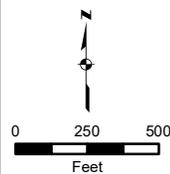
This page left intentionally blank.



Legend

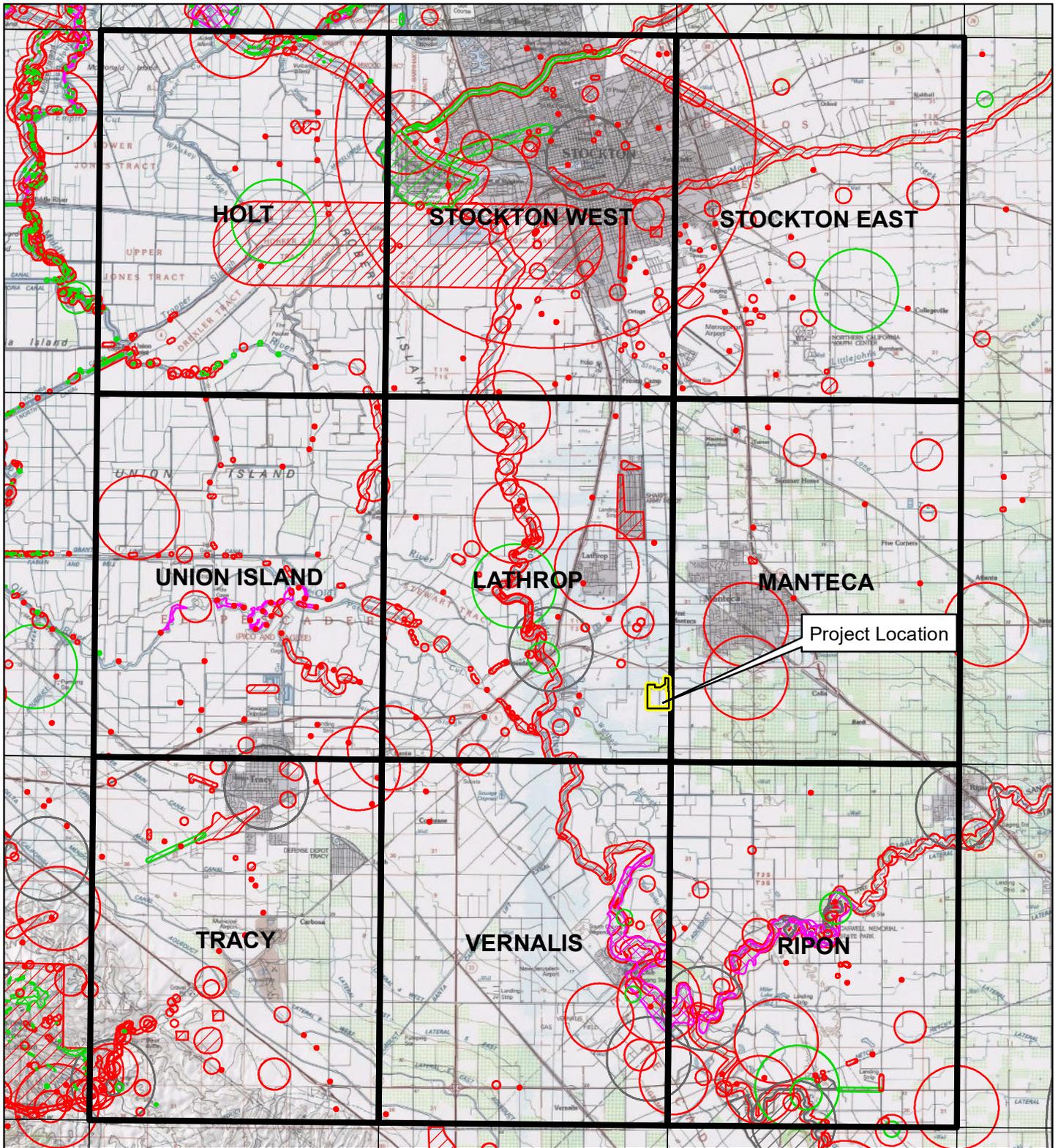
- Annexation Area (183.0 ac)
- Annual Grassland
- Cropland (8.1 ac)
- Deciduous Orchard
- Dryland Grain Crops (144.0 ac)
- Irrigated Grain Crops (0.7 ac)
- Irrigated Hayfield (0.8 ac)
- Irrigated Row/Field Crops (5.6 ac)
- Rice (0.2 ac)
- Urban (23.6 ac)
- Vineyard

Sources: San Joaquin County GIS; California Department of Forestry and Fire Protection's CALFIRE Fire and Resource Assessment Program (FRAP) FVEG_15-1; ArcGIS Online World Imagery Map Service. Map date: February 22, 2021.



LUMINA at MACHADO RANCH
Figure 3.4-1. Land Cover Types

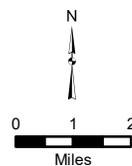
This page left intentionally blank.



Legend

- | | |
|----------------------|------------------------------|
| Plant (80m) | Animal (non-specific) |
| Plant (specific) | Animal (circular) |
| Plant (non-specific) | Terrestrial Comm. (specific) |
| Plant (circular) | Terrestrial Comm. (circular) |
| Animal (80m) | Multiple (non-specific) |
| Animal (specific) | Multiple (circular) |

CNDDDB version 2/2021. Please Note: the occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not been surveyed and/or mapped. Lack of information in the CNDDDB about a species or an area can never be used as proof that no special status species occur in an area. Map date: February 23, 2021.



LUMINA at MACHADO RANCH

Figure 3.4-2. California Natural Diversity Database

9-Quad Search

This page left intentionally blank.

This section provides a discussion of the prehistoric period background, ethnographic background, historic period background, known cultural and tribal resources in the region, the regulatory setting, an impact analysis, and mitigation measures. Information in this section is derived primarily from the *Cultural Resource Assessment for the Lumina Ranch Project Site, City of Manteca, San Joaquin County, California* (Peak & Associates, Inc., February 2021).

The Notice of Preparation (NOP) for the proposed Project was sent to the Native American Heritage Commission (NAHC) for review and comment on January 22, 2021. The NAHC provided comments on the proposed Project and a list of Native American contacts for consultation by the City of Manteca. There were no comments received during the public review period for the NOP related to cultural resources.

KEY TERMS

The following key terms are used throughout this section to describe cultural and tribal resources and the framework that regulates them:

Archaeology. The study of historic or prehistoric peoples and their cultures by analysis of their artifacts and monuments.

Complex. A patterned grouping of similar artifact assemblages from two or more sites, presumed to represent an archaeological culture.

Ethnography. The study of contemporary human cultures.

Midden. A deposit marking a former habitation site and containing such materials as discarded artifacts, bone and shell fragments, food refuse, charcoal, ash, rock, human remains, structural remnants, and other cultural leavings.

3.5.1 ENVIRONMENTAL SETTING

CULTURAL AND HISTORICAL SETTING

Prehistory

In the early decades of the 1900s, E.J. Dawson explored numerous sites near Stockton and Lodi, later collaborating with W.E. Schenck (Schenck and Dawson 1929). By 1933, the focus of work was directed to the Cosumnes locality, where survey and excavation studies were conducted by the Sacramento Junior College (Lillard and Purves 1936). Excavation data, in particular from the stratified Windmill site (CA-Sac-107), suggested two temporally distinct cultural traditions. Later work at other mounds by Sacramento Junior College and the University of California, Berkeley, enabled the investigators to identify a third cultural tradition, intermediate between the previously postulated Early and Late Horizons. The three-horizon sequence, based on discrete changes in ornamental artifacts and mortuary practices, as well as on observed differences in soils within sites (Lillard, Heizer and Fenenga 1939), was later refined by Beardsley (1954). An expanded definition of artifacts diagnostic of each time period was developed, and its application extended to parts of

3.5 CULTURAL AND TRIBAL RESOURCES

the central California coast. Traits held in common allow the application of this system within certain limits of time and space to other areas of prehistoric central California.

The Windmill Culture (Early Horizon) is characterized by ventrally-extended burials (some dorsal extensions are known), with westerly orientation of heads; a high percentage of burials with grave goods; frequent presence of red ocher in graves; large projectile points, of which 60 percent are of materials other than obsidian; rectangular Haliotis beads; Olivella shell beads (types A1a and L); rare use of bone; some use of baked clay objects; and well-fashioned charmstones, usually perforated.

The Cosumnes Culture (Middle Horizon) displays considerable changes from the preceding cultural expression. The burial mode is predominately flexed, with variable cardinal orientation and some cremations present. There are a lower percentage of burials with grave goods, and ocher staining is common in graves. Olivella beads of types C1, F and G predominate, and there is abundant use of green Haliotis sp. rather than red Haliotis sp. Other characteristic artifacts include perforated and canid teeth; asymmetrical and "fishtail" charmstones, usually unperforated; cobble mortars and evidence of wooden mortars; extensive use of bone for tools and ornaments; large projectile points, with considerable use of rock other than obsidian; and use of baked clay.

Hotchkiss Culture (Late Horizon) -- The burial pattern retains the use of the flexed mode, and there is wide spread evidence of cremation, lesser use of red ocher, heavy use of baked clay, Olivella beads of Types E and M, extensive use of Haliotis ornaments of many elaborate shapes and forms, shaped mortars and cylindrical pestles, bird-bone tubes with elaborate geometric designs, clam shell disc beads, small projectile points indicative of the introduction of the bow and arrow, flanged tubular pipes of steatite and schist, and use of magnesite (Moratto 1984:181-183). The characteristics noted are not all-inclusive, but cover the more important traits.

Schulz (1981), in an extensive examination of the central California evidence for the use of acorns, used the terms Early, Middle and Late Complexes, but the traits attributed to them remain generally the same. While it is not altogether clear, Schulz seemingly uses the term "Complex" to refer to the particular archeological entities (above called "Horizons") as defined in this region. Ragir's (1972) cultures are the same as Schulz's complexes.

Bennyhoff and Hughes (1984) have presented alternative dating schemes for the Central California Archeological Sequence. The primary emphasis is a more elaborate division of the horizons to reflect what is seen as cultural/temporal changes within the three horizons and a compression of the temporal span. There have been other chronologies proposed, including Fredrickson (1973), and since it is correlated with Bennyhoff's (1977) work, it does merit discussion. The particular archeological cultural entities Fredrickson has defined, based upon the work of Bennyhoff, are patterns, phases and aspects. Bennyhoff's (1977) work in the Plains Miwok area is the best definition of the Cosumnes District, which likely conforms to Fredrickson's pattern. Fredrickson also proposed.

There have been other chronologies proposed, including Fredrickson (1973), and since it is correlated with Bennyhoff's (1977) work, it does merit discussion. The particular archeological

cultural entities Fredrickson has defined, based upon the work of Bennyhoff, are patterns, phases and aspects. Bennyhoff's (1977) work in the Plains Miwok area is the best definition of the Cosumnes District, which likely conforms to Fredrickson's pattern. Fredrickson also proposed periods of time associated heavily with economic modes, which provides a temporal term for comparing contemporary cultural entities. It corresponds with Willey and Phillips' (1958) earlier "tradition", although it is tied more specifically to the archeological record in California.

Ethnography

The Project site lies within the northern portion of the ethnographic territory of the Yokuts people. The Yokuts were members of the Penutian language family which held all of the Central Valley, San Francisco Bay Area, and the Pacific Coast from Marin County to near Point Sur. The Yokuts differed from other ethnographic groups in California as they had true tribal divisions with group names (Kroeber 1925; Latta 1949). Each tribe spoke a particular dialect, common to its members, but similar enough to other Yokuts that they were mutually intelligible (Kroeber 1925).

The Yokuts held portions of the San Joaquin Valley from the Tehachapis in the south to Stockton in the north. On the north they were bordered by the Plains Miwok, and on the west by the Saclan or Bay Miwok and Costonoan peoples. Although neighbors were often from distinct language families, differences between the people appear to have been more influenced by environmental factors as opposed to linguistic affinities. Thus, the Plains Miwok were more similar to the nearby Yokuts than to foothill members of their own language group. Similarities in cultural inventory co-varied with distance from other groups and proximity to culturally diverse people. The material culture of the southern San Joaquin Yokuts was therefore more closely related to that of their non-Yokuts neighbors than to that of Delta members of their own language group.

Trade was well developed, with mutually beneficial interchange of needed or desired goods. Obsidian, rare in the San Joaquin Valley, was obtained by trade with Paiute and Shoshoni groups on the eastern side of the Sierra Nevada, where numerous sources of this material are located, and to some extent from the Napa Valley to the north. Shell beads, obtained by the Yokuts from coastal people, and acorns, rare in the Great Basin, were among many items exported to the east by Yokuts traders (Davis 1961).

Economic subsistence was based on the acorn, with substantial dependency on gathering and processing of wild seeds and other vegetable foods. The rivers, streams, and sloughs that formed a maze within the valley provided abundant food resources such as fish, shellfish, and turtles. Game, wild fowl, and small mammals were trapped and hunted to provide protein augmentation of the diet. In general, the eastern portion of the San Joaquin Valley provided a lush environment of varied food resources, with the estimated large population centers reflecting this abundance (Cook 1955; Baumhoff 1963).

Settlements were oriented along the water ways, with their village sites normally placed adjacent to these features for their nearby water and food resources. House structures varied in size and shape (Latta 1949; Kroeber 1925), with most constructed from the readily available tules found in

the extensive marshes of the low-lying valley areas. The housepit depressions for the structures ranged in diameter from 3 meters to 18 meters (Wallace 1978:470).

Historical Background

The first extensive wheat-growing in the San Joaquin Valley took place on the sand plains in the region between Stockton and Manteca and on the west side of the valley between Tracy and Newman. The wheat growing was due to an initial experiment of John Wheeler Jones, who planted 160 acres of wheat in 1855 which included the central town site of what is now Manteca. He plowed his fields with a walking plow. The famous Stockton gang-plow was reported to be invented near the present site of Manteca (Smith 1960: 221, 243).

When the Visalia Branch of the Central Pacific Railroad (later the Fresno Branch of the Southern Pacific) was completed through the San Joaquin Valley, a shipping point was set up in the region and named Cowell or Cowell Station for Joshua Cowell, who had donated the right of way for the railroad. Maps of the area printed in the early San Joaquin County history shows scattered ranches in the area on large tracts of land (Thompson and West 1879). The town became a supply center for the region.

The station was re-named Manteca in 1904 or 1905 by the Southern Pacific for a local creamery that had taken its name from the Spanish word for “butter” or “lard” (Gudde 1969: 191). Another version of the naming of the town is that the Southern Pacific misprinted the name of the “Monteca” as “Manteca”, and would not change the spelling (Hillman and Covello 1985).

After irrigation systems were developed, the large tracts of land formerly cultivated by dry land crops such as grain could be converted to use for orchards, alfalfa, diversified crops and largescale dairying. Within a short time after the completion of the first irrigation system in the region by the Stanislaus and San Joaquin Water Company, the population of the town grew from 80 to about 500. Further growth occurred with the creation of the South San Joaquin Irrigation District in 1909 and the completion of Goodwin Dam on the Stanislaus River and associated canals in 1913 (Hillman and Covello 1985).

Industries in the area were agricultural in nature for many years, with stockyards, dairy farms, pumpkins and sugar beets being important economically. The Spreckels Sugar Company opened a mill in 1918 that remained an important industry in the region.

The population of Manteca began to grow at a rapid rate in the early 1950s, with the town serving as a bedroom community for industrial plants in San Joaquin County communities. Beginning in the 1970s, improvements to community infrastructure and the attractive pricing of homes brought even more growth (Hillman and Covello 1985). The pattern of rapid growth continues to this day, with industrial development in the area, as well as many residents commuting regularly to the Bay Area.

PROJECT SETTING

Project Site

The Project site is located in the southwestern portion of the City of Manteca directly adjacent to the city limits. The Project site is immediately southwest of the intersection of Airport Way and Woodward Avenue. The Project site is bounded on the north by the City of Manteca city limits, on the east by Airport Way, on the south by an existing Reclamation District #2094 (RD2094) dry levee and existing agricultural fields, and on the west by the existing single-family subdivisions. The Project site encompasses 183.46 acres, including a 161.19-acre Development Area, a 19.11-acre Non-development Area, and 3.16 acres of existing right-of-way owned by San Joaquin County.

The Development Area is bordered on the north by Woodward Avenue, on the east by Airport Way, on the south by an existing Reclamation District #2094 (RD2094) dry levee and existing agricultural fields, and on the west by the Terra Ranch Subdivision. The majority of the Development Area is in active agricultural use with the exception of the northeast corner of the site, which contains two existing houses and barns and/or sheds with associated equipment. Additionally, two dirt/gravel roadways bisect the Development Area, including one roadway running north to south down the center of the Development Area from Woodward Avenue to the southern boundary and another running west from Airport Avenue connecting to the other dirt/gravel roadway in the center of the Development Area.

The Non-development Area is located south and east of the City of Manteca city limits, west of Airport Way, and north of Woodward Avenue. The Non-development Area contains 15 parcels each developed with a single-family residence. Six of the existing residential homes (Non-development Area 1) are located just north of the Development Area and Woodward Avenue in the northwest corner of the Project site, while the remaining nine residential homes (Non-development Area 2) are just north of Woodward Avenue and west of Airport Way in the northeast corner of the Project site.

The Project site is located within Section 12 of Township 2 South, Range 6 East Mount Diablo Base and Meridian (MDBM), and located on the USGS Lathrop, California, 7.5-minute series quadrangle map. The Project site is relatively flat with natural gentle slope from south to north with an elevation ranging from approximately 19 to 24 feet above sea level.

Surrounding Uses

The Project site is surrounded by a variety of agricultural and residential land uses. Uses immediately south of the Project site include agricultural and residential uses, including ranchettes and large estates lots. Residential subdivisions are located to the north and east of the Project site, including the Terra Ranch Subdivision which borders the Development Area on the west. Existing uses to the east of the Project site include a residential subdivision north of Woodward Avenue and agricultural and rural residential uses south of Woodward Avenue.

KNOWN CULTURAL RESOURCES

A summary of the record search, field survey, and Native American consultation that was performed for the Project site is included below.

Records Search

On November 17, 2020 records of previously recorded cultural resources and cultural resource investigations were examined by the Central California Information Center (CCIC) of the California Historical Resources Information System (CHRIS) for the Project site and a one-eighth mile radius (CCIC File # 11560L, Appendix 2). The Project site has been previously surveyed in 2007 by Jones & Stokes Associates (Report #SJ - 7769). This team of archeologists found no historic or prehistoric cultural resources in their survey. A letter report, reflecting a literature review, was prepared by Miley Holman in 2013 (Report #SJ7770).

The CCIC Records search identified two resources on-site including a Tesla-Salado Manteca 115 kV transmission line (#P-39-005337) and the Walthall Slough Dry Land Levee (#P39-005086). At the eastern edge of the Project site, the major 50-mile-long Tesla-Salado-Manteca 115 kV transmission line has been recorded as #P-39- 005337. The CCIC records search noted that the site was not eligible for the National Register of Historic Places (Cardno 2017). The second resource located within the Project site is a small section of the Walthall Slough Dry Land levee, which extends into the southwestern corner of the property. In 2012, archeologists recorded the Walthall Slough Dry Levee as a part of the RD 17 system in an abbreviated form. Therefore, a Historical Resources Inventory Form (DPR 523 Form) has been prepared for the Walthall Slough Dry Levee to record and further evaluate the resource.

Additionally, the CCIC Records search identified one resource to the south of the Project site within a one-eighth mile known as the Rustic School (#P-39-005046). The Rustic School was a small rural one-room schoolhouse built in about 1870. Population remained sparse in the area, and replacement of the school with a two-room schoolhouse did not occur until 1921. The school served the region until 1963, when students transferred to the Nile Garden School. In 1991, the 1921 school had been converted to a private residence.

Field Survey

As part of the Cultural Resources Assessment, the property was surveyed three times in November 2020. The Project site appeared flat and leveled for agricultural purposes and hay cultivation, with an irrigation ditch and a modern well with a pump within the property. The soil was observed to be uniformly light tan in color and sandy loam in texture, with occasional water rounded pebbles. Inspection of the ditch cut showed no variation in the soils relative to the soils at the surface.

While no evidence of prehistoric period use or occupancy of the property was identified, two residences in the northwest corner of the Development Area were identified to be greater than 50 years in age, requiring evaluation of their potential to be historical resources.

Recorded Resources

Three Historical Resources Inventory Forms (DPR 523 Forms) were prepared to evaluate and record the residence at 20329 South Airport Way and residence at 20333 South Airport Way, as well as the historic period Walthall Slough Dry Land Levee resource. The following provides a description of the recorded resources, including the results of the historical resource evaluation.

20329 SOUTH AIRPORT WAY

The 20329 South Airport Way resource consists of a single-family residence and an outbuilding, which were 50 years or older in age. The residence is rectangular shaped, single story with a moderately pitched, side gable roof covered with asphalt shingles. The siding is primarily stucco. The outbuilding is rectangular shaped, single story with a moderately steeply pitched gable roof with exposed rafter tails. Like the adjoining residence, the roof is covered with asphalt shingles and the siding is stucco. The resource is not mapped on the 1915 Lathrop USGS topographic map but is shown on the 1952 USGS Lathrop 7.5 minutes series topographic map quadrangle that was based on aerial photographs taken in 1949. Stylistically, the residence is a Side-Gable Roof variant of the Minimal Traditional Style that was popular between the period of 1935 to 1950 (McAlester 2017:586-595).

Under the California Register of Historical Resources (CRHR) criterion A, the site must “be associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.” The residence and outbuilding do not appear to be associated with any specific, significant contribution.

For a property to be eligible under Criterion B of the CRHR, the features must be associated with persons important in the past. There is no evidence to suggest that this property was ever associated with a significant person in our past.

For CRHR Criterion C, the resource must embody “the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.” The Side-Gable Roof subtype of Minimal Traditional Style home represents the one of the most economical to build residential unit layouts available and was widely advertised as such during the 1930s and 1940s (McAlester 2017:587). The residence and outbuilding at 20329 South Airport Way are a typical, but not at all elaborate, example of this widely built subtype.

For Criterion D, there were no associated archeological deposits observed during the field inspection and recordation and it is unlikely given the degree of ground disturbance surrounding the buildings that a buried, undiscovered deposit would be present.

Therefore, based on the above evaluation, it was concluded that this resource does not meet the thresholds under Criteria A-D of the CRHR and is not a historical resource.

3.5 CULTURAL AND TRIBAL RESOURCES

20333 SOUTH AIRPORT WAY

The 20333 South Airport Way resource is a single-family residence, which is rectangular shaped and single-story with a moderately pitched, side gable roof. The roof is covered with asphalt shingles and the siding is stucco. There is an open porch/entryway located on the southeastern corner. An addition with a shed roof is located along the north facing façade. The roof eaves are close with exposed rafter tails. The residence is not mapped on the 1915 Lathrop USGS topographic map but is shown on the 1952 USGS Lathrop 7.5 minutes series topographic map quadrangle that was based on aerial photographs taken in 1949. Stylistically, the residence is a Side-Gable Roof variant of the Minimal Traditional Style that was popular between the period of 1935 to 1950 (McAlester 2017:586-595).

According to the Cultural Resources Assessment, the residence does not appear to be associated with any specific, significant contribution (CRHR Criterion A). Additionally, there is no evidence to suggest that this property was ever associated with a significant person in the past (CRHR Criterion B). While the Side-Gable Roof subtype of Minimal Traditional Style home represents a widely advertised residential unit type from the 1930s and 1940s (McAlester 2017:587), the residence is typical, fairly plain, example of this built subtype and the modern addition added to the north detracts from the overall integrity. Thus, the resource does not embody the distinctive characteristics of a type, period, region, or method of construction, or represent the works of an important creative individual, or possess high artistic values (CRHR Criterion C). Additionally, there were no associated archeological deposits observed during the field inspection and recordation is unlikely given the degree of ground disturbance surrounding the buildings that a buried, undiscovered deposit would be present (CRHR Criterion D). Thus, the complex does not meet the threshold under Criteria A-D of the CRHR and is not a historical resource.

WALTHALL SLOUGH DRY LAND LEVEE

As with most older levees and other types of infrastructure, the owners did not place information in newspapers or retain other sources of information about dates of construction, project designers or construction firms, or maintenance and improvements. The Walthall Slough Dry Land Levee is shown as a levee feature on the 1915 Lathrop USGS in approximately the present location. No information about the feature's age, history, or any other details have been provided. According to the team that recorded the levee as part of RD 17 in 2012, the levee is 2.25 miles in length, and the overall integrity was very good, although it is very similar to many levees in the Central Valley. As of January 1997, the levee was shored up by the Department of Water Resources because it was leaking but has not yet been breached (San Francisco Examiner 27 January 1997).

According to Cultural Resources Assessment, the levee may be a significant resource as a part of the San Joaquin River Levee system. The levee is currently recorded as a part of RD 17, or may actually be later and tied to the later RD 2094. Archival studies would need to be undertaken to provide the historical context for the levee, and an evaluation made based on further studies.

NATIVE AMERICAN CONSULTATION

As discussed in Chapter 2.0, Project Description, the Project may require a minor amendment to the General Plan, triggering the need for tribal consultation pursuant to Senate Bill (SB) 18. It is noted that no tribes have requested notification of projects pursuant to Assembly Bill (AB) 52. Peak & Associates requested a search of the Sacred Lands files for the Project Area through the Native American Heritage Commission, and the response from December 4, 2020 failed to reveal any properties listed as Sacred Lands on the Project site.

On February 5th 2021, Pursuant to SB 18, consultation letters were sent via certified mail by the City of Manteca, requesting information related to cultural resources or heritage sites within the Project area. The letters were sent to the four tribal representatives listed in the NAHC response, including: Katherine Perez, Chairperson of the North Valley Yokuts Tribe; Timothy Perez, contact of the North Valley Yokuts Tribe; Neil Peyron, Chairperson of the Tule River Indian Tribe; and Corrina Gould, Chairperson of the Confederated Villages of Lisjan. All consultation correspondence and a contact log are provided in Appendix C.

3.5.2 REGULATORY SETTING

FEDERAL

National Historic Preservation Act

The National Historic Preservation Act was enacted in 1966 as a means to protect cultural resources that are eligible to be listed on the National Register of Historic Places (NRHP). The law sets forth criterion that is used to evaluate the eligibility of cultural resources. The NRHP is composed of districts, sites, buildings, structures, objects, architecture, archaeology, engineering, and culture that are significant to American History.

Virtually any physical evidence of past human activity can be considered a cultural resource. Although not all such resources are considered to be significant and eligible for listing, they often provide the only means of reconstructing the human history of a given site or region, particularly where there is no written history of that area or that period. Consequently, their significance is judged largely in terms of their historical or archaeological interpretive values. Along with research values, cultural resources can be significant, in part, for their aesthetic, educational, cultural and religious values.

National Register of Historic Places

The eligibility criteria for the NRHP are as follows (36 CFR 60.4):

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess aspects of integrity of location, design, setting, materials, workmanship, feeling, association, and

3.5 CULTURAL AND TRIBAL RESOURCES

- (A) that are associated with events that have made a significant contribution to the broad patterns of our history and cultural heritage; or*
- (B) that are associated with the lives of persons significant in our past; or*
- (C) that embody the distinctive characteristics of a type, period, region, or method of construction, or that represent the work of a master, or that possess high artistic values or that represent a significant and distinguishable entity whose components may lack individual distinction; or*
- (D) that have yielded, or may be likely to yield, information important in prehistory or history.*

American Indian Religious Freedom Act and Native American Graves and Repatriation Act

The American Indian Religious Freedom Act recognizes that Native American religious practices, sacred sites, and sacred objects have not been properly protected under other statutes. It establishes as national policy that traditional practices and beliefs, sites (including right of access), and the use of sacred objects shall be protected and preserved. Additionally, Native American remains are protected by the Native American Graves and Repatriation Act of 1990.

Other Federal Legislation

Historic preservation legislation was initiated by the Antiquities Act of 1966, which aimed to protect important historic and archaeological sites. It established a system of permits for conducting archaeological studies on federal land, as well as setting penalties for noncompliance. This permit process controls the disturbance of archaeological sites on federal land. New permits are currently issued under the Archaeological Resources Protection Act (ARPA) of 1979. The purpose of ARPA is to enhance preservation and protection of archaeological resources on public and Native American lands. The Historic Sites Act of 1935 declared that it is national policy to "Preserve for public use historic sites, buildings, and objects of national significance."

STATE

California Register of Historic Resources

The California Register of Historical Resources (CRHR) was established in 1992 and codified in the Public Resource Code §5020, 5024 and 21085. The law creates several categories of properties that may be eligible for the CRHR. Certain properties are included in the program automatically, including: properties listed in the NRHP; properties eligible for listing in the NRHP; and certain classes of State Historical Landmarks. Determining the CRHR eligibility of historic and prehistoric properties is guided by CCR §§15064.5(b) and Public Resources Code (PRC) §§21083.2 and 21084.1.

Cultural resources, under CRHR guidelines, are defined as buildings, sites, structures, or objects that may have historical, architectural, archaeological, cultural, or scientific importance. A cultural resource may be eligible for listing on the CRHR if it:

- is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- is associated with the lives of persons important in our past;
- embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual or possesses high artistic values; or
- has yielded, or may be likely to yield, information important in prehistory or history.

California Environmental Quality Act

CEQA Guidelines §15064.5 provides guidance for determining the significance of impacts to archaeological and historical resources. Demolition or material alteration of a historical resource, including archaeological sites, is generally considered a significant impact. Determining the CRHR eligibility of historic and prehistoric properties is guided by CCR §§15064.5(b) and Public Resources Code (PRC) §§21083.2 and 21084.1.

CEQA also provides for the protection of Native American human remains (CCR §15064.5[d]). Native American human remains are also protected under the Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001 et seq.), which requires federal agencies and certain recipients of federal funds to document Native American human remains and cultural items within their collections, notify Native American groups of their holdings, and provide an opportunity for repatriation of these materials. This act also requires plans for dealing with potential future collections of Native American human remains and associated funerary objects, sacred objects, and objects of cultural patrimony that might be uncovered as a result of development projects overseen or funded by the federal government.

If a prehistoric or historic period cultural resource does not meet any of the four CRHR criteria, but does meet the definition of a “unique” site as outlined in PRC §21083.2, it may still be treated as a significant resource if it is: an archaeological artifact, object or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- it contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information,
- it has a special and particular quality such as being the oldest of its type or the best available example of its type, or
- it is directly associated with a scientifically recognized important prehistoric or historic event.

California Health and Safety Code

§§7050.5 of the California Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the county coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission. The CEQA Guidelines (§§15064.5) specify the procedures to be followed in case of the discovery of

human remains on non-federal land. The disposition of Native American burials falls within the jurisdiction of the NAHC.

Senate Bill 18 (Burton, Chapter 905, Statutes 2004)

SB 18, authored by Senator John Burton and signed into law by Governor Arnold Schwarzenegger in September 2004, requires local (city and county) governments to consult with California Native American tribes to aid in the protection of traditional tribal cultural places (“cultural places”) through local land use planning. This legislation, which amended §§65040.2, §§65092, §§65351, §§65352, and §§65560, and added §§65352.3, §§653524, and §§65562.5 to the Government Code; also requires the Governor’s Office of Planning and Research to include in the General Plan Guidelines advice to local governments for how to conduct these consultations. The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places. These consultation and notice requirements apply to adoption and amendment of both general plans (defined in Government Code §§65300 et seq.) and specific plans (defined in Government Code §§65450 et seq.).

Assembly Bill 978

In 2001, Assembly Bill (AB) 978 expanded the reach of Native American Graves Protection and Repatriation Act of 1990 and established a state commission with statutory powers to assure that federal and state laws regarding the repatriation of Native American human remains and items of patrimony are fully complied with. In addition, AB 978 also included non-federally recognized tribes for repatriation.

Assembly Bill 52

AB 52, approved in September 2014, creates a formal role for California Native American tribes by creating a formal consultation process and establishing that a substantial adverse change to a tribal cultural resource has a significant effect on the environment. Tribal cultural resources are defined as:

- 1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
 - A) Included or determined to be eligible for inclusion in the CRHR;
 - B) Included in a local register of historical resources as defined in PRC §§5020.1(k).
- 2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC §§5024.1 (c). In applying the criteria set forth in PRC §§5024.1 (c) the lead agency shall consider the significance of the resource to a California Native American tribe.

A cultural landscape that meets the criteria above is also a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape. In addition, a historical resource described in PRC §§21084.1, a unique archaeological resource as

defined in PRC §§21083.2(g), or a “non-unique archaeological resource” as defined in PRC §§21083.2(h) may also be a tribal cultural resource if it conforms with above criteria.

AB 52 requires a lead agency, prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project, to begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if: (1) the California Native American tribe requested to the lead agency, in writing, to be informed by the lead agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe, and (2) the California Native American tribe responds, in writing, within 30 days of receipt of the formal notification, and requests the consultation.

LOCAL

City of Manteca General Plan

The General Plan includes several policies relevant to cultural and tribal resources. 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 existing 2023 General Plan policies and proposed General Plan Update policies applicable to the Project are identified below:

2023 GENERAL PLAN

Policies: Resource Conservation Element

- RC-P-37. The City shall not knowingly approve any public or private project that may adversely affect an archaeological site without consulting the California Archaeological Inventory at Stanislaus State University, conducting a site evaluation as may be indicated, and attempting to mitigate any adverse impacts according to the recommendation of a qualified archaeologist. City implementation of this policy shall be guided by the California Environmental Quality Act (CEQA) and the National Historic Preservation Act (NHPA).
- RC-P-38. The City shall require that the proponent of any development proposal in an area with potential archaeological resources, and specifically near the San Joaquin River and Walthall Slough, and on the east side of State Highway 99 at the Louise Avenue crossing, shall consult with the California Archaeological Inventory, Stanislaus State University to determine the potential for discovery of cultural resources, conduct a site evaluation as may be indicated, and mitigate any adverse impacts according to the recommendation of a qualified archaeologist. The survey and mitigation shall be developer funded.
- RC-P-39. The City shall set as a priority the protection and enhancement of Manteca's historically and architecturally significant buildings.

GENERAL PLAN UPDATE (PROPOSED)

Policies: Resource Conservation Element

- RC-11.1. Protect important historic resources and use these resources to promote a sense of place and history in Manteca.
- RC-11.2. Encourage historic resources to remain in their original use whenever possible.

3.5 CULTURAL AND TRIBAL RESOURCES

The adaptive use of historic resources is preferred, particularly as museums, educational facilities, or visitor-serving uses, when the original use can no longer be sustained. Older residences may be converted to office/retail use in commercial areas and to tourist or business use, so long as their historical authenticity is maintained or enhanced.

- RC-11.3. Do not approve any public or private project that may adversely affect an archaeological site without consulting the California Archaeological Inventory at Stanislaus State University, conducting a site evaluation as may be indicated, and attempting to mitigate any adverse impacts according to the recommendation of a qualified archaeologist. City implementation of this policy shall be guided by CEQA and the National Historic Preservation Act.
- RC-11.4. Require that the proponent of any development proposal in an area with potential archaeological resources, and specifically near the San Joaquin River and Walthall Slough, and on the east side of State Highway 99 at the Louise Avenue crossing, shall consult with the California Archaeological Inventory, Stanislaus State University to determine the potential for discovery of cultural resources, conduct a site evaluation as may be indicated, and mitigate any adverse impacts according to the recommendation of a qualified archaeologist. The survey and mitigation shall be developer funded.
- RC-11.9. Review new development projects and work in conjunction with the California Historical Resources Information System to determine whether project areas contain known archaeological resources, either prehistoric and/or historic-era, or have the potential for such resources.
- RC-11.10. Ensure that human remains are treated with sensitivity and dignity, and ensure compliance with the provisions of California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097.98.
- RC-11.11. Consistent with State, local, and tribal intergovernmental consultation requirements such as SB 18, consult as necessary with Native American tribes that may be interested in proposed new development and land use policy changes.

Implementation: Resource Conservation Element

- RC-11a. Require a records search for any proposed development project, to determine whether the site contains known archaeological, historic, or cultural resources and/or to determine the potential for discovery of additional cultural resources. This requirement may be waived if determined by the City that the proposed project area is already sufficiently surveyed.
- RC-11b. Require a cultural and archaeological survey prior to approval of any project which would require excavation in an area that is sensitive for cultural or archaeological resources. If significant cultural or archaeological resources, including historic and prehistoric resources, are identified, appropriate measures shall be implemented, such as documentation and conservation, to reduce adverse impacts to the resource.
- RC-11c. Require all City permits for reconstruction or modification of existing buildings to include the submittal of a photograph of the existing structure or site. The intent is to create a record of the buildings in the City over time. A photograph will also be required

for vacant sites that will be modified with new construction of new buildings or other above ground improvements.

- RC-11d. Incorporate significant archaeological sites, where feasible, into open space areas.
- RC-11e. Continue to inventory historic sites throughout the City. The inventory should contain a narrative of the significant facts regarding the historic events or persons associated with the site, and pictures of the site.
- RC-11f. Continue to support the local historical society in their efforts to:
 - Archive historic information, including photographs, publications, oral histories and other materials, and
 - make the information available to the public for viewing and research.
- RC-11g. Encourage the placement of monuments or plaques that recognize and celebrate historic sites, structures, and events.
- RC-11j. Require all new development, infrastructure, and other ground-disturbing projects to comply with the following conditions in the event of an inadvertent discovery of cultural resources or human remains:
 - If construction or grading activities result in the discovery of significant historic or prehistoric archaeological artifacts or unique paleontological resources, all work within 100 feet of the discovery shall cease, the Community Development Director shall be notified, the resources shall be examined by a qualified archaeologist, paleontologist, or historian for appropriate protection and preservation measures; and work may only resume when appropriate protections are in place and have been approved by the Community Development Director; and
 - If human remains are discovered during any ground disturbing activity, work shall stop until the Community Development Director and the San Joaquin County Coroner have been contacted; if the human remains are determined to be of Native American origin, the Native American Heritage Commission and the most likely descendants have been consulted; and work may only resume when appropriate measures have been taken and approved by the Community Development Director.

3.5.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project is considered to have a significant impact on cultural or tribal cultural resources if it will:

- Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;

3.5 CULTURAL AND TRIBAL RESOURCES

- Disturb any human remains, including those interred outside of formal cemeteries;
- 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:
 - 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);
 - 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.

IMPACTS AND MITIGATION MEASURES

Impact 3.5-1 Project implementation has the potential to cause a substantial adverse change to a significant historical or archaeological resource, as defined in CEQA Guidelines §15064.5 (Less than Significant with Mitigation)

The Project site encompasses 183.46 acres, including a 161.19-acre Development Area, a 19.11-acre Non-development Area, and 3.16 acres of existing right-of-way owned by San Joaquin County. The proposed Project involves the annexation of the 183.46-acre site into the City of Manteca to allow for the development of residential and park uses on the Development Area and improvement of the existing right-of-way area (Woodward Avenue and Airport Way) to City of Manteca standards. No development or improvements are proposed within the Non-development Area, which is developed with existing single-family residential homes.

The Development Area is primarily active farmland with two existing houses and barns and/or sheds with associated equipment in the northeast corner. As previously stated, the CHRIS search for the Project site indicated two historic period resources were previously recorded in the Development Area, including the Tesla-Salado Manteca 115 kV transmission line (#P-39-005337) and the Walthall Slough Dry Land Levee (#P39-005086). Additionally, the field survey identified two on-site residences (20329 South Airport Way and 20333 South Airport Way) that were more than 50 years in age and potentially historic resources.

The Tesla-Salado Manteca 115 kV transmission line was determined not to be eligible for the National Register of Historic Places (Cardno 2017). Additionally, Peak & Associates determined that the two on-site residences (20329 and 20333 South Airport Way) do not meet the thresholds under Criteria A-D of the CRHR and are not historical resources. However, it was determined that the Walthall Slough Dry Land Levee may be a significant resource as a part of the San Joaquin River Levee system. As previously noted, the Walthall Slough Dry Land Levee extends into the southwest

corner of the Project site and along the southern boundary. Altogether, Project site contains approximately 1,500 feet of the Walthall Slough Dry Land Levee along the southern border in the southwestern portion of the project area. As shown on Figure 2.0-10 of Chapter 2.0, Project Description, the southwest corner of the Project site is designated for open space and while the Walthall Slough Dry Land Levee extends along the southern boundary, it is placed outside proposed residential development. Therefore, the proposed development would avoid the Walthall Slough Dry Land Levee. The Project site is located in an area known to have historical and archaeological resources. Therefore, as with most projects in the region that involve ground-disturbing activities, there is the potential for discovery of a previously unknown historical and archaeological resources. Implementation of the following Mitigation Measures would ensure that this potential impact is **less than significant**.

MITIGATION MEASURE(S)

Mitigation Measure 3.5-1: *Prior to the initiation of construction activities, a training session for all workers shall be conducted at the site by a qualified archeologist. The training session will provide information on recognition of artifacts, human remains, and cultural deposits to help in the recognition of potential issues.*

Mitigation Measure 3.5-2: *In concurrence with initial grading, a qualified archeologist shall be present to observe the initial land disturbance, and be able to halt work in the immediate vicinity should artifacts, exotic rock, shell or bone are uncovered during the construction. The monitor will document the finding, and determine if additional work is necessary to excavate or remove the artifacts or feature.*

Mitigation Measure 3.5-3: *If any historical resources, cultural resources, including prehistoric or historic artifacts, or other indications of archaeological or paleontological resources, are found during grading and construction activities during any phase of the Project, all work shall be halted immediately within a 200-foot radius of the discovery until an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, has evaluated the find(s).*

Work shall not continue at the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially significant or eligible for listing on the NRHP or CRHR; or 3) not a significant Public Trust Resource.

If Native American resources are identified, a Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required and, if required, shall be retained at the Project applicant's expense.

Impact 3.5-3: Project implementation has the potential to disturb human remains, including those interred outside of formal cemeteries. (Less than Significant with Mitigation)

Indications suggest that humans have occupied San Joaquin County for over 10,000 years and it is not always possible to predict where human remains may occur outside of formal burials. Therefore, excavation and construction activities, regardless of depth, may yield human remains that may not be interred in marked, formal burials.

Under CEQA, human remains are protected under the definition of archaeological materials as being “any evidence of human activity.” Additionally, Public Resources Code Section 5097 has specific stop-work and notification procedures to follow in the event that human remains are inadvertently discovered during Project implementation.

While no human remains were found during field surveys of the Project site, implementation of the following mitigation measure would ensure that all construction activities which inadvertently discover human remains implement state-required consultation methods to determine the disposition and historical significance of any discovered human remains. The following mitigation measure would reduce this impact to a **less-than-significant** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.5-4: *If human remains are discovered during the course of construction during any phase of the Project, work shall be halted at the site and at any nearby area reasonably suspected to overlie adjacent human remains until the San Joaquin County Coroner has been informed and has determined that no investigation of the cause of death is required. If the remains are of Native American origin, either of the following steps will be taken:*

- *The coroner shall contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner shall make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.*
- *The landowner shall retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance when any of the following conditions occurs:*
 - *The Native American Heritage Commission is unable to identify a descendent.*
 - *The descendant identified fails to make a recommendation.*
 - *The City of Manteca or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.*

Impact 3.5-4: Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074, and that is: Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or a resource determined by the lead agency (Less than Significant)

The Project site is located in an area known to have historical, archaeological, and tribal cultural resources. A Sacred Lands File (SLF) search was requested from the NAHC and found no known sacred lands within the Development Area as of December 4, 2020. As described under the Consultation heading above, the City of Manteca sent outreach letters to the four tribal representatives listed in the NAHC response, including: Katherine Perez, Chairperson of the North Valley Yokuts Tribe; Timothy Perez, contact of the North Valley Yokuts Tribe; Neil Peyron, Chairperson of the Tule River Indian Tribe; and Corrina Gould, Chairperson of the Confederated Villages of Lisjan pursuant to SB 18. To date, no responses have been received.

While no specific resources have been identified through consultation with affiliated tribes, it is possible that unknown tribal cultural resources may be present within the Development Area. The Proposed Project would be required to follow development requirements, including compliance with local policies, ordinances, and applicable permitting procedures related to protection of tribal resources.

As discussed under Impacts 3.5-1 and 3.5-2, development of the proposed project could impact unknown archaeological resources including Native American artifacts and human remains. Implementation of Mitigation Measures 3.5-1 and 3.5-2 would ensure that the potential impact to archaeological, cultural, and tribal resources, including human remains, would be **less than significant**.

This Page Intentionally Left Blank.

The purpose of this section is to disclose and analyze the potential impacts associated with the geology of the Project site and regional vicinity, and to analyze issues such as the potential exposure of people and property to geologic hazards, landform alteration, and erosion. This section is based in part on the following:

- *City of Manteca General Plan 2023* (City of Manteca, as amended through 2013);
- *Manteca General Plan 2023 Draft Environmental Impact Report* (City of Manteca, 2003);
- *Custom Soils Report for San Joaquin County, California* (NRCS, 2012);
- *Natural Resources Conservation Service (NRCS) Web Soil Survey* (NRCS, 2019), and
- *Interactive Fault Map provided by the U.S. Geological Survey* (USGS, 2019).

It is noted that there are no significant deposits of mineral resources located on the Project site, as delineated by the Mineral Resources and Mineral Hazards Mapping Program (MRMHMP). Additionally, the Project site is not designated as a Mineral Resource Zone (MRZ). As such, this CEQA topic will not be discussed further.

There were no comments received during the NOP scoping process related to this environmental topic.

3.6.1 ENVIRONMENTAL SETTING

GEOLOGIC SETTING

Geomorphic Province

The City of Manteca, including the Project site, is located in the central portion of the Great Valley Geomorphic Province of California. The Great Valley Province is a broad structural trough bounded by the tilted block of the Sierra Nevada on the east and the complexly folded and faulted Coast Ranges on the west. The San Joaquin River is located just south and west of the City. This major river drains the Great Valley Province into the San Joaquin Delta to the north, ultimately discharging into the San Francisco Bay to the northwest.

Regional Geology

The Project site lies in the San Joaquin Valley in central California. The San Joaquin Valley is located in the central portion of the Great Valley Geomorphic Province. The Great Valley, also known as the Central Valley, is a topographically flat, northwest-trending, structural trough (or basin) about 50 miles wide and 450 miles long. It is bordered by the Tehachapi Mountains on the south, the Klamath Mountains on the north, the Sierra Nevada on the east, and the Coast Ranges on the west.

The San Joaquin Valley is filled with thick sedimentary rock sequences that were deposited as much as 130 million years ago. Large alluvial fans have developed on each side of the Valley. The larger and more gently sloping fans are on the east side of the San Joaquin Valley and overlie metamorphic and igneous basement rocks. These basement rocks are exposed in the Sierra Nevada foothills and consist of meta-sedimentary, volcanic, and granitic rocks.

Local Setting

The Project site is located in the southwestern portion of the City of Manteca directly adjacent to the city limits. The Project site is immediately southwest of the intersection of Airport Way and Woodward Avenue. The Project site is bounded on the north by the City of Manteca city limits, on the east by Airport Way, on the south by an existing Reclamation District #2094 (RD 2094) dry levee and existing agricultural fields, and on the west by the existing single-family subdivisions. The Project site encompasses 183.46 acres, including a 161.19-acre Development Area, a 19.11-acre Non-development Area, and 3.16 acres of existing right-of-way owned by San Joaquin County. Figures 2.0-1 and 2.0-2 in Chapter 2.0, Project Description, show the Project's regional location and vicinity.

The Development Area is bordered on the north by Woodward Avenue, on the east by Airport Way, on the south by an existing Reclamation District #2094 (RD2094) dry levee and existing agricultural fields, and on the west by the Terra Ranch Subdivision. The current uses on the Development Area are predominantly agricultural and undeveloped, except for two existing houses and barns and/or sheds with associated equipment in the northeastern portion of the site. Additionally, two dirt/gravel roadways bisect the Development Area, including one roadway running north to south down the center of the Development Area from Woodward Avenue to the southern boundary and another running east to west from Airport Avenue connecting to the dirt/gravel roadway in the center of the Development Area. A South San Joaquin Irrigation District (SSJID) pipeline exists within the Development Area. An RD 2094 dry levee makes up a portion of the southern property line. This dryland levee is not intended to hold floodwaters from the south (upstream), instead it is intended to contain flows on RD 2094 and RD 2096 in the event of a levee breach of levees along RD 2094, RD 2096, or RD 17.

The Non-development Area is located south and east of the City of Manteca city limits, west of Airport Way, and north of Woodward Avenue. The Non-development Area contains 15 parcels each developed with a single-family residence. Six of the existing residential homes (Non-development Area 1) are located just north of the Development Area and Woodward Avenue in the northwest corner of the Project site while the remaining nine residential homes (Non-development Area 2) are just north of Woodward Avenue and west of Airport Way in the northeast corner of the Project site.

The Project site is located within Section 12 of Township 2 South, Range 6 East Mount Diablo Base and Meridian (MDBM), and located on the USGS Lathrop, California, 7.5-minute series quadrangle map. The Project site is relatively flat with natural gentle slope from south to north with an elevation ranging from approximately 19 to 24 feet above sea level.

A Custom Soil Survey was completed for the Project site using the NRCS Web Soil Survey program. The NRCS Soils Map is provided in Figure 3.2-2 in Section 3.2 Agricultural Resources. Table 3.6-1 identifies the type and range of soils found in the Project site.

TABLE 3.6-1: PROJECT SITE SOILS

<i>UNIT SYMBOL</i>	<i>NAME</i>	<i>ACRES IN AOI</i>	<i>PERCENT OF AOI</i>	<i>CAPABILITY CLASSIFICATION*</i>
108	Arents, saline-sodic	19.4	10.6%	III-IV
109	Bisgani loamy coarse sand	85.9	47.0%	III-IV
142	Delhi loamy sand	17.1	9.3%	III-IV
160	Galt clay	48.7	26.6%	III-IV
196	Manteca fine sandy loam	0.2	0.1%	III-IV
255	Tinnin loamy coarse sand	0.5	0.3%	III-IV
266	Veritas fine sandy loam	11.2	6.1%	II-IV

* DEPICTS IRRIGATED VS NON IRRIGATED CAPABILITY RATING

SOURCE: NRCS CUSTOM SOIL SURVEY 2020.

Arents, saline-sodic. This series consists of very deep, well drained soils formed in materials weathered from a conglomerate of quartzite, sandstone, apophyllite, and other rocks held together in a red sandy matrix. Slopes range from 0 to 2 percent. This series is characterized as well draining, medium to very rapid runoff, and permeability is moderate to moderately rapid. This series is commonly used as cropland, urban land, or pasture.

Bisgani loamy coarse sand. This series consists of very deep, poorly drained soils that formed in mixed alluvium dominantly from granitic rock sources. Bisgani soils are on bars, flood plains, low alluvial fans, basins floors and valley basins. Slope is 0 to 2 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 62 degrees F. These soils occur near the San Joaquin River in the central part of the San Joaquin Valley of California and are not extensive. Most of these soils are cultivated and irrigated. They are principally used for field crops and vegetable production with small acreage of orchard and pasture. The remainder is annual range vegetation.

Delhi loamy sands. This series consists of very deep, somewhat excessively drained soils. They formed in wind modified material weathered from granitic rock sources. Delhi soils are on floodplains, alluvial fans and terraces. Slopes are 0 to 15 percent. They have negligible to slow runoff and rapid permeability. Common uses for this series include: growing grapes, peaches, truck crops, alfalfa and for home sites. Principal native plants are buckwheat and a few shrubs and trees. Typical vegetation is annual grasses and forbs.

Galt clay. This series consists of moderately deep, moderately well drained soils that formed in fine textured alluvium from mixed but dominantly granitic rock sources. Galt soils are on low terraces, basins and basin rims and have slopes of 0 to 5 percent. The mean annual precipitation is about 16 inches and the mean annual temperature is about 60 degrees. Used for range, dryland crops, irrigated pasture, rice and irrigated field crops. Moderately well drained; runoff is ponded to medium; slow permeability. Some areas are rarely or occasionally flooded for brief to long periods in December through April. Natural vegetation is soft chess, annual ryegrass, foxtail fescue, broadleaf filaree and clovers.

3.6 GEOLOGY AND SOILS

Manteca Fine Sandy Loam. This series consists of moderately deep to hardpan, moderately well drained soils that formed in alluvium derived from mixed rock sources. Manteca soils are on low terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 11 inches and the mean annual temperature is about 60 degrees. These soils are used for irrigated crops. Alfalfa, almonds, barley, corn, grapes, melons, pasture and tomatoes are the principal crops. Vegetation is soft chess, wild oats, rippgut brome, turkey mullein and other annual grasses, forbs and scattered valley oaks.

Tinnin loamy coarse sand. This series consists of well drained soils on low fan terraces and alluvial fans. These soils are very deep, and form in alluvium derived from granitic rock sources. Slopes range from 0 to 2 percent. This series is characterized as well draining, slow runoff, and rapid permeability. Common uses for this series are irrigated cropland growing primarily almonds, alfalfa, onions, tomatoes, small grains, grapes and pasture. Vegetation consists of red brome, filaree, soft chess, wildoats, rippgut brome and scattered valley oaks.

Veritas fine sandy loam. This series consists of deep to duripan, moderately well drained soils. They formed in alluvium derived from mixed rock sources. Veritas soils are on low fan terraces. They have slow runoff and moderately rapid permeability. Common uses for this series include irrigated cropland. Alfalfa, barley and corn are the principal crops. Vegetation is annual grasses, forbs and scattered valley oaks.

FAULTS AND SEISMICITY

Faults

A fault is a fracture in the crust of the earth along which rocks on one side have moved relative to those on the other side. A fault trace is the line on the earth's surface defining the fault. Displacement of the earth's crust along faults releases energy in the form of earthquakes and in some cases results in fault creep. Most faults are the result of repeated displacements over a long period of time.

The State of California designates faults as active, potentially active, and inactive depending on how recent the movement that can be substantiated for a fault. Table 3.6-2 presents the California fault activity rating system.

TABLE 3.6-2: FAULT ACTIVITY RATING

<i>FAULT ACTIVITY RATING</i>	<i>GEOLOGIC PERIOD OF LAST RUPTURE</i>	<i>TIME INTERVAL (YEARS)</i>
Active (A)	Holocene	Within last 11,000 years
Potentially Active (PA)	Quaternary	11,000-1.6 Million Years
Inactive (I)	Pre-Quaternary	Greater than 1.6 Million

SOURCE: CALIFORNIA GEOLOGICAL SURVEY

Figure 3.6-1 provides a map of known nearby faults in relation to the Project site. While no faults cross the Project site, relatively large earthquakes have historically occurred in the Bay Area and along the margins of the Central Valley. The U.S. Geological Survey identifies potential seismic sources within 32.2 kilometers (20 miles) of the Project site. Two of the closest known faults classified as active by the U.S. Geological Survey are an Vernalis Fault east of the City of Tracy,

located approximately seven miles to the west, and the San Joaquin fault, located approximately 15 miles to the southwest. The Midway fault is located approximately 20 miles to the west. Other faults that could potentially affect the proposed Project include the Corral Hollow-Carnegie fault, the Greenville fault, the Antioch fault, and the Los Positas fault.

Seismicity

The amount of energy available to a fault is determined by considering the slip-rate of the fault, its area (fault length multiplied by down-dip width), maximum magnitude, and the rigidity of the displaced rocks. These factors are combined to calculate the moment (energy) release on a fault. The total seismic energy release for a fault source is sometimes partitioned between two different recurrence models, the characteristic and truncated Gutenberg-Richter (G-R) magnitude-frequency distributions. These models incorporate our knowledge of the range of magnitudes and relative frequency of different magnitudes for a particular fault.

Earthquakes are generally expressed in terms of intensity and magnitude. Intensity is based on the observed effects of ground shaking on people, buildings, and natural features. By comparison, magnitude is based on the amplitude of the earthquake waves recorded on instruments, which have a common calibration. The Richter scale, a logarithmic scale ranging from 0.1 to 9.0, with 9.0 being the strongest, measures the magnitude of an earthquake relative to ground shaking. Table 3.6-3 provides a description and a comparison of intensity and magnitude.

TABLE 3.6-3: MODIFIED MERCALLI INTENSITY SCALE FOR EARTHQUAKES

<i>RICHTER MAGNITUDE</i>	<i>MODIFIED MERCALLI</i>	<i>EFFECTS OF INTENSITY</i>
0.1 – 0.9	I	Earthquake shaking not felt
1.0 – 2.9	II	Shaking felt by those at rest.
3.0 – 3.9	III	Felt by most people indoors, some can estimate duration of shaking.
4.0 – 4.5	IV	Felt by most people indoors. Hanging objects rattle, wooden walls and frames creak.
4.6 – 4.9	V	Felt by everyone indoors, many can estimate duration of shaking. Standing autos rock. Crockery clashes, dishes rattle and glasses clink. Doors open, close and swing.
5.0 – 5.5	VI	Felt by all who estimate duration of shaking. Sleepers awaken, liquids spill, objects are displaced, and weak materials crack.
5.6 – 6.4	VII	People frightened and walls unsteady. Pictures and books thrown, dishes and glass are broken. Weak chimneys break. Plaster, loose bricks and parapets fall.
6.5 – 6.9	VIII	Difficult to stand. Waves on ponds, cohesionless soils slump. Stucco and masonry walls fall. Chimneys, stacks, towers, and elevated tanks twist and fall.
7.0 – 7.4	IX	General fright as people are thrown down, hard to drive. Trees broken, damage to foundations and frames. Reservoirs damaged, underground pipes broken.
7.5 – 7.9	X	General panic. Ground cracks, masonry and frame buildings destroyed. Bridges destroyed, railroads bent slightly. Dams, dikes and embankments damaged.
8.0 – 8.4	XI	Large landslides, water thrown, general destruction of buildings. Pipelines destroyed, railroads bent.
8.5 +	XII	Total nearby damage, rock masses displaced. Lines of sight/level distorted. Objects thrown into air.

SOURCE: UNITED STATES GEOLOGICAL SURVEY

According to the California Geological Survey's Probabilistic Seismic Hazard Assessment Program, San Joaquin County is considered to be within an area that is predicted to have a 10 percent

probability that a seismic event would produce horizontal ground shaking of 10 to 20 percent within a 50-year period. This level of ground shaking correlates to a Modified Mercalli intensity of V to VII, light to strong. As a result of these factors, the California Geological Survey has defined the entire County as a seismic hazard zone. The Uniform Building Code places all of California in the zone of greatest earthquake severity because recent studies indicate high potential for severe ground shaking.

Alquist-Priolo Special Study Zone

An active earthquake fault, per California's Alquist-Priolo Act, is one that has ruptured within the Holocene Epoch ($\approx 11,000$ years). Based on this criterion, the California Geological Survey identifies Earthquake Fault Zones. These Earthquake Fault Zones are identified in Special Publication 42 (SP42), which is updated as new fault data become available. The SP42 lists all counties and cities within California that are affected by designated Earthquake Fault Zones. The Fault Zones are delineated on maps within SP42 (Earthquake Fault Zone Maps).

The California legislature passed the Alquist-Priolo Special Studies Zone Act in 1972 to address seismic hazards associated with faults and to establish criteria for developments for areas with identified seismic hazard zones. The California Geologic Survey (CGS) evaluates faults with available geologic and seismologic data and determines if a fault should be zoned as active, potentially active, or inactive. If CGS determines a fault to be active, then it is typically incorporated into a Special Studies Zone in accordance with the Alquist-Priolo Earthquake Hazard Act. Alquist-Priolo Special Study Zones are usually one-quarter mile or less in width and require site-specific evaluation of fault location and require a structure setback if the fault is found traversing a project site.

As shown in Figure 3.6-1, the Project site is not within an Alquist-Priolo Special Study Zone. The nearest Alquist-Priolo fault zone, the Greenville fault zone, is located approximately 25 miles southwest of the Project site.

SEISMIC HAZARDS

Seismic Ground Shaking

The potential for seismic ground shaking in California is expected. As a result of the foreseeable seismicity in California, the State requires special design considerations for all structural improvements in accordance with the seismic design provisions in the California Building Code. These seismic design provisions require enhanced structural integrity based on several risk parameters. Seismic ground shaking in the Project site is expected during the life of the proposed Project. All structures will be built in accordance with the California Building Code's seismic design standards.

Fault Rupture

A fault rupture occurs when the surface of the earth breaks as a result of an earthquake, although this does not happen with all earthquakes. Surface ruptures have been known to extend up to 50 miles with displacements of an inch to 20 feet. Fault rupture almost always follows preexisting faults,

which are zones of weakness. These ruptures generally occur in a weak area of an existing fault. Ruptures can be sudden (i.e. earthquake) or slow (i.e. fault creep). Sudden displacements are more damaging to structures because they are accompanied by shaking. The Alquist-Priolo Fault Zoning Act requires active earthquake fault zones to be mapped and it provides special development considerations within these zones. The Project site does not have surface expression of active faults and fault rupture is not anticipated. Figure 3.6-1 shows the regional faults in relation to Manteca.

Liquefaction

Liquefaction typically requires a significant sudden decrease of shearing resistance in cohesionless soils and a sudden increase in water pressure, which is typically associated with an earthquake of high magnitude. Under certain circumstances, the ground shaking can temporarily transform an otherwise solid material to a fluid state. Liquefaction is a serious hazard because buildings in areas that experience liquefaction may subside and suffer major structural damage. Liquefaction is most often triggered by seismic shaking, but it can also be caused by improper grading, landslides, or other factors. The potential for liquefaction is highest when groundwater levels are high, and loose, fine, sandy soils occur at depths of less than 50 feet.

The potential for liquefaction is greater in certain geologic and hydrologic environments that may be characterized by loosely consolidated, silty sediments together with shallow groundwater. In the vicinity of the Project area, the sediments most susceptible to liquefaction include Holocene (less than 10,000-year-old) delta, river channel, flood plain, and aeolian deposits, and poorly compacted fills. By contrast, dense soils, including well-compacted fills, are less susceptible to liquefaction.

To date, the Seismic Hazards Zonation Program of the CGS has not identified any seismically-induced liquefaction zones in the City of Manteca or in the Project site. However, soil data from the NRCS Web Soil Survey (NRCS 2015) suggests that the potential for liquefaction is moderate given that the soils are high in sand and the water table is moderately high.

Lateral Spreading

Lateral spreading typically results when ground shaking moves soil toward an area where the soil integrity is weak or unsupported, and it typically occurs on the surface of a slope, although it does not occur strictly on steep slopes. Oftentimes, lateral spreading is directly associated with areas of liquefaction. Since the potential for liquefaction is moderate, the potential for lateral spreading is present; however, because the City of Manteca is essentially flat, lateral spreading of soils has not been observed.

Landslides

The California Geological Survey classifies landslides with a two-part designation based on Varnes (1978) and Cruden and Varnes (1996). The designation captures both the type of material that failed and the type of movement that the failed material exhibited. Material types are broadly categorized as either rock or soil, or a combination of the two for complex movements. Landslide movements are categorized as falls, topples, spreads, slides, or flows.

Landslide potential is influenced by physical factors, such as slope, soil, vegetation, and precipitation. Landslides require a slope, and can occur naturally from seismic activity, excessive saturation, and wildfires, or from human-made conditions such as construction disturbance, vegetation removal, wildfires, etc.

The Project site is essentially flat; therefore, the potential for a landslide in the Project site is low to non-existent.

NON-SEISMIC HAZARDS

Expansive Soils

The NRCS delineates soil units and compiles soils data as part of the National Cooperative Soil Survey. The following description of linear extensibility (also known as shrink-swell potential or expansive potential) is provided by the NRCS Physical Properties Descriptions:

“Linear extensibility” refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Expansive soils can undergo significant volume change with changes in moisture content. They shrink and harden when dried and expand and soften when wet. If structures are underlain by expansive soils, it is important that foundation systems be capable of tolerating or resisting any potentially damaging soil movements. In addition, it is important to limit moisture changes in the surficial soils by using positive drainage away from buildings as well as limiting landscape watering. According to the NRCS Web Soil Survey, the soils in the Project site have a low to high shrink-swell potential, with the highest potential occurring on the western half of the development area. The NRCS Web Soil Survey indicated that near surface soils within the Project site have low plasticity, and the expansion potential of the soils would respond to fluctuations in moisture content. Figure 3.6-2 provides a map of the shrink-swell potential of the soils at the Project site and in the vicinity.

Erosion

Erosion naturally occurs on the surface of the earth as surface materials (i.e. rock, soil, debris, etc.) is loosened, dissolved, or worn away, and transported from one place to another by gravity. Two common types of soil erosion include wind erosion and water erosion. The steepness of a slope is an important factor that affects soil erosion. Erosion potential in soils is influenced primarily by loose soil texture and steep slopes. Loose soils can be eroded by water or wind forces, whereas soils with high clay content are generally susceptible only to water erosion. The potential for erosion generally

increases as a result of human activity, primarily through the development of facilities and impervious surfaces and the removal of vegetative cover.

The *Custom Soils Report* identified the erosion potential for the soils in the Project site. This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. Soil property data for each map unit component includes the hydrologic soil group, erosion factors Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the surface horizon.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water. Within the Project site, the erosion factor Kf varies from 0.05 to 0.28, which is considered a low to moderate potential for erosion. Furthermore, because the Project site is essentially flat, the erosion potential is slight.

Collapsible Soils

Collapsible soils undergo a rearrangement of their grains and a loss of cementation, resulting in substantial and rapid settlement under relatively low loads. Collapsible soils occur predominantly at the base of mountain ranges, where Holocene-age alluvial fan and wash sediments have been deposited during rapid run-off events. Soils prone to collapse are commonly associated with manmade fill, wind-laid sands and silts, and alluvial fan and mudflow sediments deposited during flash floods. During an earthquake, even slight settlement of fill materials can lead to a differentially settled structure and significant repair costs. Differential settlement of structures typically occurs when heavily irrigated landscape areas are near a building foundation. Examples of common problems associated with collapsible soils include tilting floors, cracking or separation in structures, sagging floors, and nonfunctional windows and doors. Collapsible soils have not been identified in the Manteca General Plan as an issue in the Manteca area. However, in areas subject to potential liquefaction, the potential for liquefaction induced settlement is present.

Subsidence

Land subsidence is the gradual settling or sinking of an area with little or no horizontal motion due to changes taking place underground. It is a natural process, although it can also occur (and is greatly accelerated) as a result of human activities. Common causes of land subsidence from human activity include: pumping water, oil, and gas from underground reservoirs; dissolution of limestone aquifers (sinkholes); collapse of underground mines; drainage of organic soils; and initial wetting of dry soils. Subsidence has not been identified in the Manteca General Plan as an issue in the Manteca area.

PALEONTOLOGICAL RESOURCES

Among the natural resources deserving conservation and preservation, and existing within the City, are the often-unseen records of past life buried in the sediments and rocks below the pavement, buildings, soils, and vegetation which now cover most of the area. These records – fossils and their geologic context – undoubtedly exist in large quantities below the surface in many areas in and near

the City of Manteca, and span millions of years in age of origin. Fossils constitute a non-renewable resource; once lost or destroyed, the exact information they contained can never be reproduced.

Paleontologists consider all vertebrate fossils to be of significance. Fossils of other types are considered significant if they represent a new record, new species, an oldest occurring species, the most complete specimen of its kind, a rare species worldwide, or a species helpful in the dating of formations. However, even a previously designated low potential site may yield significant fossils. Paleontological resources consist of the fossilized remains of plants and animals, including vertebrates (animals with backbones) and invertebrates (e.g., starfish, clams, ammonites, and coral). Fossils of microscopic plants and animals, or microfossils, are also considered in this analysis. The age and abundance of fossils depend on the location, topographic setting, and particular geologic formation in which they are found.

Regional Paleontological Setting

SAN JOAQUIN VALLEY

The following summary of the geological evolution of San Joaquin County and the potential for paleontological resources is based on the San Joaquin County General Plan Draft EIR. During the Mesozoic Era (208–65 million years ago), the Sierra Nevada formed, but the region that would become the San Joaquin Valley lay several thousand feet below the surface of the Pacific Ocean. During the Late Cretaceous Period (75–65 million years ago [mya]), flowering plants, early dinosaurs, and the first birds and mammals appeared. The basic form of the Great Central Valley took shape during the Cenozoic period, first as islands, then as mountains. During the late Cenozoic Era (65–2 mya), the Sierra Nevada eroded to mere hills compared to their earlier appearance, the Coast Ranges rose, and the San Joaquin Valley began to form.

During the Paleocene Epoch (65–53 mya), dinosaurs became extinct and mammals gradually evolved as the dominant group of animal life. During the Eocene Epoch (53–39 mya), the western edges of the San Joaquin Valley rose above sea level. Sedimentation and tectonic uplift of geological formations continued until two million years ago. In the subsequent Oligocene Epoch (39–23 mya), sedimentation continued, and during the Miocene Epoch (23–5 mya) the Diablo Range was uplifted. The Pliocene Epoch (5–2 mya) was a time of tremendous uplift, and great quantities of sediment eroded from the nearby mountain ranges accumulated in the valley, eventually forming a deposit thousands of feet thick. In the Pleistocene Epoch (2 million to 10,000 years ago), the Sierra Nevada range was increasingly elevated and glaciated, resulting in the formation of spectacular features such as Yosemite Valley. During the Holocene Epoch (10,000 years ago to the present), the San Joaquin Valley was above sea level and achieved its present appearance, 466 miles long and 19 to 50 miles wide, enclosed by the Siskiyou, Sierra Nevada, Tehachapi, and Coast Ranges on the north, east, south, and west, respectively. The valley contained fresh water lakes and rivers attractive to herds of prehistoric grazing animals, including Columbian Mammoth, camel, bison, and native horse. The fossil remains of these creatures have been found in San Joaquin County and adjacent areas. The vast majority of paleontological specimens from San Joaquin County have been found in rock formations in the foothills of the Diablo Mountain Range. However, remains of extinct animals such as mammoth, could be found virtually anywhere in the county, especially along watercourses such as the San Joaquin River and its tributaries.

CITY OF MANTECA

The Geologic Map of California, prepared by the California Department of Conservation California Geological Survey, identifies the generalized rock types in the City of Manteca as Quaternary Alluvium “Q” which is younger alluvium that consists of marine and nonmarine (continental) sedimentary rocks from the Pleistocene through Holocene Epochs that are composed of alluvium, lake, playa, and terrace deposits, both unconsolidated and semi-consolidated. This type is mostly nonmarine deposits but does include marine deposits near the coast.

According to a records search of the University of California Museum of Paleontology (UCMP) Collections Date, eighty fossils have been found and recorded within San Joaquin County. Over half of them are dated to the tertiary period, with quaternary being the second most frequent period. These are the first and second periods of the Cenozoic Era respectively, during which modern flora, apes, large mammals, and eventually humans developed. The majority of fossils found within the Manteca area have been vertebrate in nature. These fossils include mammoth/mastodon, horse, pocket gopher, and other unspecified rodents, and unidentified artiodactyl (hoofed mammal) bone.

According to the Cultural Resource Assessment prepared by Peak & Associates, the Development Area was surveyed three times in November 2020 and no paleontological resources were observed or encountered.

3.6.2 REGULATORY SETTING

FEDERAL

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act of 1977 (42 USC, 7701 et seq.) requires the establishment and maintenance of an earthquake hazards reduction program by the Federal government.

Executive Order 12699

Signed in January 1990, this executive order of the President implements provisions of the Earthquake Hazards Reduction Act for “federal, federally assisted or federally regulated new building construction” and requires the development and implementation of seismic safety programs by Federal agencies.

International Building Code (IBC)

The purpose of the International Building Code (IBC) is to provide minimum standards to preserve the public peace, health, and safety by regulating the design, construction, quality of materials, certain equipment, location, grading, use, occupancy, and maintenance of all buildings and structures. IBC standards address foundation design, shear wall strength, and other structurally related conditions.

STATE

California Building Standards Code

Title 24 of the California Code of Regulations, known as the California Building Standards Code (CBSC) or simply "Title 24," contains the regulations that govern the construction of buildings in California. The CBSC includes 12 parts: California Building Standards Administrative Code, California Building Code, California Residential Building Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Historical Building Code, California Fire Code, California Existing Building Code, California Green Building Standards Code (CAL Green Code), and the California Reference Standards Code. Through the CBSC, the State provides a minimum standard for building design and construction. The CBSC contains specific requirements for seismic safety, excavation, foundations, retaining walls, and site demolition. It also regulates grading activities, including drainage and erosion control.

California Health and Safety Code

Section 19100 et seq. of the California Health and Safety Code establishes the State's regulations for earthquake protection. This section of the code requires structural designs to be capable of resisting likely stresses produced by phenomena such as strong winds and earthquakes.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 sets forth the policies and criteria of the State Mining and Geology Board, which governs the exercise of governments' responsibilities to prohibit the location of developments and structures for human occupancy across the trace of active faults. The policies and criteria are limited to potential hazards resulting from surface faulting or fault creep within Earthquake Fault Zones, as delineated on maps officially issued by the State Geologist. Working definitions include:

- Fault – a fracture or zone of closely associated fractures along which rocks on one side have been displaced with respect to those on the other side;
- Fault Zone – a zone of related faults, which commonly are braided and sub parallel, but may be branching and divergent. A fault zone has a significant width (with respect to the scale at which the fault is being considered, portrayed, or investigated), ranging from a few feet to several miles;
- Sufficiently Active Fault – a fault that has evidence of Holocene surface displacement along one or more of its segments or branches (last 11,000 years); and
- Well-Defined Fault – a fault whose trace is clearly detectable by a trained geologist as a physical feature at or just below the ground surface. The geologist should be able to locate the fault in the field with sufficient precision and confidence to indicate that the required site-specific investigations would meet with some success.

"Sufficiently Active" and "Well Defined" are the two criteria used by the State to determine if a fault should be zoned under the Alquist-Priolo Act.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act, passed in 1990, addresses non-surface fault rupture earthquake hazards, including liquefaction and seismically-induced landslides. Under the Act, seismic hazard zones are to be mapped by the State Geologist to assist local governments in land use planning. The program and actions mandated by the Seismic Hazards Mapping Act closely resemble those of the Alquist-Priolo Earthquake Fault Zoning Act (which addresses only surface fault-rupture hazards) and are outlined below:

The State Geologist is required to delineate the various “seismic hazard zones.”

- Cities and counties, or other local permitting authority, must regulate certain development “projects” within the zones. They must withhold the development permits for a site within a zone until the geologic and soil conditions of the site are investigated and appropriate mitigation measures, if any, are incorporated into development plans.
- The State Mining and Geology Board provides additional regulations, policies, and criteria to guide cities and counties in their implementation of the law. The Board also provides guidelines for preparation of the Seismic Hazard Zone Maps and for evaluating and mitigating seismic hazards.
- Sellers (and their agents) of real property within a mapped hazard zone must disclose that the property lies within such a zone at the time of sale.

Division of Mines and Geology

The California Division of Mines and Geology (DMG) operates within the Department of Conservation. The DMG is responsible for assisting in the utilization of mineral deposits and the identification of geological hazards.

State Geological Survey

Similar to the DMG, the California Geological Survey is responsible for assisting in the identification and proper utilization of mineral deposits, as well as the identification of fault locations and other geological hazards.

LOCAL

City of Manteca General Plan

The City of Manteca General Plan includes several policies that are relevant to geological hazards and soils. 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: Safety Element

- S-P-1. The City shall require preparation of geological reports and/or geological engineering

3.6 GEOLOGY AND SOILS

reports for proposed new development located in areas of potentially significant geological hazards, including potential subsidence (collapsible surface soils) due to groundwater extraction.

- S-P-2. The City shall require new development to mitigate the potential impacts of geologic hazards through Building Plan review.
- S-P-3. The City shall require new development to mitigate the potential impacts of seismic induced settlement of uncompacted fill and liquefaction (water-saturated soil) due to the presence of a high water table.
- S-P-5. The City shall ensure that all public facilities, such as buildings, water tanks, and reservoirs, are structurally sound and able to withstand seismic shaking and the effects of seismically induced ground failure.

Implementation: Safety Element

- S-I-1. All new development shall comply with the current Uniform Building Code (UBC) requirements that stipulate building structural material and reinforcement.

S-I-2. All new development shall comply with California Health and Safety Code Section 19100 et seq. (Earthquake Protection Law), which requires that buildings be designed to resist stresses produced by natural forces such as earthquakes and wind.

GENERAL PLAN UPDATE

Policies: Safety Element

- S-2.1. Enforce adopted regulations to identify and address potential hazards relating to seismic, geologic, and soils conditions.
- S-2.2. Regulate development in areas of seismic and geologic hazards to reduce risks to life and property associated with earthquakes, liquefaction, erosion, and expansive soils.
- S-2.3. Require new development to mitigate the potential impacts of geologic and seismic hazards, including uncompacted fill, liquefaction, and subsidence, through the development review process.
- S-2.6. Continue to require professional inspection of foundation, excavation, earthwork, and other geotechnical aspects of site development during construction on those sites specified in geotechnical studies as being prone to moderate or greater levels of seismic or geologic hazard.
- S-2.8. Ensure that all public facilities, including buildings, water tanks, and reservoirs, are structurally sound and able to withstand seismic shaking and the effects of seismically-induced ground failure, consistent with the California Building Standards Codes and other applicable standards.

Implementation: Safety Element

- S-2a. Continue to require preparation of geotechnical reports for proposed development projects, public projects, and all critical structures. The reports should include, but not be

limited to: evaluation of and recommendations to mitigate the effects of fault displacement, ground shaking, uncompacted fill, expansive soils, liquefaction, subsidence, and settlement. Recommendations from the report shall be incorporated into the development project to address seismic and geologic risks identified in the report.

- S-2b. Review development proposals to ensure compliance with the current State building standards.
- S-2c. Review development proposals to ensure compliance with California Health and Safety Code Section 19100 et seq. (Earthquake Protection Law), which requires that buildings be designed to resist stresses produced by natural forces such as earthquakes and wind.

City of Manteca Municipal Code

Chapter 15.04 of the Manteca Municipal Code adopts the 2019 CBSC, with amendments to address administrative provisions and additional requirements to address connection of existing slabs to new construction, as the building code of the City.

The City of Manteca Municipal Code includes Chapter 17.48 that requires a soil management report in order to reduce runoff and encourage healthy plant growth as part of the Landscape Documentation Package.

3.6.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact on geology and soils if it will:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - 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;
 - Strong seismic ground shaking;
 - Seismic-related ground failure, including liquefaction; or
 - Landslides.
- Result in substantial soil erosion or the loss of topsoil;
- 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;
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994),

creating substantial direct or indirect risks to life or property;

- 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; or
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

IMPACTS AND MITIGATION MEASURES

Impact 3.6-1: The proposed Project may expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides. (Less than Significant with Mitigation)

Development of the proposed Project could result in the exposure of people and structures to conditions that have the potential for adverse effects associated with rupture of a known earthquake fault, strong seismic ground shaking, and seismic-related ground failure, including liquefaction, or landslides. Each are discussed below:

GROUND RUPTURE

The California Geologic Survey (CGS) evaluates faults and determines if a fault should be zoned as active, potentially active, or inactive. All active faults are incorporated into a Special Studies Zone, also referred to as an Alquist-Priolo Special Study Zone. The Project site is not within an Alquist-Priolo Special Study Zone.

The U.S. Geological Survey identifies potential seismic sources within 32.2 kilometers (20 miles) of the Project site. Two of the closest known faults classified as active by the U.S. Geological Survey are an unnamed fault east of the City of Tracy, located approximately 7 miles to the southwest, and the San Joaquin fault, located approximately 13 miles to the southwest. Therefore, because no faults are located on the Project sites, the potential for ground rupture (cracking or breaking of the ground during an earthquake) would be less than significant.

GROUND SHAKING

According to the California Geological Survey's Probabilistic Seismic Hazard Assessment Program, Manteca is considered to be within an area that is predicted to have a 10 percent probability that a seismic event would produce horizontal ground shaking of 10 to 20 percent within a 50-year period. This level of ground shaking correlates to a Modified Mercalli intensity of V to VII, light to strong. As a result of these factors the California Geological Survey has defined the entire county as a seismic hazard zone. The Uniform Building Code places all of California in the zone of greatest earthquake severity because recent studies indicate high potential for severe ground shaking.

To reduce the impact of seismic ground shaking on the development, the Project would be required to be constructed using standard engineering and seismic safety design techniques of the California

Building Code, as required by Section 15.04.010 of the City's 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 would 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. Design in accordance with these standards and policies would reduce any potential impact to a less than significant level.

LIQUEFICATION

To date, the Seismic Hazards Zonation Program of the CGS has not identified any seismically-induced liquefaction zones in the City of Manteca or in the Project site. However, soil data from the NRCS Web Soil Survey (NRCS 2015) suggests that the potential for liquefaction is moderate given that the soils are high in sand and the water table is moderately high. Therefore, this is a potentially significant impact.

LANDSLIDES

The Project site is essentially flat; therefore, the potential for a landslide in the Project site is low to non-existent. Some limited potential for slope instability risk could arise during grading and construction activities, where slopes could be over-steepened. However, this risk is mitigated by adhering to relevant California Building Code requirements. Additionally, according to the CGS Information Warehouse: Regulatory Maps, the site is not located within a Landslide and Liquefaction Zone. As a result, the probability of landslides causing substantial adverse effects on people or structures is less than significant.

CONCLUSION

The City, including the Project site, is subject to potential ground shaking caused by seismic activity. Seismic activity could come from a known active fault such as the Greenville fault, or any number of other faults in the region. In order to minimize potential damage to the buildings and site improvements, all construction in California is required to be designed in accordance with the latest seismic design standards of the California Building Code. As discussed under Section 3.6.2 Regulatory Setting, the California Building Code, Title 24, Part 2, Chapter 16 addresses structural design and Chapter 18 addresses soils and foundations. Collectively, these requirements, which have been adopted by the City of Manteca (Municipal Code Section 15.04.010), include design standards and requirements that are intended to minimize impacts to structures in seismically active areas of California. Section 1613 specifically provides structural design standards for earthquake loads.

The Project site has a moderate risk of seismic-related ground failure as a result of liquefaction. Mitigation Measure 3.6-1 requires the preparation of a final geotechnical evaluation of soils at a design-level, consistent with Sections 1803.1.1.2, 1803.5.11. and 1803.5.12 of the CBC. Implementation of this mitigation measure would ensure that all on-site fill soils are properly compacted and comply with the applicable safety requirements established by the CBC to reduce

risks associated with unstable soils and excavations and fills, and that any issues associated with unstable soils are addressed at the design level. Therefore, implementation of Mitigation Measure 3.6-1 would ensure the proposed Project would have a **less than significant** impact relative to this topic.

MITIGATION MEASURE(S)

Mitigation Measure 3.6-1: *Prior to issuance of a Grading Permit, a certified geotechnical engineer, or equivalent, shall be retained to perform a final geotechnical evaluation of the soils at a design-level as required by the requirements of the California Building Code Title 24, Part 2, Chapter 18, Section 1803.1.1.2 related to expansive soils and other soil conditions. The evaluation shall be prepared in accordance with the standards and requirements outlined in California Building Code, Title 24, Part 2, Chapter 16, Chapter 17, and Chapter 18, which addresses structural design, tests and inspections, and soils and foundation standards. The final geotechnical evaluation shall include design recommendations to ensure that soil conditions do not pose a threat to the health and safety of people or structures, including threats from liquefaction or lateral spreading. The grading and improvement plans, as well as the storm drainage and building plans for each phase of the Project shall be designed in accordance with the recommendations provided in the final geotechnical evaluation.*

Impact 3.6-2: Implementation and construction of the proposed Project may result in substantial soil erosion or the loss of topsoil. (Less than Significant with Mitigation)

According to the United States Environmental Protection Agency, polluted stormwater runoff is a leading cause of impairment to the nearly 40 percent of surveyed U.S. water bodies which do not meet water quality standards. Over land or via storm sewer systems, polluted runoff is discharged, often untreated, directly into local water bodies. Soil erosion and the loss of topsoil is one of the most common sources of polluted stormwater runoff during construction activities. When left uncontrolled, stormwater runoff can erode soil and cause sedimentation in waterways, which collectively result in the destruction of fish, wildlife, and aquatic life habitats; a loss in aesthetic value; and threats to public health due to contaminated food, drinking water supplies, and recreational waterways.

Mandated by Congress under the Clean Water Act, the NPDES Stormwater Program is a comprehensive two-phased national program for addressing the non-agricultural sources of stormwater discharges which adversely affect the quality of our nation's waters. The program uses the National Pollutant Discharge Elimination System (NPDES) permitting mechanism to require the implementation of controls designed to prevent harmful pollutants, including soil erosion, from being washed by stormwater runoff into local water bodies. The construction activities for the proposed Project would be governed by the General Permit 2009-0009-DWQ (amended by 2010-0014-DWQ & 2012-0006-DWQ), which states:

"...Particular attention must be paid to large, mass graded sites where the potential for soil exposure to the erosive effects of rainfall and wind is great and where there is

potential for significant sediment discharge from the site to surface waters. Until permanent vegetation is established, soil cover is the most cost-effective and expeditious method to protect soil particles from detachment and transport by rainfall. Temporary soil stabilization can be the single most important factor in reducing erosion at construction sites. The discharger is required to consider measures such as: covering disturbed areas with mulch, temporary seeding, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation, and permanent seeding. These erosion control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. Erosion control BMPs should be the primary means of preventing stormwater contamination, and sediment control techniques should be used to capture any soil that becomes eroded..."

General Permit 2009-0009-DWQ (amended by 2010-0014-DWQ & 2012-0006-DWQ) further states that:

"Sediment control BMPs should be the secondary means of preventing stormwater contamination. When erosion control techniques are ineffective, sediment control techniques should be used to capture any soil that becomes eroded. The discharger is required to consider perimeter control measures such as: installing silt fences or placing straw wattles below slopes. These sediment control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed...Inappropriate management of run-on and runoff can result in excessive physical impacts to receiving waters from sediment and increased flows. The discharger is required to manage all run-on and runoff from a project site. Examples include: installing berms and other temporary run-on and runoff diversions...All measures must be periodically inspected, maintained and repaired to ensure that receiving water quality is protected. Frequent inspections coupled with thorough documentation and timely repair is necessary to ensure that all measures are functioning as intended..."

To ensure that construction activities are covered under General Permit 2009-0009-DWQ (amended by 2010-0014-DWQ & 2012-0006-DWQ), projects in California must prepare a Stormwater Pollution Prevention Plan (SWPPP) containing Best Management Practices (BMPs) to reduce erosion and sediments to meet water quality standards. Such BMPs may include: temporary erosion control measures such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover. The BMPs and overall SWPPP is reviewed by the Regional Water Quality Control Board as part of the permitting process. The SWPPP, once approved, is kept on site and implemented during construction activities and must be made available upon request to representatives of the RWQCB and/or the lead agency.

The Custom Soils Report identified the erosion potential for the soils in the Project site as low to moderate. Furthermore, because the Project site is essentially flat, the erosion potential is considered slight. Regardless of the potential for erosion, there is always the potential for human caused erosion associated with construction activities or through the operational phase of a project. Grading, excavation, removal of vegetation cover, and loading activities associated with

construction activities temporarily expose soils and increase the potential for soil erosion and sedimentation during rail events. Construction activities can also result in soil compaction and wind erosion effects that can adversely affect soils and reduce the revegetation potential at construction sites and staging areas.

In accordance with the NPDES Stormwater Program, Mitigation Measure 3.9-1 in the Hydrology and Water Quality Section of this EIR requires an approved SWPPP designed to control erosion and the loss of topsoil to the extent practicable using BMPs that the RWQCB has deemed effective in controlling erosion, sedimentation, runoff during construction activities. The RWQCB has stated that these erosion control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. The specific controls are subject to the review and approval by the RWQCB and are existing regulatory requirements. Implementation of Mitigation Measures 3.9-1 would ensure that the proposed Project would have a *less than significant* impact relative to this topic.

MITIGATION MEASURE(S)

Implement Mitigation Measure 3.9-1.

Impact 3.6-3: The proposed Project has the potential to be located on a geologic unit or soil that is unstable, or that would become unstable as a result of Project implementation, and potentially result in landslide, lateral spreading, subsidence, liquefaction or collapse. (Less than Significant with Mitigation)

Development of the proposed Project could result in the exposure of people and structures to conditions that have the potential for adverse effects associated with ground instability or failure. Soils and geologic conditions in the Project site have the potential for landslides, lateral spreading, subsidence, liquefaction, or collapse. Each are discussed below:

LIQUEFACTION

As discussed in Impact 3.6-1, the Seismic Hazards Zonation Program of the CGS has not identified any seismically-induced liquefaction zones in the City of Manteca, including the Project site. However, soil data from the NRCS Web Soil Survey (NRCS 2019) suggests that the potential for liquefaction is moderate given that the soils are high in sand and the water table is moderately high.

LATERAL SPREADING

Lateral spreading generally is a phenomenon where blocks of intact, non-liquefied soil move down slope on a liquefied substrate of large areal extent. The potential for liquefaction at the Project site is moderate; therefore, the potential for lateral spreading of soils is also present.

LANDSLIDES

As discussed in Impact 3.6-1, the Project site is essentially flat and, to date, the Seismic Hazards Zonation Program of the CGS has not identified any seismically-induced landslide zones in the City of Manteca or in the Project site. Therefore, the potential for a landslide in the Project site is low to non-existent.

COLLAPSIBLE SOILS

Collapsible soils occur predominantly at the base of mountain ranges, where Holocene-age alluvial fan and wash sediments have been deposited during rapid run-off events. Differential settlement of structures typically occurs when heavily irrigated landscape areas are near a building foundation. Collapsible soils have not been identified in the City of Manteca as an issue. However, in areas subject to potential liquefaction, the potential for liquefaction induced settlement is present.

SUBSIDENCE

Land subsidence is the gradual settling or sinking of an area with little or no horizontal motion due to changes taking place underground. It is a natural process, although it can also occur (and is greatly accelerated) as a result of human activities. Subsidence has not been identified in the Manteca General Plan.

CONCLUSION

The Project site does not have a significant risk of becoming unstable as a result landslide, subsidence, or soil collapse. There is a potential for liquefaction, liquefaction induced settlement, and lateral spreading. However, through the implementation of Mitigation Measure 3.6-1 and compliance with section 15.04.010 of the City's Municipal Code, the proposed Project would have a ***less than significant*** impact relative to this topic.

MITIGATION MEASURE(S)

Implement Mitigation Measure 3.6-1

Impact 3.6-4: The proposed Project has the potential to result in development on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property. (Less than Significant with Mitigation)

Expansive soils are those that undergo volume changes as moisture content fluctuates; swelling substantially when wet or shrinking when dry. According to the NRCS Web Soil Survey, the soils in the Project site have a low to high shrink-swell potential, with the highest potential occurring on the western half of the development area. The NRCS Web Soil Survey indicated that near surface soils within the Project site have low plasticity, and the expansion potential of the soils would respond to fluctuations in moisture content. Figure 3.6-2 provides a map of the shrink-swell potential of the soils at the Project site and in the vicinity.

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. The City of Manteca also requires a final geotechnical evaluation to be performed at a design-level to ensure that the foundations, structures, roadway sections, sidewalks, and other improvements can accommodate the specific soils, including expansive soils, at those locations. Mitigation Measure 3.6-2, presented above, provides the requirement for a final geotechnical evaluation in accordance with the standards and requirements outlined in the California Building Code, Title 24, Part 2, Chapter 16, Chapter 17, and Chapter 18, which addresses structural design, tests and inspections, and soils and foundation standards. The final geotechnical evaluation would include design recommendations to ensure that soil conditions do not pose a threat to the health and safety of people or structures. The grading and improvement plans, as well as the storm drainage and building plans, are required to be designed in accordance with the recommendations provided in the final geotechnical evaluation. With the implementation of Mitigation Measure 3.6-1 (requiring a final Geotechnical Evaluation, and site recommendations) the proposed Project would have a ***less than significant*** impact relative to this topic.

MITIGATION MEASURE(S)

Implement Mitigation Measure 3.6-1.

Impact 3.6-5: The proposed Project does not have the potential to 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 (Less than Significant)

The proposed Project involves the annexation of 183.46 acres into the City of Manteca, including the proposed 161.19-acre Development Area, 19.11-acre Non-development Area, and 3.16 acres of existing right-of-way, to develop 827 single family detached units, two parks totaling 12.15-acres, and associated roadway improvements.

The proposed residential and park development would occur only on the 161.19-acre Development Area. As discussed in Chapter 2.0, Project Description, septic tanks or septic systems are not proposed as part of the Project. The Development Area would be served by a new wastewater distribution system. The proposed wastewater conveyance facilities would connect to the existing 36" sewer main in Woodward Avenue as part of the City of Manteca collection and treatment system. The Non-development Area is improved with 15 existing single-family residences, which are all served by septic systems. In addition, there are septic systems currently on the Development Area portion of the site associated with the two residences. All of the existing septic systems are adequately supported by the soils in the area. Further, the Project does not propose new septic systems or alternative waste water disposal. Following annexation into the City of Manteca, the Non-development Area residences would be required to connect to the City of Manteca wastewater collection and treatment system. Upon connection to the City's wastewater collection, conveyance and treatment system there will be no new septic tanks or alternative wastewater disposal systems

utilized for the proposed Project, this impact is considered *less than significant* and no mitigation is required.

Impact 3.6-6: The proposed Project has the potential to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature (Less than Significant with Mitigation)

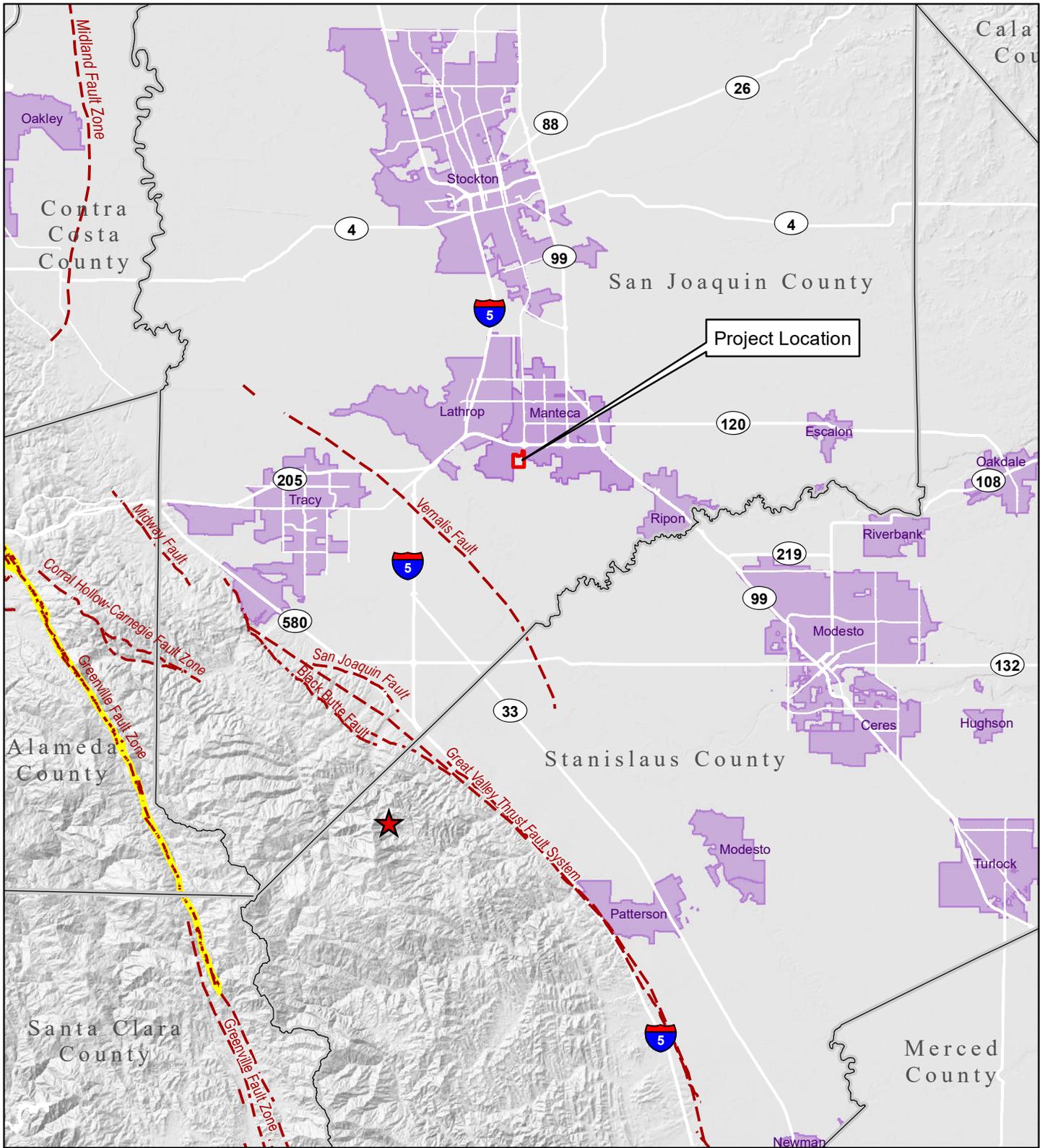
Although the Project site is not expected to contain subsurface paleontological resources, the Project site is in an area known to have these resources and it is possible that undiscovered paleontological resources could be encountered during ground-disturbing activities. Damage to or destruction of a paleontological resource would be considered a potentially significant impact under local, state, or federal criteria. Implementation of Mitigation Measure 3.6-2 would ensure steps would be taken to reduce impacts to paleontological resources in the event that they are discovered during construction, including stopping work in the event potential resources are found, evaluation of the resource by a qualified paleontologist and appropriate handling of any potential resource. This mitigation measure would reduce this impact to a *less than significant* level.

MITIGATION MEASURE(S)

Mitigation Measure 3.6-2: *If any paleontological resources are found during grading and construction activities of the Project, all work shall be halted immediately within a 200-foot radius of the discovery until a qualified paleontologist has evaluated the find.*

Work shall not continue at the discovery site until the paleontologist evaluates the find and makes a determination regarding the significance of the resource and identifies recommendations for conservation of the resource, including preserving in place or relocating on the Project site, if feasible, or collecting the resource to the extent feasible and documenting the find with the University of California Museum of Paleontology.

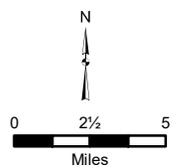
This page left intentionally blank.



Legend

- Annexation Area
- Quaternary Fault
- Alquist Priolo Fault Zone
- Incorporated Area
- County Boundary

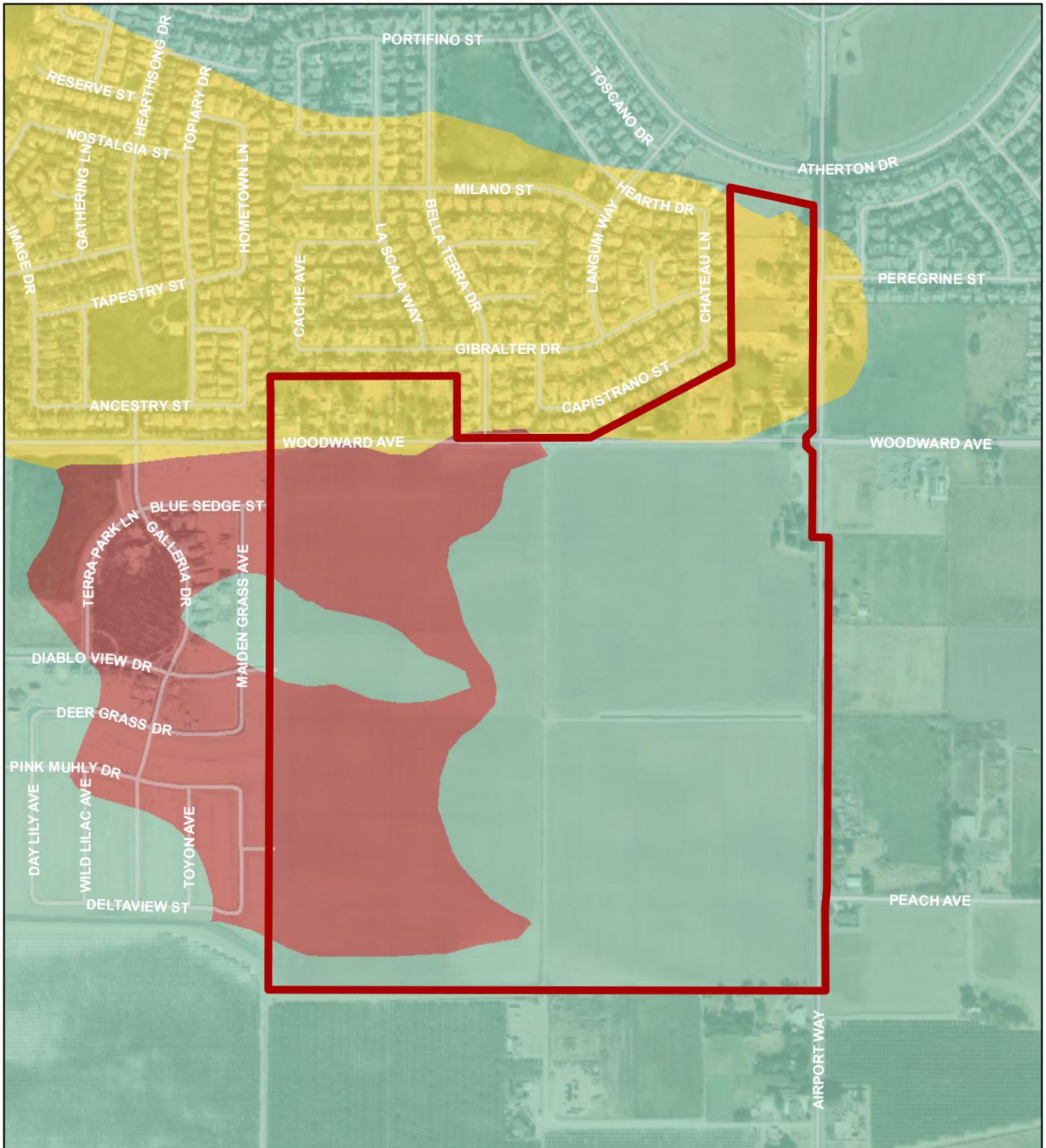
Source: USGS; California State GeoPortal. Map date: February 23, 2021.



LUMINA at MACHADO RANCH

Figure 3.6-1. Earthquake Fault Map

This page left intentionally blank.



Legend

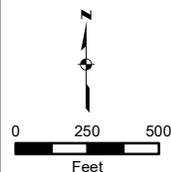
 Annexation Area

Shrink-Swell Potential (Linear Extensibility)*

-  Low (<3%)
-  Moderate (3-6%)
-  High (6-9%)

* Shrink-Swell Potential is determined by linear extensibility. Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Soils are considered to have low potential when the linear extensibility is less than 3%, moderate if 3-6%, high if 6-9%, and very high if greater than 9%.

Sources: San Joaquin County GIS; USDA/NRCS Soils via ArcGIS Online; ArcGIS Online World Imagery Map Service. Map date: February 22, 2021.



LUMINA at MACHADO RANCH

Figure 3.6-2. Shrink-Swell Potential of Soils

This page left intentionally blank.

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.

There were no comments received during the NOP scoping process related to this environmental topic.

3.7.1 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 (H₂O), carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and ozone (O₃). 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 CO₂, CH₄, and N₂O 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 (CO₂), methane (CH₄), ozone (O₃), water vapor, nitrous oxide (N₂O), 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, 2020).

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 440 million gross metric tons of carbon dioxide equivalents (MMTCO₂e) in 2016 (California Air Resources Board, 2018a).

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 CO₂ were being emitted.

Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2017, accounting for 41% of total GHG emissions in the State. This category was followed by the industrial sector (24%), the electricity generation sector (including both in-state and out-of-state sources) (15%), the agriculture sector (8%), the residential energy consumption sector (7%), and the commercial energy consumption sector (5%) (California Air Resources Board, 2020c).

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, 2020b). 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 2016, more than one-fourth 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, 2020a). In 2016, approximately 50 percent of California's utility-scale net electricity generation was fueled by natural gas. In addition, about 25 percent of the State's utility-scale net electricity generation came from non-hydroelectric renewable technologies, such as solar, wind, geothermal, and biomass. Another 14 percent of the State's utility-scale net electricity generation came from hydroelectric generation, and nuclear energy powered an additional 11 percent. The amount of electricity generated from coal negligible (approximately 0.2 percent) (U.S. EIA, 2020a). 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, 2020b). Statewide consumption was 274,985 GWh in 2010, an annual growth rate of 0.9 percent between 1997 and 2010. In 2019, electricity consumption in San Joaquin County was 5,583 GWh (California Energy Commission, 2020).

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, 2020c). 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 2018, natural gas consumption in San Joaquin County was 259 million therms (California Energy Commission, 2020).

3.7.2 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 CO₂ 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.”

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 (MTCO_{2e}), 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) CO₂e, or approximately 22 percent from the State's projected 2020 emission level of 545 MMT of CO₂e under a business-as-usual scenario. This is a reduction of 47 MMT CO₂e, or almost 10 percent, from 2008 emissions. CARB's original 2020 projection was 596 MMT CO₂e, 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 CO₂e);
- the Low Carbon Fuel Standard (15.0 MMT CO₂e);
- energy efficiency measures in buildings and appliances (11.9 MMT CO₂e); and
- renewable portfolio and electricity standards for electricity production (23.4 MMT CO₂e).

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 CO₂e 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 CO₂e emissions, or approximately 16 percent, from

the State's projected 2020 emission level of 507 MMT of CO₂e 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.

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

3.7 GREENHOUSE GASES, CLIMATE CHANGE AND ENERGY

incorporation of new energy efficiency technologies and methods. The current 2019 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.
- 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 2019 Title 24 standards. The 2019 Building Energy Efficiency Standards improve upon the 2016 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. Buildings permitted on or after January 1, 2020, must comply with the 2019 Standards. The California Energy Commission updates the standards every three years.

Single-family homes built with the 2019 standards will use about 7 percent less energy due to energy efficiency measures versus those built under the 2016 standards. Once rooftop solar electricity generation is factored in, homes built under the 2019 standards will use about 53 percent less energy than those under the 2016 standards. This will reduce greenhouse gas emissions by 700,000 metric tons over three years, equivalent to taking 115,000 fossil fuel cars off the road. Nonresidential buildings will use about 30 percent less energy due mainly to lighting upgrades.

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 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.

CEQA Direction

In 2008, the Office of Planning and Research (OPR), issued Guidance regarding assessing significance of GHGs in California Environmental Quality Act (CEQA) documents; that Guidance stated that the adoption of appropriate significance thresholds was a matter of discretion for the lead agency. The OPR Guidance states:

“[T]he global nature of climate change warrants investigation of a statewide threshold of significance for GHG emissions. To this end, OPR has asked the CARB technical staff to recommend a method for setting thresholds which will encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the state. Until such time as state guidance is available on thresholds of significance for GHG emissions, we recommend the following approach to your CEQA analysis.”

Determine Significance

- When assessing a project’s GHG emissions, lead agencies must describe the existing environmental conditions or setting, without the project, which normally constitutes the baseline physical conditions for determining whether a project’s impacts are significant.
- As with any environmental impact, lead agencies must determine what constitutes a significant impact. In the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a “significant impact,” individual lead agencies may

undertake a project-by-project analysis, consistent with available guidance and current CEQA practice.

- The potential effects of a project may be individually limited but cumulatively considerable. Lead agencies should not dismiss a proposed project's direct and/or indirect climate change impacts without careful consideration, supported by substantial evidence. Documentation of available information and analysis should be provided for any project that may significantly contribute new GHG emissions, either individually or cumulatively, directly or indirectly (e.g., transportation impacts).
- Although climate change is ultimately a cumulative impact, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment. CEQA authorizes reliance on previously approved plans and mitigation programs that have adequately analyzed and mitigated GHG emissions to a less than significant level as a means to avoid or substantially reduce the cumulative impact of a project.

The OPR Guidance did not require Executive Order S-3-05 to be used as a significance threshold under CEQA. Rather, OPR recognized that, until the CARB establishes a statewide standard, selecting an appropriate threshold was within the discretion of the lead agency.

In 2010, the California Natural Resources Agency added Section 15064.4 to the CEQA Guidelines, providing new legal requirements for how agencies should address GHG-related impacts in their CEQA documents. As amended in 2019, Section 15064.4 provides as follows:

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

- (1) Quantify greenhouse gas emissions resulting from a project; and/or
- (2) Rely on a qualitative analysis or performance-based standards.

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

factors, among others, when determining the significance of impacts from greenhouse gas emissions on the environment:

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

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

(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions (see, e.g., section 15183.5(b)). Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

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

Section 15126.4, subdivision (c), provides guidance on how to formulate mitigation measures addressing GHG-related impacts:

Consistent with section 15126.4(a), lead agencies shall consider feasible means, supported by substantial evidence and subject to monitoring or reporting, of mitigating the significant effects of greenhouse gas emissions. Measures to mitigate the significant effects of greenhouse gas emissions may include, among others:

(1) Measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision;

- (2) Reductions in emissions resulting from a project through implementation of project features, project design, or other measures, such as those described in Appendix F;
- (3) Off-site measures, including offsets that are not otherwise required, to mitigate a project's emissions;
- (4) Measures that sequester greenhouse gases;
- (5) In the case of the adoption of a plan, such as a general plan, long range development plan, or plans for the reduction of greenhouse gas emissions, mitigation may include the identification of specific measures that may be implemented on a project-by-project basis. Mitigation may also include the incorporation of specific measures or policies found in an adopted ordinance or regulation that reduces the cumulative effect of emissions.

California Supreme Court Decisions

THE "NEWHALL RANCH" CASE

On November 30, 2015, the California Supreme Court released its opinion on *Center for Biological Diversity v. California Department of Fish and Wildlife* (2015) 62 Cal.4th 204 (hereafter referred to as the Newhall Ranch Case).

Because of the importance of the Supreme Court as the top body within the California Judiciary, and because of the relative lack of judicial guidance regarding how GHG issues should be addressed in CEQA documents, the opinion provides very important legal guidance to agencies charged with preparing EIRs.

The case involved a challenge to an EIR prepared by the California Department of Fish and Wildlife (CDFW) for the Newhall Ranch development project in Los Angeles County, which consists of approximately 20,000 dwelling units as well as commercial and business uses, schools, golf courses, parks and other community facilities in the City of Santa Clarita.

In relation to GHG analysis, the Newhall Ranch Case illustrates the difficulty of complying with statewide GHG reduction targets at the local level using CEQA to determine whether an individual project's GHG emissions will create a significant environmental impact triggering an EIR, mitigation, and/or statement of overriding consideration. The EIR utilized compliance with AB 32's GHG reduction goals as a threshold of significance and modelled its analysis on the CARB's business-as-usual (BAU) emissions projections from the 2008 Scoping Plan. The EIR quantified the project's annual emissions at buildout and projected emissions in 2020 under a BAU scenario, in which no additional regulatory actions were taken to reduce emissions. Since the Scoping Plan determined a reduction of 29 percent from BAU was needed to meet AB 32's 2020 reduction goal, the EIR concluded that the project would have a less-than-significant impact because the project's annual GHG emissions were projected to be 31 percent below its BAU estimate.

The Supreme Court concluded that the threshold of significance used by the EIR was permissible; however, the BAU analysis lacked substantial evidence to demonstrate that the required percentage reduction from BAU is the same for an individual project as for the entire State. The court expressed skepticism that a percentage reduction goal applicable to the State as a whole would apply without change to an individual development project, regardless of its size or location. Therefore, the Supreme Court determined that the EIR's GHG analysis was not sufficient to support the conclusion that GHG impacts would be less than significant.

In addition, the Supreme Court provided the following guidance regarding potential alternative approaches to GHG impact assessment at the project level for lead agencies:

1. The lead agency determination of what level of GHG emission reduction from business-as-usual projection that a new land development at the proposed location would need to achieve to comply with statewide goals upon examination of data behind the Scoping Plan's business-as-usual emission projections. The lead agency must provide substantial evidence and account for the disconnect between the Scoping Plan, which dealt with the State as a whole, and an analysis of an individual project's land use emissions (the same issues with CEQA compliance addressed in this case);
2. The lead agency may use a project's compliance with performance based standards – such as high building energy efficiency – adopted to fulfill a statewide plan to reduce or mitigate GHG emissions to assess consistency with AB 32 to the extent that the project features comply with or exceed the regulation (See Guidelines Section 15064.4(a)(2), (b)(3); see also Guidelines Section 15064(h)(3)). A significance analysis would then need to account for the additional GHG emissions – such as transportation emissions – beyond the regulated activity. Transportation emissions are in part a function of the location, size, and density or intensity of a project, and thus can be affected by local governments' land use decision making. Additionally, the lead agency may use a programmatic effort including a general plan, long range development plan, or a separate plan to reduce GHG emissions (such as Climate Action Plan or a SB 375 metropolitan regional transportation impact Sustainable Communities Strategy) that accounts for specific geographical GHG emission reductions to streamline or tier project level CEQA analysis pursuant to Guidelines 15183.5(a)-(b) for land use and Public Resources Code Section 21155.2 and 21159.28 and Guidelines Section 15183.5(c) for transportation.
3. The lead agency may rely on existing numerical thresholds of significance for GHG emissions (such as the Bay Area Air Quality Management District's proposed threshold of significance of 1,100 MT CO₂E in annual emission for CEQA GHG emission analysis on new land use projects). The use of a numerical value provides what is "normally" considered significant but does not relieve a lead agency from independently determining the significance of the impact for the individual project (See Guidelines Section 15064.7).

THE SANDAG CASE

In *Cleveland National Forest Foundation v. San Diego Association of Governments* (2017) 3 Cal.5th 497 (*SANDAG*), the Supreme Court addressed the extent to which, if any, an EIR for a Regional Transportation Plan (RTP) with a Sustainable Communities Strategy (SCS) must address the proposed project's consistency with the 2050 target set forth in Executive Order S-03-05 (i.e., 80 percent below 1990 levels). The Court held that SANDAG did not abuse its discretion by failing to treat the 2050 GHG emissions target as a threshold of significance. The Court cautioned, however, that its decision applies narrowly to the facts of the case and that the analysis in the challenged EIR should not be used as an example for other lead agencies to follow going forward. Notably, the RTP itself covered a planning period that extended all the way to 2050.

The Court acknowledged the parties' agreement that "the Executive Order lacks the force of a legal mandate binding on SANDAG[.]" (*Id.* at p. 513.) This conclusion was consistent with the Court's earlier decision in *Professional Engineers in California Government v. Schwarzenegger* (2010) 50 Cal.4th 989, 1015, which held the Governor had acted in excess of his executive authority in ordering the furloughing of State employees as a money-saving strategy. In that earlier case, which is not mentioned in the *SANDAG* decision, the Court held that the decision to furlough employees was legislative in character, and thus could only be ordered by the Legislature, and not the Governor, who, under the State constitution, may only exercise executive authority. In *SANDAG*, the Court thus impliedly recognized that Governors do not have authority to set statewide legislative policy, particularly for decades into the future. Even so, however, the Court noted, and did not question, the parties' agreement that "the Executive Order's 2050 emissions reduction target is grounded in sound science." (3 Cal.5th at p. 513.) Indeed, the Court emphasized that, although "the Executive Order 'is not an adopted GHG reduction plan' and that 'there is no legal requirement to use it as a threshold of significance,'" the 2050 goal nevertheless "expresses the pace and magnitude of reduction efforts that the scientific community believes necessary to stabilize the climate.

This scientific information has important value to policymakers and citizens in considering the emission impacts of a project like SANDAG's regional transportation plan." (*Id.* at p. 515.) Towards the end of the decision, the Court even referred to "the state's 2050 climate goals" as though the 2050 target from E.O. S-03-05 had some sort of standing under California law. (*Id.* at p. 519.) The Court seemed to reason that, because the Legislature had enacted both AB 32 and SB 32, which followed the downward GHG emissions trajectory recommended in the Executive Order, the Legislature, at some point, was also likely to adopt the 2050 target as well: "SB 32 ... reaffirms California's commitment to being on the forefront of the dramatic greenhouse gas emission reductions needed to stabilize the global climate." (*Id.* at p. 519.) Finally, the Court explained that "planning agencies like SANDAG must ensure that CEQA analysis stays in step with evolving scientific knowledge and state regulatory schemes." (*Ibid.*)

In sum, the Court recognized that the Executive Order did not carry the force of law, but nevertheless considered it to be part of "state climate policy" because the Legislature, in enacting both AB 32 and SB 32, seems to be following both the IPCC recommendations for reducing GHG emissions worldwide and evolving science. Nothing in the decision, however, suggests that all projects,

regardless of their buildout period, must address the 2050 target or treat it as a significance threshold.

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

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

3.7 GREENHOUSE GASES, CLIMATE CHANGE AND ENERGY

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 employ 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.

3.7 GREENHOUSE GASES, CLIMATE CHANGE AND ENERGY

- 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 policies (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:

3.7 GREENHOUSE GASES, CLIMATE CHANGE AND ENERGY

- 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 3.7-1. Table 3.7-2 provides a summary of the City’s 2020 target, adjusted-BAU emissions, and the local reductions included within the CAP.

TABLE 3.7-1: CITY OF MANTECA BASELINE EMISSIONS INVENTORY AND BUSINESS-AS-USUAL (BAU) EMISSIONS INVENTORY PROJECTIONS (MT CO₂E)

<i>EMISSIONS SECTOR</i>	<i>2005</i>	<i>2010</i>	<i>2020</i>	<i>2035</i>
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: MICHAEL BRANDMAN ASSOCIATES, 2013

3.7 GREENHOUSE GASES, CLIMATE CHANGE AND ENERGY

TABLE 3.7-2: CITY OF MANTECA 2020 TARGET EMISSIONS INVENTORY (MT CO₂E)

<i>INVENTORY</i>	<i>COMMUNITY EMISSIONS</i>	<i>PER CAPITA EMISSIONS (MT CO₂E/PERSON)</i>
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: MICHAEL BRANDMAN ASSOCIATES, 2013

3.7.3 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.

The vast majority of individual projects do not generate sufficient GHG emissions to create a project-specific impact through a direct influence to climate change; therefore, the issue of climate change typically involves an analysis of whether a project's contribution towards an impact is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15355).

For future projects, the significance of GHG emissions may be evaluated based on locally adopted quantitative thresholds, or consistency with a regional GHG reduction plan (such as a Climate Action Plan).

Prior to the Newhall Ranch decision, GHG analysis in CEQA documents often involved comparison of the project emissions to a "no action taken" (NAT) scenario. In the Newhall Ranch decision, the court found that, although comparison of a project to NAT (or "business as usual") may be appropriate in concept, the comparison of a specific local project against a statewide business as usual scenario is not an analogous comparison. Specifically, the Court stated that the business as usual approach would need to be based on a substantial evidence-supported link between data in the Scoping Plan and the project, at its proposed location, to demonstrate consistency of a project's reductions with statewide goals. It should be noted that, based on current data available, it is not possible, within the structure of the Scoping Plan sectors, to develop the evidence to reliably relate a specific land use development project's reductions to the Scoping Plan's statewide goal, as envisioned by the Court. Based on the court's finding, the NAT approach is now considered

problematic and is no longer recommended. Therefore, this DEIR analysis replaces a former SJVAPCD threshold with a threshold that is consistent with the Newhall Ranch decision. This newer approach consists of evaluating the consistency of a project's GHG efficiency with California's GHG reduction targets. In light of the Newhall Ranch decision, an efficiency metric was developed to assess the Project's consistency with California's adopted GHG reduction targets for 2020 under AB 32, and 2030 under SB 32, and for 2050 under Executive Order S-3-05. Because this approach gives consideration to the 2050 target, it necessarily also considers the 2020 and 2030 targets created by AB 32 and SB 32.

It was found, based on this independent calculation, that a per capita threshold of 4.84 MT CO₂e/SP/year in 2020 would be the appropriate threshold for projects in California for the Year 2020. De Novo Planning Group developed the 4.84 MT CO₂e/SP/year in 2020 threshold based on emissions for the land use-driven emission sectors in the CARB GHG Inventory. This approach to developing a GHG efficiency metric is only based on sectors that would accommodate projected growth (as indicated by population and employment growth) while allowing for consistency with the goals of AB 32. More specifically, this per service population efficiency target is based on the AB 32 GHG reduction target and GHG emissions inventory prepared for the CARB's AB 32 Scoping Plan. The land-used sector driven inventory for 1990 was divided by the population and employment projections for California in 2020. This efficiency metric allows the threshold to be applied evenly to all project types (residential, commercial/retail and mixed use) and uses an emissions inventory comprised only of sources from land-use related sectors. The efficiency approach allows lead agencies to assess whether any given project or plan would accommodate population and employment growth in a way that is consistent with the emissions limit established under AB 32.

Since this independently-generated GHG efficiency threshold for the State of California would be applicable statewide, this approach to establishing efficiency thresholds is utilized for this analysis for operational emissions.

However, full buildout of the proposed Project would not occur until well after 2020. Therefore, an efficiency threshold for Year 2030 and was also derived, following the same methodology as utilized to derive the 2020 efficiency threshold. The CARB has indicated that an average statewide GHG reduction of 5.2 percent per year from 2020 through 2050 would be necessary to achieve the State's 2050 target of an 80% reduction in GHGs below 1990 levels (CARB, 2016b). This annual percentage reduction was utilized as a basis for developing the per capita efficiency thresholds for Year 2030. Thresholds for this year was estimated by applying a uniform reduction from the CARB's 1990 emissions inventory and dividing the resultant value by the projected population and employment for each future year (see **Appendix B** of this EIR for detailed calculations). The derived per capita thresholds for Year 2030 is 2.62 MT CO₂e/SP/year in 2030. The City bases its post-2020 significance determination for this proposed Project on the 2030 analysis provided herein.

Conclusion

Based on the discussion above, the following thresholds are applied to this analysis:

- For the evaluation of operation-related emissions, for year 2030, the independently derived per capita emissions threshold of 2.62 MT CO₂e/service population/year is used.

THRESHOLDS OF SIGNIFICANCE (ENERGY CONSERVATION)

Consistent with Appendices F and G of the CEQA Guidelines, energy-related impacts are considered significant if implementation of the proposed Project would do the following:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation;
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency;

In order to determine whether or not the proposed Project would result in a significant impact on energy use, this EIR includes an analysis of proposed Project energy use, as provided under *Impacts and Mitigation Measures* below.

IMPACTS AND MITIGATION MEASURES

Impact 3.7-1: Project implementation would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases (Significant and Unavoidable)

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 CO₂ and other GHG pollutants, such as methane (CH₄) and nitrous oxide (N₂O), 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)TM (v.2016.3.2). 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 CO₂ equivalent units of measure (i.e., MT CO₂e), 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 3.7-3. 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 2021 and finish in 2030. 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 3.7-3: MAXIMUM CONSTRUCTION GHG EMISSIONS (MITIGATED AVERAGE MT CO₂E/YEAR)

YEAR	BIO- CO ₂	NON-BIO- CO ₂	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
2024	0	1,432.1	1,432.1	0.1	0	1,435.3

SOURCES: CAL EEMOD (v.2016.3.2)

As presented in the table, short-term construction emissions of GHGs are estimated at a maximum of approximately 1,435 MT CO₂e 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 3.7-4, 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. This is anticipated to substantially reduce the operational emissions associated with passenger vehicles (i.e. mobile emissions) over time, including prior the 2035 final implementation year. Therefore, the operational emissions results are likely an overestimate for mobile emissions, assuming the Executive Order is implemented. As shown in the following table, the annual mitigated GHG emissions associated with the proposed Project would be approximately 12,118 MT CO₂e.

TABLE 3.7-4: OPERATIONAL GHG EMISSIONS AT BUILDOUT (MITIGATED METRIC TONS/YEAR)

	BIO- CO ₂	NON-BIO- CO ₂	TOTAL CO ₂	CH ₄	N ₂ O	CO ₂ E
Area	0	10.0	10.0	<0.1	<0.1	10.3
Energy	0	3,171.6	3,171.6	0.1	<0.1	3,186.3
Mobile	0	8,232.7	8,232.7	0.3	<0.1	8,239.9
Waste	191.9	0	191.9	11.3	<0.1	475.4
Water	17.1	132.6	149.7	1.8	<0.1	206.5
Total	209.0	11,547.0	11,755.9	13.5	0.1	12,118.3

SOURCES: CAL EEMOD (v.2016.3.2)

3.7 GREENHOUSE GASES, CLIMATE CHANGE AND ENERGY

The significance thresholds for GHG emissions should be related to compliance with AB 32 and SB 32, and the City of Manteca, as lead agency, has chosen to utilize a threshold of significance for GHG emissions as required by the Newhall Ranch decision. This threshold was independently derived by De Novo Planning Group. The rationale for using this threshold is outlined in the previous subsection, entitled “Thresholds of Significance”.

According to the Traffic Study prepared for the proposed Project (Fehr & Peers, 2021), and as described in more detail in Section 3.13 of this EIR, the Project would increase automobile VMT by approximately 7,807 new daily trips, which would generate substantial GHG emissions. The proposed Project would also generate substantial emissions from on-site energy, waste, and water emissions.

Consistent with the modeling for CalEEMod, the proposed Project is estimated to generate approximately 2,623 residents during the Project’s operational phase.¹ Dividing this number of estimated residents generated by the Project by the total annual operational GHG emissions at Project buildout yields approximately 4.62 MT CO₂e/SP/Year, which is above the 2.62 MT CO₂e/SP/year in 2030 threshold based on emissions for the land use-driven emission sectors in the CARB GHG Inventory. Construction emissions, when amortized², would equal approximately 47.8 MT CO₂e, which is equivalent to approximately 0.02 MT CO₂e/SP/Year. Therefore, the total annual GHG emissions at Project buildout would still yield approximately 4.62 MT CO₂e/SP/Year, after inclusion of the amortized construction emissions.

CONCLUSION

GHG emissions associated the proposed Project are above the derived GHG threshold, which may affect statewide GHG reduction goals. The proposed Project would generate GHG emissions, directly and indirectly, that would exceed the 2.62 MT CO₂e/SP/year in 2030 threshold based on emissions for the land use-driven emission sectors in the CARB GHG Inventory. Although the implementation of the mitigation measures presented in Section 3.3: Air Quality of this EIR would reduce the overall annual GHG emissions associated with the proposed Project, the proposed Project would be required to implement additional mitigation to ensure GHG emissions are reduced to below the applicable threshold. The proposed Project is required to implement Mitigation Measure 3.7-1 in an effort to reduce GHG emissions to the extent possible. However, even with implementation of all feasible mitigation, it may not be feasible for the Project to reduce greenhouse gas emissions at full Project buildout below the applicable threshold. Therefore, the proposed Project’s greenhouse gas emissions would be considered to have a **significant and unavoidable** impact.

¹ This estimate is based on the CalEEMod model’s per-dwelling unit (du) estimate for Single Family Residences of approximately 3.17 persons per Single Family Residential du, and a total Project Single Family Residences count of 827.

² The amortization period used for this calculation is 30 years.

MITIGATION MEASURE(S)

Mitigation Measure 3.7-1: *Prior to the approval of individual phases of development (i.e. final maps, improvement plans, site plan review, etc.), the Project applicant(s) shall coordinate with the SJVAPCD to ensure that the Project would not exceed the applicable SJVAPCD greenhouse gas thresholds for Project construction and operations. The intent is that each phase of development would demonstrate that the Project does not exceed the applicable SJVAPCD greenhouse gas pollutant thresholds for project operations or construction. If the SJVAPCD greenhouse gas pollutant thresholds are exceeded, the project applicant shall develop a reasonably feasible off-site mitigation strategy to reduce long-term air quality impacts to below the applicable SJVAPCD thresholds of significance. For example, this may consist of fee payments to the SJVAPCD for their use in funding offsite mitigation strategies. Each off-site mitigation strategy shall be developed with, and approved by, the SJVAPCD and the City of Manteca. Each off-site mitigation strategy is subject to the review and approval of the Air District and the City of Manteca on a phase-by-phase basis, and is intended to be in addition to offsets that are obtained through any on-site mitigation measures. The City of Manteca is required to verify each offsite mitigation strategy and its associated reductions to ensure that the associated greenhouse gas impacts are reduced to the maximum extent feasible (i.e. to below the applicable SJVAPCD thresholds of significance, at minimum). Examples of off-site mitigation strategies may include (but are not limited to) transportation demand management (TDM) measures and/or financial incentives for project employees to utilize alternative transportation options such as buses, bicycles, or electric vehicles. Measures may be designed in tandem with the mitigation requirements incorporated into Mitigation Measure 3.3-1 (see Section 3.3: Air Quality for further detail).*

Impact 3.7-2: Project implementation would not result in the inefficient, wasteful, or unnecessary use of energy resources (Less than Significant)

The 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 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 proposed Project includes a Tentative Subdivision Map for the Development Area that would ultimately be divided into four phases on a single tentative subdivision map. The tentative map would result in the subdivision of 161.19 acres into 827 residential lots and 10.87 acres of a centralized park (Lot F), plus 1.28 acres of levee access and pocket park (Lot G). Total parkland is

12.15 acres. In addition, there is open space provided in the form of frontage landscaping strips and a well site (approximately 1.54 acres).

The amount of energy used by the proposed Project during operation would directly correlate primarily with the amount of energy used by Project buildings and outdoor lighting, and the generation of vehicle trips associated with the proposed Project. Other Project energy uses include fuel used by vehicle trips generated during Project construction and operation, fuel used by off-road construction vehicles during construction activities, and fuel used by Project maintenance activities during Project operation. The following discussion provides a detailed calculation of energy usage expected for the proposed Project, as provided by applicable modelling software (i.e. CalEEMod v2016.3.2 and the CARB EMFAC2017). Additional assumptions and calculations are provided within Appendix B.3 of this EIR.

ELECTRICITY AND NATURAL GAS

Electricity and natural gas used by the proposed Project would be used primarily to generate energy for outdoor parking lot lighting. As shown in the following tables, “Energy” is one of the categories that was modeled for GHG emissions. The total unmitigated and mitigated GHG emissions generated from the “Energy” category is 2,039.4 CO₂e.

ON-ROAD VEHICLES (OPERATION)

The proposed Project would generate vehicle trips during its operational phase. A description of Project operational on-road mobile energy usage is provided below.

According to the Traffic Study prepared for the proposed Project (Fehr & Peers, 2021), and as described in more detail in Section 3.13 of this EIR, the Project would increase automobile VMT by approximately 7,807 new daily trips. In order to calculate operational on-road vehicle energy usage and emissions, De Novo Planning Group used fleet mix data from the CalEEMod (v2016.3.2) output for the proposed Project, Year 2030 gasoline and diesel MPG (miles per gallon) factors for individual vehicle classes as provided by EMFAC2017, weighted average MPG factors for gasoline and diesel were derived. Therefore, upon full buildout, the proposed Project would generate operational vehicle trips that would use a total of approximately 200 gallons of gasoline and 75 gallons of diesel per day, or 73,057 gallons of gasoline and 27,219 gallons of diesel per year.

ON-ROAD VEHICLES (CONSTRUCTION)

The proposed Project would also generate on-road vehicle trips during Project construction (from construction workers and vendors travelling to and from the Project site). De Novo Planning Group estimated the vehicle fuel consumed during these trips based the assumed construction schedule, vehicle trip lengths and number of workers per construction phase as provided by CalEEMod, and Year 2030 gasoline and diesel MPG factors provided by EMFAC2017 (year 2030 factors were used to represent a conservative analysis, as the energy efficiency of construction activities is anticipated to improve over time). For the sake of simplicity, it was assumed that all construction worker light duty passenger cars and truck trips use gasoline as a fuel source, and all medium and heavy-duty vendor trucks use diesel fuel. Table 3.7-5, below, describes gasoline and diesel fuel consumed during each

construction phase (in aggregate). As shown, the vast majority of on-road mobile vehicle fuel used during the construction of the proposed Project would occur during the building construction phase. There is no feasible mitigation available that would reduce on-road mobile vehicle GHG emissions generated by the Project construction activities (requiring the use of electric construction vehicles was deemed infeasible, given price and availability concerns). See Appendix B.3 of this EIR for a detailed accounting of construction on-road vehicle fuel usage estimates.

TABLE 3.7-5: ON-ROAD MOBILE FUEL GENERATED BY PROJECT CONSTRUCTION ACTIVITIES – BY PHASE

CONSTRUCTION PHASE	# OF DAYS	TOTAL DAILY WORKER TRIPS(A)	TOTAL DAILY VENDOR TRIPS(A)	TOTAL HAULER WORKER TRIPS(A)	TOTAL GALLONS OF GASOLINE FUEL(B)	TOTAL GALLONS OF DIESEL FUEL(B)
Demolition	23	15	0	27	182	97
Site Preparation	120	18	0	0	836	0
Grading	310	20	0	0	2,399	0
Paving	220	15	0	0	1,277	0
Building Construction	1,795	497	166	0	17,260	19,515
Architectural Coatings	2,105	99	0	0	4,032	0
Total	N/A	N/A	N/A	N/A	25,986	19,612

NOTE: (A) PROVIDED BY CALEEMOD OUTPUT. (B) SEE APPENDIX B.3 OF THIS EIR FOR FURTHER DETAIL

SOURCE: CALEEMOD (v.2016.3.2); EMFAC2017.

OFF-ROAD VEHICLES (CONSTRUCTION)

Off-road construction vehicles would use diesel fuel during the construction phase of the proposed Project. A non-exhaustive list of off-road constructive vehicles expected to be used during the construction phase of the proposed Project includes: forklifts, generator sets, tractors, excavators, and dozers. Based on the total amount of CO₂ emissions expected to be generated by the proposed Project (as provided by the CalEEMod output), and standard conversion factors (as provided by the U.S. Energy Information Administration), the proposed Project would use a total of approximately 103,865 gallons of diesel fuel for off-road construction vehicles. Detailed calculations are provided in Appendix B.3 of this EIR.

CONCLUSION

The proposed Project would use energy resources for the operation of Project buildings (natural gas and electricity), outdoor lighting (electricity), for on-road vehicle trips (e.g. gasoline and diesel fuel) rerouted by the proposed Project, and from off-road and on-road construction activities associated with the proposed Project (e.g. diesel fuel). Each of these activities would require the use of energy resources. The proposed Project would be responsible for conserving energy, to the extent feasible, and relies heavily on reducing per capita energy consumption to achieve this goal, including through statewide and local measures.

The proposed Project would be in compliance with all applicable federal, State, and local regulations regulating energy usage. For example, PG&E, the electric and natural gas provider to the proposed

Project, is responsible for the mix of energy resources used to provide electricity for its customers, and it is in the process of implementing the statewide RPS to increase the proportion of renewable energy (e.g. solar and wind) within its energy portfolio. PG&E has achieved at least a 33% mix of renewable energy resources in 2020 and is on track to achieve 60% mix of renewable energy by 2030. 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), would improve vehicle fuel economies, thereby conserving gasoline and diesel fuel. These energy savings would continue to accrue over time.

The proposed Project would comply with all existing energy standards and would not be expected to result in significant adverse impacts on energy resources. For these reasons, the proposed Project would not cause an inefficient, wasteful, or unnecessary use of energy resources nor cause a significant impact on any of the threshold as described by the *CEQA Guidelines*. This is a ***less than significant*** impact.

The purpose of this section is to disclose and analyze the potential impacts associated with hazards and hazardous materials related to the Project site and general vicinity, and to analyze the potential for exposure of people to hazards and hazardous materials as the Project is built and operated in the future. Information in this section is derived primarily from:

- *City of Manteca General Plan 2023* (City of Manteca as amended through 2016);
- *Manteca General Plan 2023 Draft Environmental Impact Report* (City of Manteca, 2003);
- *City of Manteca General Plan Update* (City of Manteca, 2021);
- *City of Manteca General Plan Update Draft Environmental Impact Report* (City of Manteca, 2021);
- *Phase 1 Environmental Site Assessment for the Machado Property* (CAC, January 2019).

One comment relevant to hazards and hazardous materials was received from the Central Valley Regional Water Quality Control Board (January 22, 2021) in response to the NOP. Full comments received are included in Appendix A.

3.8.1 ENVIRONMENTAL SETTING

PHYSICAL SETTING

Project Location

The Project site is located in the southwestern portion of the City of Manteca directly adjacent to the city limits. The Project site is immediately southwest of the intersection of Airport Way and Woodward Avenue. The Project site is bounded on the north by the City of Manteca city limits, on the east by Airport Way, on the south by an existing Reclamation District #2094 (RD2094) dry levee and existing agricultural fields, and on the west by the existing single-family residential subdivisions. Figures 2.0-1 and 2.0-2 found in Chapter 2.0 illustrate the regional location and Project vicinity.

Existing Site Uses

The Development Area is bordered on the north by Woodward Avenue, on the east by Airport Way, on the south by an existing Reclamation District #2094 (RD 2094) dry levee and existing agricultural fields, and on the west by the Terra Ranch Subdivision. The current uses on the Development Area are predominantly agricultural and undeveloped, except for two existing houses and barns and/or sheds with associated equipment in the northeastern portion of the site. Additionally, two dirt/gravel roadways bisect the Development Area, including one roadway running north to south down the center of the Development Area from Woodward Avenue to the southern boundary and another running east to west from Airport Avenue connecting to the dirt/gravel roadway in the center of the Development Area. A South San Joaquin Irrigation District (SSJID) pipeline exists within the Development Area. An RD 2094 dry levee makes up a portion of the southern property line. This dryland levee is not intended to hold floodwaters from the south (upstream), instead it is intended to contain flows on RD 2094 and RD 2096 in the event of a breach of levees along RD 2094, RD 2096, or RD 17. It is noted that the Annexation Area is located within the RD 17 boundary.

3.8 HAZARDS AND HAZARDOUS MATERIALS

Non-development Area 1 includes six existing residential homes just north of the Development Area and Woodward Avenue.

Non-development Area 2 includes nine existing residential homes just north of Woodward Avenue, and west of Airport Way.

Existing Surrounding Uses

The Project site is surrounded by a variety of agricultural and residential land uses. Uses immediately south of the Project site include agricultural and residential uses, including ranchettes and large estates lots. Residential subdivisions are located to the north and east of the Project site, including the Terra Ranch Subdivision which borders the Development Area on the west. Existing uses to the east of the Project site include a residential subdivision north of Woodward Avenue and agricultural and rural residential uses south of Woodward Avenue.

Site Topography

The Project site is relatively flat with natural gentle slope from south to north. The Project site topography ranges in elevation from approximately 19 to 24 feet above sea level as shown in Figure 2.0-3.

HAZARDS ASSESSMENT

For the purposes of this EIR, “hazardous material” is defined as provided in California Health & Safety Code, Section 25501:

- Any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment.

“Hazardous materials” include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

“Hazardous waste” is a subset of hazardous materials. For the purposes of this EIR, the definition of hazardous waste is essentially the same as that in the California Health & Safety Code, Section 25517, and in the California Code of Regulations (CCR), Title 22, Section 66261.2:

- Hazardous wastes are wastes that, because of their quantity, concentration, physical, chemical, or infectious characteristics, may either cause, or significantly contribute to, an increase in mortality or an increase in serious illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

CCR Title 22 categorizes hazardous waste into hazard classes according to specific characteristics of ignitability, corrosivity, reactivity, or toxicity. Hazardous waste with any of these characteristics is also known as a Resource Conservation and Recovery Act (RCRA) waste.

Hazardous materials can be categorized as hazardous non-radioactive chemical materials, radioactive materials, toxic materials, and biohazardous materials. The previous definitions are adequate for non-radioactive hazardous chemicals. Radioactive and biohazardous materials are further defined as follows:

- Radioactive materials contain atoms with unstable nuclei that spontaneously emit ionizing radiation to increase their stability.
- Radioactive wastes are radioactive materials that are discarded (including wastes in storage) or abandoned.
- Toxic wastes are harmful or fatal when ingested or absorbed (e.g., containing mercury, lead). When toxic wastes are land disposed, contaminated liquid may leach from the waste and pollute groundwater.
- Biohazardous materials include materials containing certain infectious agents (microorganisms, bacteria, molds, parasites, and viruses) that cause or significantly contribute to increased human mortality or organisms capable of being communicated by invading and multiplying in body tissues.
- Medical wastes include both biohazardous wastes (byproducts of biohazardous materials) and sharps (devices capable of cutting or piercing, such as hypodermic needles, razor blades, and broken glass) resulting from the diagnosis, treatment, or immunization of human beings, or research pertaining to these activities.

There are a number of hazardous materials and hazardous wastes that could be found on any given property based on past uses. Some common examples include agrichemicals (chlorinated herbicides, organophosphate pesticides, and organochlorine pesticides, such as such as Mecoprop (MCP), Dinoseb, chlordane, dichloro-diphenyltrichloroethane (DDT), and dichloro-diphenyl-dichloroethylene (DDE)), petroleum based products (oil, gasoline, diesel fuel), a variety of chemicals including paints, cleaners, and solvents, and asbestos-containing or lead-containing materials (e.g., paint, sealants, pipe solder).

Adjoining Properties

The Development Area is bounded on the north by single-family residences, across Woodward Avenue, on the east by agricultural land and rural residences, on the south by agricultural land and rural residences, and on the west by agricultural land and rural residences.

Site Reconnaissance

A Phase 1 Environmental Site Assessment (ESA) was prepared for the Project site in order to identify and review commonly known or reasonably ascertainable information about the Project site that is relevant to evaluating the presence of recognized environmental conditions (REC). A REC refers to the presence or potential presence of any hazardous substances within the Project site. Site reconnaissance was conducted in January 2019. According to the Phase 1 ESA, the Development Area was observed to be currently used for agricultural and rural residential uses. The general vicinity of the Project site was primarily developed with single family residences, including the Non-Development Area. At the time of the site reconnaissance, the Development Area was occupied by

3.8 HAZARDS AND HAZARDOUS MATERIALS

two small single-family homes and two small sheds or shacks. There is at least one irrigation well and one potable water supply well within the Development Area. Sources of hazardous materials or petroleum substances at the Development Area were not observed and there is no evidence of past or current generation of hazardous waste observed at the Development Area. No evidence of aboveground storage or underground storage tanks (USTs) were observed within the Development Area.

According to the Phase I ESA, no hazardous waste, aboveground storage tanks, underground storage tanks, unusual or noxious odors, pools of liquid, PCB-suspect hydraulic systems, stained pavement, distressed wells, indications of dumping, or other conditions of concern were identified. However, there are reportedly two septic systems associated with the residences located within the Development Area.

Historical information was reviewed to develop a history of the previous uses on the Project site and surrounding area, in order to evaluate the Project site and adjoining properties for evidence of Recognized Environmental Conditions (RECs). Standard historical sources reviewed during the preparation of this report included the following, as available: Aerial Photographs, Interviews, Environmental Records, and Databases.

AERIAL PHOTOGRAPHS

Aerial photographs of the Project site and general vicinity were reviewed. Based on a review of historic maps from 1914 and aerial photographs from as early as 1937, the Project site has been vacant and/or used for agricultural production. The irrigation ditch running through the Project site and pump were observed as early as 1940. The residential structures as well as a larger structure (possibly a barn) were identified in the northeast corner of the Project site as early as 1937. As of 1968, the Project site remained in use for agricultural production. The larger structures identified earlier had been removed and only the existing residential structures remained after 1968. No other significant changes were observed. Based on a review of historic maps and aerial photographs, the vicinity of the Project site was generally vacant and/or used for agricultural production from sometime between 1914 and 2006. There was a structure labeled "Rustic School" located adjacent to the southeast corner of the Site. The Rustic School appeared to be a single structure and remained in-place through 1996. The other adjacent land was occupied by farms and rural residences. The initial single-family residential development was observed to the north of the Project site (across Woodward Avenue) in 2006. Several rural residences were also constructed in the vicinity, but generally the use of the area remains farms and rural residences.

INTERVIEWS

As part of the Phase I ESA, interviews were conducted with representatives of the project and local governmental officials within the Community Development and Environmental Health Department of San Joaquin and the City of Manteca regarding current and past uses of the Site to determine whether RECs may exist on the Project site or are associated with nearby sites and are considered to have a potential to adversely impact the Project site. Interviews with project representatives and government officials indicated that they were not aware of any pending, threatened, or past

litigation relevant to hazardous substances or petroleum products in, on, or from the Site, administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the Site; or notices from a governmental entity regarding violations of environmental laws or liability relating to hazardous substances or petroleum products. However, Ms. Kimbrough, the project representative, indicated that she recalled the family applying Round-up (for weed control) and UAN32 (Nitrogen) to the corn crops in the spring and summer. Ms. Teddie Hernandez of the San Joaquin County Community Development Department was contacted regarding historic permits for the Site. Ms. Hernandez indicated that the Site had permits issued for 20329 South Airport Way for re-roofing in 1993 and 1987. Additionally, a permit was issued for exploratory oil and gas drilling in 1981. Mr. Jeff Wong of the San Joaquin County Environmental Health Department indicated that a permit was issued for geotechnical borings at the Site in 2013. The borings were advanced in anticipation of potential development at the Project site. The borings identified groundwater at a depth of between 10 and 15-feet . A permit was also issued in 2013 for the replacement of an irrigation well pump. Mr. Wong indicated that there was no documented evidence of existing or previous hazardous materials storage or use at the Site.

ENVIRONMENTAL RECORDS

A search of local, State, and federal agency databases for the Project site and known contaminated sites in the vicinity was performed. None of the parcels in the Project site were found to contain any known contamination.

The U.S. Environmental Protection Agency (EPA) Toxic Release Inventory (TRI) does not identify data on disposal or other releases of toxic chemicals in the Project site (USEPA, 2015). There are no TRI sites in the City of Manteca. The nearest TRI site is located at 16777 Howland Road in Lathrop, approximately 2.52 miles northwest of the Project site.

The California Department of Toxic Substances Control (DTSC) maintains the *Envirostor Data Management System*, which provides information on hazardous waste facilities (both permitted and corrective action) as well as any available site cleanup information. There are no sites listed in the Envirostor database within the Project site. The nearest site listed on the Envirostor database is located at 21164 S Airport Way, approximately 0.28 miles southeast of the Project site. This site, the proposed elementary school, was investigated for potential contaminants of concern. The investigation concluded that there are no contaminants of concern at the proposed elementary school site and the site received a “No Further Action” cleanup status on February 20, 2020.

GeoTracker is the State Water Resources Control Board’s (SWRCB’s) Internet-accessible database system used by the SWRCB, regional boards, and local agencies to track and archive compliance data from authorized or unauthorized discharges of waste to land, or unauthorized releases of hazardous substances from underground storage tanks (USTs). See Table 3.8-1 for the site identified by the GeoTracker database within 0.5 miles of the Project site.

3.8 HAZARDS AND HAZARDOUS MATERIALS

TABLE 3.8-1: GEOTRACKER HAZARDOUS MATERIAL RELEASE SITES WITHIN 0.5 MILES OF PROJECT SITE

SITE NAME	TYPE	CLEANUP STATUS	ADDRESS
Sundance Subdivision Units 2 and 3	Cleanup Program Site	Completed – Case Closed	1633 West Woodward Ave.

SOURCE: SWRCB, GEOTRACKER, 2021.

The State of California Hazardous Waste and Substances Site List (also known as the “Cortese List”) is a planning document used by the State, local agencies, and developers to comply with the California Environmental Quality Act (CEQA) requirements for providing information about the location of hazardous materials sites. Government Code Section 65962.5 requires the Cal EPA to annually update the Cortese List. The DTSC is responsible for preparing a portion of the information that comprises the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information that is part of the complete list.

GeoTracker is a geographic information system (GIS) that provides online access to environmental data and is the interface to the Geographic Environmental Information Management System (GEIMS), a data warehouse which tracks regulatory data about underground fuel tanks, fuel pipelines, and public drinking water supplies. Searches of the above resources and records identified three hazardous material sites within 0.5 miles of the Project site known to handle and store hazardous materials that are associated with a hazardous material related release or occurrence. The terms “release” or “occurrence” include any means by which a substance could harm the environment: by spilling, leaking, discharging, dumping, injecting, or escaping. Table 3.8-1 displays the hazardous material sites within 0.5 miles of the Project site with a description of the hazards provided. Additionally, Table 3.8-2 displays the known hazardous material sites within 1.0 mile of the Project site with a description of the hazards provided. As noted previously, none of the parcels in the Project site were found to contain any known contamination. One open case, the Frank’s One Stop LUST cleanup site, is located approximately 1.0 north of the project site.

In addition to sites listed below, the Project site and the surrounding areas do not contain identified oil and gas monitoring wells.

TABLE 3.8-2: GEOTRACKER HAZARDOUS MATERIAL RELEASE SITES WITHIN 1.0 MILE OF PROJECT SITE

SITE NAME	TYPE	CLEANUP STATUS	ADDRESS
Sundance Subdivision Units 2 and 3	LUST Cleanup Site	Completed – Case Closed	1633 West Woodward Ave
Karlson Bros Trucking	LUST Cleanup Site	Completed – Case Closed	23675 Airport Way
Tuff Boy Trailers	LUST Cleanup Site	Completed – Case Closed	5151 Almondwood Dr
Frank’s One Stop	LUST Cleanup Site	Open – Verification Monitoring	2072 Yosemite Ave
Jackpot Food Mart	LUST Cleanup Site	Completed – Case Closed	1434 Yosemite Ave
ABF Freight	LUST Cleanup Site	Completed – Case Closed	2427 Yosemite Ave
TED Peters Trucking	LUST Cleanup Site	Completed – Case Closed	1985 Yosemite Ave
PG&E Transformer Release	Cleanup Program Site	Completed – Case Closed	2978 W. Yosemite Ave

NOTE: LUST = LEAKING UNDERGROUND STORAGE TANK.

SOURCE: SWRCB, GEOTRACKER, 2021.

DATABASES

There is a broad list of federal and State databases that provide information for sites with varying potential for risk from the possible existence of hazardous materials. There are numerous redundancies among these various database listings. Below is a brief summary of each.

National Priorities List: The National Priorities List (NPL) of Superfund Sites and Proposed NPL Sites is EPA's database of more than 1,200 sites designated or proposed for priority cleanup under the Superfund program. NPL sites may encompass relatively large areas. The Project site is not listed in this database.

RCRIS System: The Resource Conservation and Recovery Information System (RCRIS) is an EPA database that includes selective information on sites that generate, transport, store, treat, and/or dispose of hazardous waste as defined by RCRA. Identification on this list does not indicate that there has been an impact on the environment. The Project site is not listed in this database.

CERCLIS Data: Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) is an EPA database that contains information on potential hazardous waste sites that have been reported to the EPA by states, municipalities, private companies, and individuals, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites that are either proposed for or on the NPL, as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The Project site is not listed in this database.

CORRACTS: Corrective Action Report (CORRACTS) is an EPA database that identifies hazardous waste handlers with RCRA corrective action activity. The Project site is not listed in this database.

Cortese Database: The Cortese database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with USTs having a reportable release, and all solid waste disposal facilities from which there is known hazardous substance migration. The source of this database is the California Environmental Protection Agency (Cal-EPA) and are found in the GeoTracker database. The Project site is not listed in this database.

GeoTracker has replaced past databases, such as the Leaking Underground Storage Tank Information System (LUSTIS) and the Underground Storage Tank (UST) database. Permitted USTs are not located in the Project site.

Solid Waste Information System (SWIS): The Solid Waste Information System (SWIS) is a database of solid waste facilities that is maintained by the California Integrated Waste Management Board (CIWMB). The SWIS data identifies active, planned and closed sites. The Project site does not have any active or planned solid waste facilities listed in the database. The nearest active facility, Lovelace Materials Recovery Facility, is located approximately 5.0 miles north of the Project site.

None of the records reviewed for the Project site indicate that a Recognized Environmental Condition is associated with the Project site.

Transportation of Hazardous Materials

The transportation of hazardous materials within the City of Manteca Planning Area is subject to various federal, State, and local regulations. The following provisions are included in the California Vehicle Code (CVC) and pertain to the transportation of hazardous related materials.

- The Highway Patrol designates the routes in California which are to be used for the transportation of explosives. (Section 31616)
- The CVC applies when the explosives are transported as a delivery service for hire or in quantities in excess of 1,000 pounds. The transportation of explosives in quantities of 1,000 pounds or less, or other than on a public highway, is subject to the California Health and Safety Code. (Section 31601(a))
- It is illegal to transport explosives or inhalation hazards on any public highway not designated for that purpose, unless the use of the highway is required to permit delivery of, or the loading of, such materials. (Section 31602(b) and Section 32104(a))
- When transporting explosives through or into a city for which a route has not been designated by the Highway Patrol, drivers must follow routes as may be prescribed or established by local authorities. (Section 31614(a))
- Inhalation hazards and poison gases are subject to additional safeguards. These materials are highly toxic, spread rapidly, and require rapid and widespread evacuation if there is loss of containment or a fire. The Highway Patrol designates through routes to be used for the transportation of inhalation hazards. It may also designate separate through routes for the transportation of inhalation hazards composed of any chemical rocket propellant. (Section 32100 and Section 32102(b))

In addition to area roadways, hazardous materials are routinely transported on Union Pacific Railroad lines that are roughly two-miles northeast of the Project boundary. The risk of accidents, and more specifically accidents involving hazardous materials, is relatively low. The U.S. Department of Transportation Federal Railroad Administration found the UPRR company train accident rate to be 4.18 train accidents per one million train miles traveled, resulting in a less than 0.001% chance of an accident. Risk of a railroad accident containing hazardous materials is considered much lower, as only an average of eight accidents involving hazardous material spills occur annually in California.

The Union Pacific Railroad Company implements a security plan in compliance with the Department of Transportation Final Rule 49 CFR Part 172 Hazardous Materials (HM 232): Security Requirements for Offerors and Transporters of Hazardous Materials. The plan includes requirements to enhance the security of transported hazardous materials and ensures proper cleanup procedures in the instance of an accidental release.

FIRE HAZARDS

Wild fires are a major hazard in the State of California. Wild fires burn natural vegetation on developed and undeveloped lands and include timber, brush, woodland, and grass fires. While low intensity wild fires have a role in the County's ecosystem, wild fires put human health and safety, structures (e.g., homes, schools, businesses, etc.), air quality, recreation areas, water quality, wildlife habitat and ecosystem health, and forest resources at risk.

Wildland fire hazards exist in varying degrees in the foothill portion of the County located to the east and southwest of the Project site. The Project site is located in the valley floor, which is predominantly under agricultural or urban use. This area has a low fire hazard risk.

Fuel Rank

Fuel rank is a ranking system developed by the California Department of Forestry and Fire Protection (CalFire) that incorporates four wildfire factors: fuel model, slope, ladder index, and crown index.

The U.S. Forest Service has developed a series of fuel models, which categorize fuels based on burn characteristics. These fuel models help predict fire behavior. In addition to fuel characteristics, slope is an important contributor to fire hazard levels. A surface ranking system has been developed by CalFire, which incorporates the applicable fuel models and slope data. The model categorizes slope into six ranges: 0-10 percent, 11-25 percent, 26-40 percent, 41-55 percent, 56-75 percent, and over 75 percent. The combined fuel model and slope data are organized into three categories, referred to as surface rank. Thus, surface rank is a reflection of the quantity and burn characteristics of the fuels and the topography in a given area.

The ladder index is a reflection of the distance from the ground to the lowest leafy vegetation for tree and plant species. The crown index is a reflection of the quantity of leafy vegetation present within individual specimens of a given species.

The surface rank, ladder index, and crown index for a given area are combined in order to establish fuel rank of medium, high, or very high. Fuel rank is used by CalFire to identify areas in the California Fire Plan where large, catastrophic fires are most likely.

The City of Manteca contains areas with “moderate” and “non-wildland fuel” ranks. The areas warranting “moderate” fuel ranks possess combustible material in sufficient quantities combined with topographic characteristics that pose a wildfire risk. CalFire data for the areas immediately surrounding the city also include “moderate” and “non-wildland fuel” ranks. Areas west of Interstate 5, approximately 15 miles or further southwest of the city, are designated as “moderate” and “high” fuel ranks. The Project site is located within an area considered “moderate” fuel rank.

Fire Hazard Severity Zones

The State has charged CalFire with the identification of Fire Hazard Severity Zones (FHSZ) within State Responsibility Areas. In addition, CalFire must recommend Very High Fire Hazard Severity Zones (VHFHSZ) identified within any Local Responsibility Areas. The FHSZ maps are used by the State Fire Marshall as a basis for the adoption of applicable building code standards.

LOCAL RESPONSIBILITY AREAS

The Project site is not located within a Local Responsibility Area (LRA). The Project site is not categorized as a "Very High" FHSZ by CalFire.

3.8 HAZARDS AND HAZARDOUS MATERIALS

STATE RESPONSIBILITY AREAS

There are no State Responsibility Areas (SRAs) within the vicinity of the Project site.

FEDERAL RESPONSIBILITY AREAS

There are no Federal Responsibility Areas (FRAs) within the vicinity of the Project site.

3.8.2 REGULATORY SETTING

FEDERAL

Aviation Act of 1958

The Federal Aviation Act resulted in the creation of the Federal Aviation Administration (FAA). The FAA is charged with the creation and maintenance of a National Airspace System.

Federal Aviation Regulations (CFR, Title 14)

The Federal Aviation Regulation (FAR) establishes regulations related to aircraft, aeronautics, and inspection and permitting.

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.

Clean Water Act

The Clean Water Act (CWA), which amended the Water Pollution Control Act (WPCA) of 1972, sets forth the §404 program to regulate the discharge of dredged and fill material into Waters of the U.S. and the §402 National Pollutant Discharge Elimination System (NPDES) to regulate the discharge of pollutants into Waters of the U.S. The §401 Water Quality Certification program establishes a framework of water quality protection for activities requiring a variety of Federal permits and approvals (including CWA §404, CWA §402, FERC Hydropower and §10 Rivers and Harbors).

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) introduced active Federal involvement to emergency response, site remediation, and spill prevention, most notably the Superfund program. The Act was intended to be comprehensive in encompassing both the prevention of, and response to, uncontrolled hazardous material releases. CERCLA deals with environmental response, providing mechanisms for reacting to emergencies and to chronic hazardous material releases. In addition to establishing procedures to prevent and remedy problems, it establishes a system for compensating appropriate individuals and assigning

appropriate liability. It is designed to plan for and respond to failure in other regulatory programs and to remedy problems resulting from action taken before the era of comprehensive regulatory protection.

Environmental Protection Agency

The primary regulator of hazards and hazardous materials is the EPA, whose mission is to protect human health and the environment. The City of Manteca is located within EPA Region 9, which includes Arizona, California, Hawaii, and New Mexico.

FY 2001 Appropriations Act

Title IV of the Appropriations Act required the identification of “Urban Wildland Interface Communities in the Vicinity of Federal Lands that are at High Risk from Wildfire” by the U.S. Departments of the Interior and Agriculture.

Hazardous Materials Transportation Act

The Hazardous Materials Transportation Act, as amended, is the basic statute regulating hazardous materials transportation in the United States. The purpose of the law is to provide adequate protection against the risks to life and property inherent in transporting hazardous materials in interstate commerce. This law gives the U.S. Department of Transportation (USDOT) and other agencies the authority to issue and enforce rules and regulations governing the safe transportation of hazardous materials (DOE 2002).

Natural Gas Pipeline Safety Act

The Natural Gas Pipeline Safety Act authorizes the U.S. Department of Transportation Office of Pipeline Safety to regulate pipeline transportation of natural (flammable, toxic, or corrosive) gas and other gases as well as the transportation and storage of liquefied natural gas. The Office of Pipeline Safety regulates the design, construction, inspection, testing, operation, and maintenance of pipeline facilities. While the federal government is primarily responsible for developing, issuing, and enforcing pipeline safety regulations, the pipeline safety statutes provide for State assumption of the intrastate regulatory, inspection, and enforcement responsibilities under an annual certification. To qualify for certification, a state must adopt the minimum federal regulations and may adopt additional or more stringent regulations as long as they are not incompatible.

Resource Conservation and Recovery Act

The 1976 Federal Resource Conservation and Recovery Act (RCRA) and the 1984 RCRA Amendments regulate the treatment, storage, and disposal of hazardous and non-hazardous wastes. The legislation mandated that hazardous wastes be tracked from the point of generation to their ultimate fate in the environment. This includes detailed tracking of hazardous materials during transport and permitting of hazardous material handling facilities.

The 1984 RCRA amendments provided the framework for a regulatory program designed to prevent releases from USTs. The program established tank and leak detection standards, including spill and overflow protection devices for new tanks. The tanks must also meet performance standards to

ensure that the stored material will not corrode the tanks. The RCRA was further amended in 1988 to set additional standards for USTs.

In July 2015, the EPA revised the federal UST regulation, which strengthened the 1988 federal UST regulations by increasing emphasis on properly operating and maintaining UST equipment. The revision added new operation and maintenance requirements and addressed UST systems deferred in the 1988 UST regulation. The purpose of the revision was to help prevent and detect UST releases, which are a leading source of groundwater contamination. To ensure compliance performance measures reflect the 2015 UST regulation, the Environmental Protection Agency (EPA) and the Association of State and Territorial Solid Waste Management Officials coordinated to update existing compliance performance measures and add new measures. The measures required states to switch from tracking compliance against significant operational compliance measures to the more stringent technical compliance rate (TCR) measures. As of June 2020, only 45.6 percent of USTs were in compliance with all TCR categories¹.

Comprehensive Environmental Response, Compensation, and Liability Act

CERCLA introduced active federal involvement to emergency response, site remediation, and spill prevention, most notably the Superfund program. CERCLA was intended to be comprehensive in encompassing both the prevention of, and response to, uncontrolled hazardous substances releases. CERCLA deals with environmental response, providing mechanisms for reacting to emergencies and to chronic hazardous material releases. In addition to establishing procedures to prevent and remedy problems, it establishes a system for compensating appropriate individuals and assigning appropriate liability. It is designed to plan for and respond to failure in other regulatory programs and to remedy problems resulting from action taken before the era of comprehensive regulatory protection.

STATE

Aeronautics Act (Public Utilities Code §21001)

The Caltrans Division of Aeronautics bases the majority of its aviation policies on the Aeronautics Act. Policies include permits and annual inspections for public airports and hospital heliports and recommendations for schools proposed within two miles of airport runways.

Airport Land Use Commission Law (Public Utilities Code §21670 et seq.)

The law, passed in 1967, authorized the creation of Airport Land Use Commissions (ALUC) in California. Per the Public Utilities Code, the purpose of an ALUC is to protect *public health, safety, and welfare by encouraging orderly expansion of airports and the adoption of land use measures that minimizes exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses* (Pub. Util. Code §21670).

¹ EPA. *Semiannual Report of UST Performance Measures Mid Fiscal Year 2020*. June 2020. Access: <https://www.epa.gov/sites/production/files/2020-06/documents/ca-20-12.pdf>

Furthermore, each ALUC must prepare an ALUCP. Each ALUCP, which must be based on a twenty-year planning horizon, should focus on broadly defined noise and safety impacts.

Assembly Bill 337

Per AB 337, local fire prevention authorities and CalFire are required to identify Very High Fire Hazard Severity Zones (VHFHSZ) in LRAs. Standards related to brush clearance and the use of fire-resistant materials in fire hazard severity zones are also established.

California Code of Regulations

Title 3 of the California Code of Regulations (CCR) pertains to the application of pesticides and related chemicals. Parties applying regulated substances must continuously evaluate application equipment, the weather, the treated lands and all surrounding properties. Title 3 prohibits any application that would:

- Contaminate persons not involved in the application;
- Damage non-target crops or animals or any other public or private property; and
- Contaminate public or private property or create health hazards on said property.

Title 8 of the CCR establishes California Occupational Safety and Health Administration (Cal OSHA) requirements related to public and worker protection. Topics addressed in Title 8 include materials exposure limits, equipment requirements, protective clothing, hazardous materials, and accident prevention. Construction safety and exposure standards for lead and asbestos are set forth in Title 8.

Title 14 of the CCR establishes minimum standards for solid waste handling and disposal.

Title 17 of the CCR establishes regulations relating to the use and disturbance of materials containing naturally occurring asbestos.

Title 19 of the CCR establishes a variety of emergency fire response, fire prevention, and construction and construction materials standards.

Title 22 of the CCR sets forth definitions of hazardous waste and special waste. The section also identifies hazardous waste criteria and establishes regulations pertaining to the storage, transport, and disposal of hazardous waste.

Title 26 of the CCR is a medley of State regulations pertaining to hazardous materials and waste that are presented in other regulatory sections. Title 26 mandates specific management criteria related to hazardous materials identification, packaging, and disposal. In addition, Title 26 establishes requirements for hazardous materials transport, containment, treatment, and disposal. Finally, staff training standards are set forth in Title 26.

Title 27 of the CCR sets forth a variety of regulations relating to the construction, operation, and maintenance of the state's landfills. The title establishes a landfill classification system and categories of waste. Each class of landfill is constructed to contain specific types of waste (household, inert, special, and hazardous).

California Government Code Section 65302

This section, which establishes standards for developing and updating General Plans, includes fire hazard assessment and Safety Element content requirements.

California Health and Safety Code

Division 11 of the Health and Safety Code establishes regulations related to a variety of explosive substances and devices, including high explosives and fireworks. Section 12000 et seq. establishes regulations related to explosives and explosive devices, including permitting, handling, storage, and transport (in quantities greater than 1,000 pounds).

Division 12 establishes requirements for buildings used by the public, including essential services buildings, earthquake hazard mitigation technologies, school buildings, and postsecondary buildings.

Division 20 establishes DTSC authority and sets forth hazardous waste and underground storage tank regulations. In addition, the division creates a State superfund framework that mirrors the Federal program.

Division 26 establishes California Air Resources Board (CARB) authority. The division designates CARB as the air pollution control agency per Federal regulations and charges the Board with meeting Clean Air Act requirements.

California Health and Safety Code and Uniform Building Code Section 13000 et seq.

State fire regulations are set forth in §13000 et seq. of the California Health and Safety Code, which is divided into “Fires and Fire Protection” and “Buildings Used by the Public.” The regulations provide for the enforcement of the Uniform Building Code and mandate the abatement of fire hazards.

The code establishes broadly applicable regulations, such as standards for buildings and fire protection devices, in addition to regulations for specific land uses, such as childcare facilities and high-rise structures.

California Vehicle Code §31600 (Transportation of Explosives)

This code establishes requirements related to the transportation of explosives in quantities greater than 1,000 pounds, including licensing and route identification.

California Public Resources Code

The State’s Fire Safety Regulations are set forth in Public Resources Code §4290, which include the establishment of SRAs.

Public Resources Code §4291 sets forth defensible space requirements, which are applicable to anyone who “...owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land that is covered with flammable material” (§4291(a)).

Food and Agriculture Code

Division 6 of the California Food and Agriculture Code (FAC) establishes pesticide application regulations. The division establishes training standards for pilots conducting aerial applications as well as permitting and certification requirements.

State Oversight of Hazards and Hazardous Materials

The DTSC is chiefly responsible for regulating the handling, use, and disposal of toxic materials. The State Water Resources Control Board (SWRCB) regulates discharge of potentially hazardous materials to waterways and aquifers and administers the basin plans for groundwater resources in the various regions of the state. The RWQCB oversees surface and groundwater. Programs intended to protect workers from exposure to hazardous materials and from accidental upset are covered under OSHA at the Federal and California Division of Occupational Safety and Health (Cal/OSHA) and the California Department of Health Services (DHS) at the state level. Air quality is regulated through the CARB and San Joaquin Valley Air Pollution Control District. The State Fire Marshal is responsible for the protection of life and property through the development and application of fire prevention engineering, education, and enforcement; CalFire provides fire protection services for State and privately-owned wildlands.

Water Code

Division 7 of the California Water Code, commonly referred to as the Porter-Cologne Water Quality Control Act, created the SWRCB and the RWQCB. In addition, water quality responsibilities are established for the SWRCB and RWQCBs.

LOCAL

CITY OF MANTECA GENERAL PLAN

Policies: Hazardous Materials Safety

- S-P-15. The City shall maintain an awareness of hazardous materials throughout the Manteca region.
- S-P-16. City approvals of all new development shall consider the potential for the production, use, storage, and transport of hazardous materials and provide for reasonable controls on such hazardous materials.
- S-P-17. Within its authority, the City shall regulate the production, use, storage, and transport of hazardous materials to protect the health of Manteca residents.

Implementation: Hazardous Materials Safety

- S-I-9. The City shall require businesses that manufacture, store, use, or transport significant quantities of hazardous materials to identify annually such materials and their quantities.
- S-I-10. The City shall require the submittal of lists of hazardous materials used in existing and proposed industrial and commercial businesses within the City of Manteca. The list shall be maintained through the Manteca Fire Department and updated through periodic review.

3.8 HAZARDS AND HAZARDOUS MATERIALS

- S-I-11. The City shall work with San Joaquin County and other public agencies to inform consumers about household use and disposal of hazardous materials.
- S-I-12. Cooperate fully with Union Pacific Railroad and other agencies, such as the CHP, in the event of a hazardous material emergency.
- S-I-13. Continue the City hazardous waste pick-up program for household hazardous materials.

Policies: Emergency Procedures

- S-P-19. The City shall maintain and periodically update the City's Emergency Plan.

Implementation Policies: Emergency Procedures

- S-I-15. The City shall conduct periodic emergency response exercises to test the effectiveness of City emergency response procedures.
- S-I-16. The City shall review County and State emergency response procedures that must be coordinated with City procedures.

GENERAL PLAN UPDATE (PROPOSED)

Policies: Safety Element

- S-1.1. Maintain and periodically update the City's Emergency Plan.
- S-1.2. Ensure the availability and functionality of critical facilities during flooding events.
- S-1.3. Locate new critical City facilities, and promote the location of non-City critical facilities, including hospitals, emergency shelters, emergency response centers, and emergency communications facilities, outside of flood hazard zones and geologic hazard areas where feasible. Critical facilities that are, or must be, located within flood hazard zones or areas with geologic hazards should incorporate feasible site design or building construction features to mitigate potential risks, including those associated with geologic, seismic, and flood events, to ensure accessibility, operation, and structural integrity, during an emergency and to minimize damage to the facility.
- S-1.4. Encourage community awareness of seismic, flooding, and other disaster safety issues, including building safety, emergency response plans, and understanding steps to take for safety during and after a disaster, including identified evacuation routes.
- S-1.5. Continue to cooperate with San Joaquin County and other public agencies in implementing the Countywide Emergency Preparedness Plan and Local Hazard Mitigation Plan.
- S-4.1. Maintain an awareness of hazardous materials throughout the Manteca region.
- S-4.2. Strictly regulate the production, use, storage, transport, and disposal of hazardous materials to protect the health and safety of Manteca residents.
- S-4.3. As part of the development review process, consider the potential for the production, use, storage, transport, and/or disposal of hazardous materials and provide for appropriate controls on such hazardous materials consistent with federal, state, and local standards.

- S-4.4. Use the environmental review process to comment on Hazardous Waste Transportation, Storage and Disposal Facilities proposed in the Manteca Planning Area and throughout the County to request a risk assessment and ensure that potentially significant, widespread, and long-term impacts on public health and safety of these facilities are identified and mitigated, as such impacts do not respect jurisdictional boundaries.

Implementation: Safety Element

- S-1a. Regularly conduct periodic emergency response exercises to test the effectiveness of City emergency response procedures.
- S-1b. Regularly review County and State emergency response procedures that must be coordinated with City procedures.
- S-1c. Cooperate with San Joaquin County OES, Manteca Fire Department, Lathrop Manteca Fire District, Manteca Police Services, the reclamation districts, and other agencies with responsibility for emergency management in emergency response planning, training and provision of logistical support.
- S-4a. As part of the development review process, require projects that result in significant risks associated with hazardous materials to include measures to address the risks and reduce the risks to an acceptable level.
- S-4b. Review development proposals to address proximity of users and transporters of significant amounts of hazardous materials relative to sensitive uses, such as schools and residential neighborhoods.
- S-4c. Continue to require the submittal of information regarding hazardous materials manufacturing, storage, use, transport, and/or disposal by existing and proposed businesses and developments to the Manteca Fire Department.
- S-4d. Annually coordinate with the Manteca Fire Department and 911 dispatch center to ensure that the City maintains a current database of hazardous materials.
- S-4e. Coordinate with the Manteca Fire Department, other local agencies, and Union Pacific Railroad to strictly regulate and enforce the use, storage, transport, and/or disposal of hazardous materials under California Administrative Code Title 19 requirements.
- S-4f. Continue to work with San Joaquin County and other public agencies to inform consumers about household use and disposal of hazardous materials.
- S-4g. Cooperate fully with Union Pacific Railroad and other agencies, such as the California Highway Patrol, in the event of a hazardous material emergency.
- S-4h. Continue the City hazardous waste pick-up program for household hazardous materials.

Certified Unified Program Agency (CUPA)

The California Environmental Protection Agency designates specific local agencies as Certified Unified Program Agencies (CUPA), typically at the county level. The San Joaquin County Department of Environmental Health is the CUPA designated for San Joaquin County. The San Joaquin County Department of Environmental Health is responsible for the implementation of statewide programs within its jurisdiction, including: Underground storage of hazardous substances (USTs), Hazardous

Materials Business Plan (HMP) requirements, California Accidental Release Prevention (Cal-ARP) program, etc. Implementation of these programs involves permitting, inspecting, providing education/guidance, investigations, and enforcement.

San Joaquin Valley Air Pollution Control District

San Joaquin Valley Air Pollution Control District (SJVAPCD) has jurisdiction over the City of Manteca and deals with pollutants that get into the air from stationary (including fumes, dust and smoke, some asbestos) and mobile sources. SJVAPCD's mission is to improve the health and quality of life for all Valley residents through efficient, effective and entrepreneurial air quality management strategies. SJVAPCD responds to complaints about smells, answers questions about air quality management permits, and reviews development projects for compliance with air quality and greenhouse gas significance thresholds. The SJVAPCD and air quality are addressed in detail in Section 3.3, Air Quality, of this EIR.

San Joaquin County

Hazardous waste programs are managed and implemented locally through the County of San Joaquin CUPA. The County hosts a variety of hazardous waste collection events throughout the County in an effort to deter improper disposal of hazardous wastes.

Household Hazardous Waste (HHW) Collection Facilities receive hazardous waste that comes from homes and, in some cases, from small business hazardous waste generators. Household wastes include pesticides, batteries, old paint, solvents, used oil, antifreeze, and other chemicals that should not go into a regular municipal landfill.

San Joaquin County Public Health Services monitors the possible groundwater and soil contamination from underground tanks. Its funding mechanism is a billing contract with the State Water Quality Control Board. Public Health Services clean-up enforcement falls under Title 23, California Code of Regulations. Case workers monitor site-specific development and must be contacted prior to development.

The City of Manteca and San Joaquin County Public Works Department deal with illegal discharges to sanitary or industrial sewers, and sometimes collect household hazardous waste. They also help to guard against illegal discharges to storm sewers (releases to the street, etc.).

Households Hazardous Waste

HHWs include pesticides, batteries, old paint, solvents, used oil, antifreeze, and other chemicals that should not go into a regular municipal landfill. HHW programs focus on removing dangerous substances from homes and preventing their release into the environment through landfills, sewer systems and illegal dumping. The City of Manteca and San Joaquin County Public Works Solid Waste Division host a variety of hazardous waste collection events throughout the year to assist in the elimination of household hazardous waste. HHW Collection Facilities receive hazardous waste that comes from homes and, in some cases, from small business hazardous waste generators.

3.8.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact from hazards and hazardous materials if it will:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- 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;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- 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;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

IMPACTS AND MITIGATION MEASURES

Impact 3.8-1: Potential to create a significant hazard through the routine transport, use, or disposal of hazardous materials or through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

(Less than Significant with Mitigation)

CONSTRUCTION PHASE IMPACTS

Construction workers and the general public could be exposed to hazards and hazardous materials as a result of improper handling or use during construction activities (particularly by untrained personnel); transportation accidents; or fires, or other emergencies. Construction workers could also be exposed to hazards associated with accidental releases of hazardous materials, which could result in significant impacts to the health and welfare of people and/or wildlife. Additionally, an accidental release into the environment could result in the contamination of water, habitat, and countless resources. Mitigation Measure 3.9-1 contained in Section 3.9, Hydrology and Water Quality, ensures compliance with existing regulatory requirements of the Regional Water Quality Control Board, which require the preparation of a project specific Stormwater Pollution Prevention Plan (SWPPP). The SWPPP is required to include project specific best management measures that

3.8 HAZARDS AND HAZARDOUS MATERIALS

are designed to control erosion and the loss of topsoil to the extent practicable using best management practices (BMPs) that the RWQCB has deemed effective in controlling erosion, sedimentation, and runoff during construction activities.

There are reportedly two (2) septic systems associated with the residences located within the Development Area. Although there is no physical or documented evidence of a release to or from these features, future development of the Development Area will require removal and appropriate closure of the septic tanks. The Phase 1 environmental site assessment report noted that there is at least one (1) irrigation well, 1 potable water supply well and associated equipment located at the west Project site boundary. According to information reviewed at the City of Manteca Public Works Division, potable water will be supplied to the Site by the City of Manteca as soon as the Project site is annexed.

The proposed Project would also be required to comply with regulations on the transportation of hazardous materials codified in 49 CFR 173 and 49 CFR 177 and CCR Title 26, Division 6. These regulations, which are under the jurisdiction of Caltrans and the CHP, provide specific packaging requirements, define unacceptable hazardous materials shipments, and prescribe safe-transit practices by carriers of hazardous materials. Compliance with these regulations would reduce the risk of exposure to humans and the environment related to the transportation of hazardous materials.

Hazardous materials regulations, which are codified in CCR Titles 8 and 22, and their enabling legislation set forth in Chapter 6.5 (Section 25100 et seq.) of the California Health and Safety Code, were established at the State level to ensure compliance with federal regulations to reduce the risk to human health and the environment from the routine use of hazardous substances. Construction specifications would include the following requirements in compliance with applicable regulations and codes, including, but not limited to CCR Titles 8 and 22, Uniform Fire Code, and Division 20 of the California Health and Safety Code: all reserve fuel supplies and hazardous materials must be stored within the confines of a designated construction area; equipment refueling and maintenance must take place only within the staging area; and construction vehicles shall be inspected daily for leaks. Off-site activities (e.g., utility construction) would also be required to comply with these regulations. These regulations and codes must be implemented, as appropriate, and are monitored by the State and/or local jurisdictions, including the San Joaquin County Department of Environmental Health and the South San Joaquin County Fire Authority (SSJCFA).

Contractors would be required to comply with Cal-EPA's Unified Program; regulated activities would be managed by San Joaquin County Department of Environmental Health, the designated Certified Unified Program Agency for San Joaquin County, in accordance with the regulations included in the Unified Program (e.g., hazardous materials release response plans and inventories, California UFC hazardous material management plans and inventories). Additionally, in the event that hazardous materials are discovered during construction, a Soils Management Plan (SMP) will need to be submitted and approved by the San Joaquin County Department of Environmental Health, as required by Mitigation Measure 3.8-1. The SMP will establish management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction. Such compliance would reduce the potential for accidental release of hazardous materials during

construction of the proposed Project. As a result, it would lessen the risk of exposure of construction workers and the public to accidental release of hazardous materials, as well as the demand for incident emergency response.

Development of the Project would involve site grading, excavation for utilities, trenching, backfilling, and the construction of proposed facilities that could result in the exposure of construction workers and the general public to hazardous materials. Like most agricultural and farming operations in the Central Valley, agricultural practices in the area have used agricultural chemicals including pesticides and herbicides as a standard practice. Continuous spraying of crops over many years can potentially result in a residual buildup of pesticides, in farm soils. Of highest concern relative to agrichemicals are chlorinated herbicides, organophosphate pesticides, and organochlorine pesticides (OCPs), such as such as Mecoprop (MCP), Dinoseb, chlordane, dichloro-diphenyltrichloroethane (DDT), and dichloro-diphenyl-dichloroethylene (DDE). The Phase 1 environmental assessment report notes that historic use of the Site for agricultural purposes has the potential to have introduced persistent agricultural chemicals such as herbicides and/or pesticides into the surface soils. In addition to soil contamination due to past agricultural use, the Phase 1 report notes that the existing structures were constructed during the period when asbestos-containing materials may have been used. Altogether, these are considered potentially significant impacts.

Overall, consistency with federal, State, and local laws and regulations related to the handling of hazardous materials discussed above and implementation of Mitigation Measures 3.8-1, 3.8-2, 3.8-3, and 3.8-4 as well as Mitigation Measure 3.9-1 from Section 3.9, Hydrology and Water Quality, would ensure that these potential impacts are reduced to a **less than significant** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.8-1: *Prior to the issuance of a Grading Permit, a Soils Management Plan (SMP) shall be submitted and approved by the San Joaquin County Department of Environmental Health. The SMP shall establish management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction. The approved SMP shall be posted and maintained onsite during construction activities and all construction personnel shall acknowledge that they have reviewed and understand the plan.*

Mitigation Measure 3.8-2: *Prior to the issuance of a Grading Permit, the applicant shall hire a licensed well contractor to obtain a well abandonment permit from San Joaquin County Environmental Health Department, and properly abandon the on-site wells, pursuant to review and approval of the City Engineer and the San Joaquin County Environmental Health Department.*

Mitigation Measure 3.8-3: *The applicant shall hire a qualified consultant to perform additional testing prior to the issuance of grading permits or demolition permits for construction activities in the following areas that have been deemed to have potentially hazardous conditions present:*

- *The residential units and adjoining structures.*
- *The soils in the area where farming equipment and above ground tanks have been used.*

3.8 HAZARDS AND HAZARDOUS MATERIALS

The intent of the additional testing is to investigate whether any of the buildings, facilities, or soils contain hazardous materials. If asbestos-containing materials and/or lead are found in the buildings, a Cal-OSHA certified ACBM and lead based paint contractor shall be retained to remove the asbestos-containing materials and lead in accordance with EPA and California Occupational Safety and Health Administration (Cal/OSHA) standards. In addition, all activities (construction or demolition) in the vicinity of these materials shall comply with Cal/OSHA asbestos and lead worker construction standards. The ACBM and lead shall be disposed of properly at an appropriate offsite disposal facility. If surface staining is found on the Project site, a hazardous waste specialist shall be engaged to further assess the stained area.

Mitigation Measure 3.8-4: *Prior to the issuance of a Grading Permit, evenly distributed soil samples shall be conducted throughout the proposed Project for analysis of pesticides and heavy metals. The samples shall be submitted for laboratory analysis of pesticides and heavy metals per DTSC and EPA protocols. The results of the soil sampling shall be submitted to the San Joaquin County Environmental Health Department. If elevated levels of pesticides or heavy metals are detected during the laboratory analysis of the soils, a soil cleanup and remediation plan shall be prepared and implemented prior to the commencement of grading activities.*

OPERATIONAL PHASE IMPACTS

The operational phase of the proposed Project will occur after construction is completed and business operators/employees, and residents move in to occupy the structures and facilities on a day-to-day basis.

The proposed Project includes the development of residential structures. Each of these uses will likely use a variety of hazardous materials commonly found in urban areas including: paints, cleaners, and cleaning solvents. If handled appropriately, these materials do not pose a significant risk. These facilities will store and use these materials. There will be a risk of release of these materials into the environment if they are not stored and handled in accordance with best management practices approved by San Joaquin County Environmental Health Division and the Manteca Fire Department. Implementation of the following mitigation measure will ensure that the proposed Project would have a **less than significant** impact relative to this issue.

Impact 3.8-2: Potential to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. (Less than Significant)

The Manteca Unified School District (MUSD) provides school services for grades K through 12 within the communities of Manteca, Lathrop, Stockton, and French Camp.

The nearest school to the Project site is the Sierra High School, located approximately 1.01 miles north of the Project site. Other schools near the Project site include: Brock Elliot Elementary School (1.07 miles north), Veritas Elementary School (1.26 miles east), and Nile Garden Elementary School (1.41 miles southeast). There are a variety of other schools located beyond three miles from the Project site.

The proposed Project includes the development of 827 residential units. Household wastes generated from residential uses include pesticides, batteries, old paint, solvents, used oil, antifreeze, and other chemicals that typically do not pose a significant threat of emitting hazardous emissions or materials with proper disposal. Household Hazardous Waste (HHW) Collection Facilities receive hazardous waste that comes from homes and, in some cases, from small business hazardous waste generators. Therefore, implementation of the proposed Project would have a **less than significant** impact with regards to this environmental issue.

Impact 3.8-3: Potential to result in impacts from being included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. (Less than Significant)

The hazards assessment included a site reconnaissance, interviews, historical land use research, and database research. The assessment revealed no evidence of historical or existing Recognized Environmental Conditions in connection with the Project site. The Project site is not on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Implementation of the proposed Project would have a **less than significant** impact with regards to this environmental issue.

Impact 3.8-4: The Project is not located within an airport land use plan, two miles of a public airport or public use airport, and would not result in a safety hazard for people residing or working in the project area (Less than Significant)

There are no documented public airports or public use airports within close proximity to the Project site. The nearest airport facilities within the vicinity of the Project site are the Stockton Metropolitan Airport, located approximately 3.5 miles north, and the New Jerusalem Airport, located approximately 6.5 miles southwest. The Project site is not located within the airport influence area or within the Airport's noise exposure contours for the New Jerusalem Airport or Stockton Metropolitan Airport as identified in either Airport Land Use Compatibility Plan (ALUCP). Implementation of the proposed Project would have a **less than significant** impact with regards to this environmental issue.

Impact 3.8-5: Potential to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (Less than Significant)

The Office of Emergency Services (OES) maintains an Emergency Operations Plan (EOP) that serves as the official Emergency Plan for San Joaquin County. It includes planned operational functions and overall responsibilities of County Departments during an emergency situation. The Emergency Plan also contains a threat summary for San Joaquin County, which addresses the potential for natural, technological and human-caused disasters (County Code, Title 4-3007).

The County OES also prepared a Hazardous Materials Area Plan (§2720 H&S, 2008) that describes the hazardous materials response system developed to protect public health, prevent

3.8 HAZARDS AND HAZARDOUS MATERIALS

environmental damage and ensure proper use and disposal of hazardous materials. The plan establishes effective response capabilities to contain and control releases, establishes oversight of long-term cleanup and mitigation of residual releases, and integrates multi-jurisdiction and agency coordination. This plan is now implemented by the San Joaquin County Environmental Health Department.

The San Joaquin County Environmental Health Department maintains a Hazardous Materials Management Plan/Hazardous Materials Business Plan (HMMP/HMBP). The HMMP/HMBP describes agency roles, strategies and processes for responding to emergencies involving hazardous materials. The Environmental Health Department maintains a Hazardous Materials Database and Risk and Flood Maps available to the public on its website.

In San Joaquin County, all major roads are available for evacuation, depending on the location and type of emergency that arises. The proposed Project does not include any actions that would impair or physically interfere with any of San Joaquin County's emergency plans or evacuation routes. Future uses on the Project site will have access to the County resources that establish protocols for safe use, handling and transport of hazardous materials. Construction activities are not expected to result in any unknown significant road closures, traffic detours, or congestion that could hinder the emergency vehicle access or evacuation in the event of an emergency. Implementation of the proposed Project would have a **less than significant** impact with regards to this environmental issue.

Impact 3.8-6: Potential to expose people or structures to a risk of loss, injury or death from wildland fires. (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 County has areas with an abundance of flashy fuels (i.e. grassland) in the foothill areas of the eastern and western portions of the County.

Wildfires are a potential hazard to development, including land uses located in the foothill and forested areas of the city. The severity of wildfire problems depends on a combination of vegetation, climate, slope, and people. The vegetation and topography found in the eastern portions of the city, coupled with hot, dry summers, present fire hazards during critical fire periods for much of the county. In addition to natural factors such as lightning, human activity is a primary factor contributing to the incidence of wildfires. Campfires, smoking, debris burning, arson, public utility infrastructure, and equipment use are common human-related causes of wildfires.

The Project site is not categorized as a "Very High" FHSZ by CalFire. The Project site is not located within an LRA and is categorized as Urban Unzoned or Non-Wildland/Non-Urban.

The Project site is located in an area that is predominately agricultural uses, which is not at a significant risk of wildlife. The proposed Project would have a **less than significant** impact with regards to this environmental issue.

This section describes the regulatory setting, regional hydrology and water quality, impacts that are likely to result from project implementation, and measures to reduce potential impacts to water quality. This section is based in part on the following documents, reports and studies:

- *City of Manteca General Plan 2023* (City of Manteca as amended through 2016);
- *Manteca General Plan 2023 Draft Environmental Impact Report* (City of Manteca 2003); *California Water Plan Update 2013* (DWR 2013);
- *Manteca Storm Drain Master Plan* (City of Manteca 2013);
- *California’s Groundwater Bulletin 118, San Joaquin Valley Groundwater Basin, Eastern San Joaquin Subbasin* (DWR 2006);
- *California’s Groundwater* (DWR 2003);
- *Eastern San Joaquin Groundwater Basin Groundwater Management Plan* (SJRG 2013);
- *Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan* (Eastern San Joaquin Groundwater Authority, November 2019);
- *Eastern San Joaquin Integrated Regional Water Management Plan Update* (Eastern San Joaquin County Groundwater Basin Authority, June 2014);
- *Spring 2018 Groundwater Report* (San Joaquin County Flood Control and Water Conservation District, 2018);
- *Custom Soils Report for San Joaquin County, California* (NRCS 2016);
- *Web Soil Survey* (NRCS 2020), and the *Lumina Ranch Water Supply Assessment* (West Yost, 2021).

A comment from the Central Valley Regional Water Quality Control Board was received during the NOP comment period regarding hydrology and water quality. Full comments received are included in Appendix A.

3.9.1 ENVIRONMENTAL SETTING

REGIONAL HYDROLOGY

San Joaquin County is located in the San Joaquin River watershed. The San Joaquin River is about 300 miles long. It begins in the Sierra Nevada mountain range on California’s eastern border. The river runs down the western slope of the Sierra and flows roughly northwest through the Central Valley, to where it meets the Sacramento River at the Sacramento-San Joaquin Delta. Once a great marsh, the Sacramento-San Joaquin Delta is now a network of channels and sunken “islands” that cover—together with Suisun Marsh—about 1,300 square miles. Laid over those islands and channels is infrastructure: water supply conduits; major arteries of the state’s electrical grid; natural gas fields, storage facilities, and pipelines; highways and railways; and shipping channels, all surrounded by an increasingly urban landscape. This maze of channels and islands drains more than 40 percent of the state’s lands and carries about half of the state’s total annual runoff (Delta Stewardship Council, as amended July 2019).

Because the Central Valley receives relatively little rainfall (12 to 17 inches a year, falling mostly October through March), snowmelt runoff from the mountains is the main source of fresh water in

DRAFT EIR

Chapters	Page Numbers
Executive Summary.....	ES-1
1.0 Introduction	1.0-1
1.1 Purpose and Intended Uses of the EIR	1.0-1
1.2 Type of EIR	1.0-1
1.3 Known Responsible and Trustee Agencies	1.0-1
1.4 Environmental Review Process.....	1.0-2
1.5 Organization and Scope	1.0-4
1.6 Comments Received on the Notice of Preparation	1.0-7
1.7 Potential Areas of Concern	1.0-7
2.0 Project Description	2.0-1
2.1 Project Location	2.0-1
2.2 Project Site Defined	2.0-1
2.3 Project Setting.....	2.0-1
2.4 Project Goals and Objectives	2.0-5
2.5 Project Entitlements	2.0-6
2.6 Development Project Characteristics	2.0-8
2.7 Uses of the EIR and Required Agency Approvals.....	2.0-12
3.1 Aesthetics and Visual Resources.....	3.1-1
3.1.1 Environmental Setting	3.1-1
3.1.2 Regulatory Setting	3.1-5
3.1.3 Impacts and Mitigation Measures	3.1-10
3.2 Agricultural Resources	3.2-1
3.2.1 Environmental Setting	3.2-1
3.2.2 Regulatory Setting	3.2-8
3.2.3 Impacts and Mitigation Measures	3.2-14
3.3 Air Quality	3.3-1
3.3.1 Environmental Setting	3.3-1
3.3.2 Regulatory Setting	3.3-12
3.3.3 Impacts and Mitigation Measures	3.3-36

3.4 Biological Resources..... 3.4-1

 3.4.1 Environmental Setting 3.4-1

 3.4.2 Regulatory Setting..... 3.4-13

 3.4.3 Impacts and Mitigation Measures 3.4-24

3.5 Cultural Resources 3.5-1

 3.5.1 Environmental Setting 3.5-1

 3.5.2 Regulatory Setting..... 3.5-9

 3.5.3 Impacts and Mitigation Measures 3.5-15

3.6 Geology and Soils..... 3.6-1

 3.6.1 Environmental Setting 3.6-1

 3.6.2 Regulatory Setting..... 3.6-11

 3.6.3 Impacts and Mitigation Measures 3.6-15

3.7 Greenhouse Gases and Climate Change 3.7-1

 3.7.1 Environmental Setting 3.7-1

 3.7.2 Regulatory Setting..... 3.7-6

 3.7.3 Impacts and Mitigation Measures 3.7-38

3.8 Hazards and Hazardous Materials 3.8-1

 3.8.1 Environmental Setting 3.8-1

 3.8.2 Regulatory Setting..... 3.8-10

 3.8.3 Impacts and Mitigation Measures 3.8-19

3.9 Hydrology and Water Quality 3.9-1

 3.9.1 Environmental Setting 3.9-1

 3.9.2 Regulatory Setting..... 3.9-11

 3.9.3 Impacts and Mitigation Measures 3.9-27

3.10 Land Use, Population, and Housing 3.10-1

 3.10.1 Environmental Setting 3.10-1

 3.10.2 Regulatory Setting..... 3.10-3

 3.10.3 Impacts and Mitigation Measures 3.10-18

3.11 Noise 3.11-1

 3.11.1 Environmental Setting 3.11-1

 3.11.2 Regulatory Setting..... 3.11-11

 3.11.3 Impacts and Mitigation Measures 3.11-21

3.12 Public Services and Recreation 3.12-1

- 3.12.1 Environmental Setting 3.12-1
- 3.12.2 Regulatory Setting 3.12-8
- 3.12.3 Impacts and Mitigation Measures 3.12-17

3.13 Transportation and Circulation 3.13-1

- 3.13.1 Introduction 3.13-1
- 3.13.2 Analysis Methodology 3.13-3
- 3.13.3 Existing Conditions 3.13-6
- 3.13.4 Existing Plus Project Conditions 3.13-8
- 3.13.5 Cumulative Conditions Analysis 3.13-11
- 3.13.6 Regulatory Setting 3.13-17
- 3.13.7 Thresholds of Significance 3.13-23
- 3.13.8 Impacts and Mitigation Measures 3.13-24

3.14 Utilities 3.14-1

- 3.14.1 Wastewater 3.14-1
 - Environmental Setting 3.14-1
 - Regulatory Setting 3.14-4
 - Thresholds of Significance 3.14-8
 - Impacts and Mitigation Measures 3.14-8
- 3.14.2 Water Supplies 3.14-12
 - Environmental Setting 3.14-12
 - Regulatory Setting 3.14-21
 - Thresholds of Significance 3.14-29
 - Impacts and Mitigation Measures 3.14-30
- 3.14.3 Storm Water 3.14-36
 - Environmental Setting 3.14-36
 - Regulatory Setting 3.14-37
 - Thresholds of Significance 3.14-45
 - Impacts and Mitigation Measures 3.14-45
- 3.14.4 Solid Waste 3.14-48
 - Environmental Setting 3.14-48
 - Regulatory Setting 3.14-52
 - Thresholds of Significance 3.14-58
 - Impacts and Mitigation Measures 3.14-58

3.15 Wildfires 3.15-1
 3.15.1 Environmental Setting 3.15-1
 3.15.2 Regulatory Setting..... 3.15-2
 3.15.3 Impacts and Mitigation Measures 3.15-6

4.0 Other CEQA-Required Topics 4.0-1
 4.1 Cumulative Setting and Impact Analysis..... 4.0-1
 4.2 Significant Irreversible Effects 4.0-28
 4.4 Significant and Unavoidable Impacts..... 4.0-30

5.0 Alternatives to the Proposed Project..... 5.0-1
 5.1 CEQA Requirements..... 5.0-1
 5.2 Alternatives Considered in this EIR 5.0-2
 5.3 Environmental Analysis..... 5.0-4

6.0 Report Preparers..... 6.0-1

7.0 References 7.0-1

Tables	Page Numbers
Table ES-1: Comparison Summary of Alternatives to the Proposed Project	ES-4
Table ES-2: Project Impacts and Proposed Mitigation Measures	ES-5
Table 2.0-1: Parcels Within the Project Site	2.0-2
Table 2.0-2: Land Use Summary	2.0-8
Table 3.2-1: Summary Comparison of Crop Values	3.2-1
Table 3.2-2: Soil Capability Classification.....	3.2-2
Table 3.2-3: Storie Index Rating System	3.2-3
Table 3.2-4: San Joaquin County Farmlands Summary and Change by Land Use Category.....	3.2-4
Table 3.2-5: Project Site Soils.....	3.2-7
Table 3.3-1: Federal and State Ambient Air Quality Standards	3.3-9
Table 3.3-2: State and National Attainment Status	3.3-10
Table 3.3-3 SJVAB Ambient Air Quality Monitoring Data Summary - Ozone	3.3-11
Table 3.3-4: SJVAB Ambient Air Quality Monitoring Data Summary - PM ₁₀	3.3-11
Table 3.3-5 SJVAB Ambient Air Quality Monitoring Data Summary - PM _{2.5}	3.3-11
Table 3.3-6: Operational Project Generated Emissions (tons per year)	3.3-40
Table 3.3-7: Maximum Construction Project Generated Emissions (Tons per Year)	3.3-44
Table 3.3-8: CARB Minimum Separation Recommendations on Siting Sensitive Land Uses...	3.3-48
Table 3.4-1: Land Cover Types	3.4-3
Table 3.4-2: Special-Status Plant Species Which May Occur in Project Area	3.4-5
Table 3.4-3: Special-Status Wildlife and Fish Species Which May Occur in Project Area.....	3.4-8

Table 3.6-1: Project Site Soils 3.6-3

Table 3.6-2: Fault Activity Rating 3.6-4

Table 3.6-3: Modified Mercalli Intensity Scale for Earthquakes..... 3.6-5

Table 3.7-1: Baseline Emissions Inventory and Business-As-Usual (BAU) Emissions Inventory
 Projections (MT CO₂e) 3.7-37

Table 3.7-2: City of Manteca 2020 Target Emissions Inventory (MT CO₂e)..... 3.7-38

Table 3.7-3: Maximum Construction GHG Emissions (Mitigated Average MT CO₂e/year) ... 3.7-41

Table 3.7-4: Operational GHG Emissions at Buildout (Mitigated Metric Tons/Year) 3.7-41

Table 3.7-5: On-road Mobile Fuel Generated by Project Construction Activities 3.7-45

Table 3.8-1: GeoTracker Hazardous Material Release Sites Within 0.5 Miles of Project Site ... 3.8-6

Table 3.8-2: GeoTracker Hazardous Material Release Sites Within 1.0 Mile of Project Site..... 3.8-6

Table 3.9-1: State of California Watershed Hierarchy Naming Convention 3.9-3

Table 3.9-2: Soils Hydrologic Rating..... 3.9-32

Table 3.10-1: Population Growth 3.10-2

Table 3.10-2: Housing Unit Growth 3.10-2

Table 3.10-3: 2023 General Plan Existing Policy Consistency 3.10-20

Table 3.10-4: General Plan Update Proposed Policy Consistency 3.10-23

Table 3.11-1: Typical Noise Levels 3.11-3

Table 3.11-2: Summary of Existing Background Noise Measurement Data 3.11-5

Table 3.11-3: Existing Traffic Noise Levels 3.11-6

Table 3.11-4: Existing and Existing Plus Project Traffic Noise Levels..... 3.11-7

Table 3.11-5: Cumulative and Cumulative + Project Traffic Noise Levels 3.11-8

Table 3.11-6: Construction Equipment Noise..... 3.11-11

Table 3.11-7: Vibration Levels for Various Construction Equipment 3.11-11

Table 3.11-8: Maximum Allowable Noise Exposure Mobile Noise Sources 3.11-13

Table 3.11-9: Performance Standards for Stationary Noise Sources or Projects Affected by
 Stationary Noise Sources 3.11-13

Table 3.11-10: Effects of Vibration on People and Buildings 3.11-21

Table 3.11-11: Cumulative + Project Transportation Noise Levels at Proposed
 Residential Uses 3.11-26

Table 3.12-1: Manteca Police Department Crime Statistics (2017-2019) 3.12-2

Table 3.12-2: Summary of Parks and Recreation Facilities..... 3.12-5

Table 3.12-3: Public Schools Serving Manteca 3.12-6

Table 3.12-4: Enrollment by Grade MUSD (2019-2020)..... 3.12-7

Table 3.13-1: Intersection LOS Criteria 3.13-5

Table 3.13-2: Intersection Operations – Existing Conditions..... 3.13-7

Table 3.13-3: Project Trip Generation 3.13-8

Table 3.13-4: Intersection Operations – Existing Plus Project Conditions..... 3.13-9

Table 3.13-5: Intersection Operations – Existing Plus Project Conditions Mitigation 3.13-10

Table 3.13-6: Intersection Operations – Cumulative No Project Conditions..... 3.13-13

Table 3.13-7: Intersection Operations – Cumulative Plus Project Conditions 3.13-14

Table 3.13-8: Intersection Operations –Cumulative Plus Project Conditions with Improvements
..... 3.13-15

Table 3.13-9: Intersection Operations – Woodward Avenue/ Bella Terra Drive Cumulative Plus
Project Conditions with Improvements 3.13-15

Table 3.13-10: Project Vehicle Miles Traveled Analysis..... 3.13-25

Table 3.14-1: Existing and Projected Total Water Demand in Normal Years, AFY 3.14-13

Table 3.14-2: City of Manteca Projected Buildout Water Demand, AFY 3.14-14

Table 3.14-3 Water Shortage Contingency Plan Projected Demand Reduction..... 3.14-14

Table 3.14-4: Projected Future Dry Year Potable and Raw Water Demand..... 3.14-15

Table 3.14-5: Historical Groundwater Production 3.14-18

Table 3.14-6: SCWSP Surface Water Deliveries to the City of Manteca During Hydrologic Normal,
Single Dry, and Multiple Dry Years, AFY 3.14-20

Table 3.14-7: Projected Groundwater Production During Hydrology Normal, Single Dry, and
Multiple Dry Years, AFY 3.14-21

Table 3.14-8: Water Use Factors by Land Use Type 3.14-33

Table 3.14-9: Projected Water Demand for Buildout of the Proposed Project..... 3.14-34

Table 3.14-10: Projected Water Demand for Buildout of the Proposed Project..... 3.14-35

Table 3.14-11: Solid Waste Generation Rates 3.14-51

Table 3.14-12: City of Manteca Waste Disposal Rate Targets (Pounds/Day) 3.14-51

Table 3.14-13: City of Manteca Landfill Summary 3.14-52

Table 3.14-14: City of Manteca Waste Disposal Rate Targets (Pounds/Day) 3.14-52

Table 4.0-1: Growth Projections 4.0-2

Table 4.0-2: Existing and Projected Total Water Demand in Normal Years, AFY 4.0-23

Table 4.0-3: City of Manteca Projected Buildout Water Demand, AFY 4.0-23

Table 4.0-4: Projected Water Demand for Buildout of the Proposed Project..... 4.0-23

Table 4.0-5: Summary of Potable and Raw Water Demand Versus Supply During Hydrologic
Normal, Single Dry, and Multiple Dry Years 4.0-25

Table 5.0-1: Comparison of Alternative Project Impacts to the Proposed Project 5.0-24

Figures

Note: Figures are located at the end of the chapters.

- Figure 2.0-1 Regional Location Map
- Figure 2.0-2 Project Vicinity Map
- Figure 2.0-3 USGS Topographic Map
- Figure 2.0-4 Assessor Parcel Map
- Figure 2.0-5 Aerial Photo
- Figure 2.0-6 Existing and Proposed General Plan

Figure 2.0-7	San Joaquin County Land Uses and Zoning Designations
Figure 2.0-8	City of Manteca General Plan Land Use Maps with Amendment
Figure 2.0-9	Proposed Zoning
Figure 2.0-10	Project Site Plan
Figure 2.0-11	Annexation Area
Figure 3.2-1	Farmland Classifications
Figure 3.2-2	Project Site Soils
Figure 3.4-1	Cover Types
Figure 3.4-2	California Natural Diversity Database 9-Quad Search
Figure 3.6-1	Known Faults in the Project Area
Figure 3.6-2	Shrink-Swell Potential of Soils
Figure 3.9-1	Watersheds
Figure 3.9-2	FEMA Floodplain
Figure 3.9-3	Dam Inundation
Figure 3.11-1	Noise Measurement Sites
Figure 3.11-2	Cumulative Project Transportation Noise Contours
Figure 3.11-3	Required Quiet Pavement Locations
Figure 3.13-1	Project Location
Figure 3.13-2	Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions
Figure 3.13-3	Existing Bicycle and Pedestrian Facilities
Figure 3.13-4	Existing Transit Facilities
Figure 3.13-5	Existing Plus Project Trip Distribution
Figure 3.13-6	Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions
Figure 3.13-7	Project Site
Figure 3.13-8	Peak Hour Traffic Volumes and Lane Configurations - Cumulative No Project Conditions
Figure 3.13-9	Cumulative Plus Project Conditions
Figure 3.13-10	Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project Conditions

Appendices

Appendix A:	Notice of Preparation, and NOP Comments
Appendix B:	Air Quality, Greenhouse Gas, and Energy Appendices
Appendix C:	Cultural Investigation
Appendix D:	Phase 1 Environmental Site Assessment
Appendix E:	Environmental Noise Assessment
Appendix F:	Transportation Analysis
Appendix G:	Water Supply Assessment
Appendix H:	Tentative Subdivision Map
Appendix I:	Design Guidelines

This Page Intentionally Left Blank.

the San Joaquin River. Over its 300-mile length, the San Joaquin River is fed by many other streams and rivers, most notably the Stanislaus, Tuolumne and Merced rivers.

Most of the surface water in the upper San Joaquin River is stored and diverted at Millerton Lakes' Friant Dam, near Fresno. From Friant Dam, water is pumped north through the Madera Canal and south through the Friant-Kern canal to irrigation districts and other water retailers, which then deliver the water directly to the end users in the southern portion of the watershed.

In the central and northern portions of the watershed, many agricultural and municipal users receive water from irrigation districts, such as the Modesto, Merced, Oakdale, South San Joaquin and Turlock Irrigation Districts. That water is provided through diversions from rivers that are tributary to the San Joaquin, such as the Mokelumne, Stanislaus, Tuolumne and Merced rivers.

In an average year, about 1.5 million acre-feet of water is diverted from the San Joaquin River at Friant Dam, leaving little flow in the river until the Merced River joins the San Joaquin northwest of the City of Merced. Additional water also reaches the river via flows returning to the river from municipal wastewater treatment plants, as well as urban and agricultural runoff. The rest of the area's water supply needs are met by importing water from northern California (via the Central Valley Project) and by pumping water from the groundwater basin (Delta Stewardship Council, as amended July 2019).

Climate

Summers in the region are warm and dry ranging from an average high in July of 93°F to an average low of approximately 59°F. Winters are cool and mild, with an average high of 53°F and a low of 37°F in January. The average annual precipitation is approximately 13.81 inches. Precipitation occurs as rain, most of which falls between the months of November through April, peaking in January at 2.85 inches. The average temperatures range from December lows of 37.5 F to July highs of 94.3 F.

Watersheds

A watershed is a region that is bound by a divide that drains to a common watercourse or body of water. Watersheds serve an important biological function, oftentimes supporting an abundance of aquatic and terrestrial wildlife including special-status species and anadromous and native local fisheries. Watersheds provide conditions necessary for riparian habitat.

The State of California uses a hierarchical naming and numbering convention to define watershed areas for management purposes. This means that boundaries are defined according to size and topography, with multiple sub-watersheds within larger watersheds. Table 3.9-1 shows the primary watershed classification levels used by the State of California. The second column indicates the approximate size that a watershed area may be within a particular classification level, although variation in size is common.

TABLE 3.9-1. STATE OF CALIFORNIA WATERSHED HIERARCHY NAMING CONVENTION

<i>WATERSHED LEVEL</i>	<i>APPROXIMATE SQUARE MILES (ACRES)</i>	<i>DESCRIPTION</i>
Hydrologic Region (HR)	12,735 (8,150,000)	Defined by large-scale topographic and geologic considerations. The State of California is divided into ten HRs.
Hydrologic Unit (HU)	672 (430,000)	Defined by surface drainage; may include a major river watershed, groundwater basin, or closed drainage, among others.
Hydrologic Area (HA)	244 (156,000)	Major subdivisions of hydrologic units, such as by major tributaries, groundwater attributes, or stream components.
Hydrologic Sub-Area (HSA)	195 (125,000)	A major segment of an HA with significant geographical characteristics or hydrological homogeneity.

SOURCE: CALIFORNIA DEPARTMENT OF WATER RESOURCES, 2012.

Hydrologic Region

San Joaquin County is located in the San Joaquin River Hydrological Region. The San Joaquin River is the principal river of the region, and all other streams of the region are tributary to it. The Mokelumne River and its tributary the Cosumnes River originate in the central Sierra Nevada, along with the more southerly Stanislaus and Tuolumne rivers. The Merced River flows from the south-central Sierra Nevada and enters the San Joaquin near the City of Newman. The Chowchilla and Fresno rivers also originate in the Sierra south of the Merced River and trend westward toward the San Joaquin River. Creeks originating in the Coast Range and draining eastward into the San Joaquin River include Del Puerto Creek, Orestimba Creek, and Panoche Creek. Del Puerto Creek enters the San Joaquin near the City of Patterson, and Orestimba Creek enters north of the City of Newman. During flood years, Panoche Creek may enter the San Joaquin River or the Fresno Slough near the town of Mendota. The Kings River is a stream of the Tulare Lake Hydrologic Region, but in flood years it may contribute to the San Joaquin River, flowing northward through the James Bypass and Fresno Slough to enter near the City of Mendota. The Mud, Salt, Berrenda, and Ash sloughs also add to the San Joaquin River, and numerous lesser streams and creeks also enter the system, originating in both the Sierra Nevada and the Coast Range. The entire San Joaquin river system drains northwesterly through the Delta to Suisun Bay (DWR 2013, pg. SJR-5).

The majority of the Project site is located in the Oakwood Lake - San Joaquin River watershed. A very small portion of the southwestern corner of the Project Site is located within the Walthall Slough - San Joaquin River watershed. See Figure 3.9-1.

Groundwater

The San Joaquin Valley Groundwater Basin lies within the San Joaquin River and Tulare Lake Hydrologic Regions. The San Joaquin River Hydrologic Region portion of the basin covers approximately 3.73 million acres while the Tulare Lake Hydrologic Region portion of the basin covers approximately 5.15 million acres. Groundwater is extensively used in the San Joaquin Valley Groundwater Basin by agricultural and urban entities and accounts for approximately 48% of the groundwater used in the State (DWR 2003).

The northern portion of the basin is within the San Joaquin River Hydrologic Region and consists of nine subbasins. These subbasins are the Cosumnes, Eastern San Joaquin, Tracy, Modesto, Turlock, Merced, Delta-Mendota, Chowchilla, and Madera (DWR, 2003). The City of Manteca is located in the Eastern San Joaquin River Groundwater Basin (ESJRGB).

LOCAL SETTING

The Project site is located in the southwestern portion of the City of Manteca directly adjacent to the city limits. The Project site is immediately southwest of the intersection of Airport Way and Woodward Avenue. The Project site is bounded on the north by the City of Manteca city limits, on the east by Airport Way, on the south by an existing Reclamation District #2094 (RD2094) dry levee and existing agricultural fields, and on the west by the existing single-family subdivisions. The Project site encompasses 183.46 acres, including a 161.19-acre Development Area, a 19.11-acre Non-development Area, and 3.16 acres of existing right-of-way owned by San Joaquin County. There are no natural water courses in the Project site.

The Development Area is bordered on the north by Woodward Avenue, on the east by Airport Way, on the south by an existing Reclamation District #2094 (RD2094) dry levee and existing agricultural fields, and on the west by the Terra Ranch Subdivision. The current uses on the Development Area are predominantly agricultural and undeveloped, except for two existing houses and barns and/or sheds with associated equipment in the northeastern portion of the site. Additionally, two dirt/gravel roadways bisect the Development Area, including one roadway running north to south down the center of the Development Area from Woodward Avenue to the southern boundary and another running east to west from Airport Avenue connecting to the dirt/gravel roadway in the center of the Development Area. A South San Joaquin Irrigation District (SSJID) pipeline exists within the Development Area. An RD 2094 dry levee makes up a portion of the southern property line. This dryland levee is not intended to hold floodwaters from the south (upstream), instead it is intended to contain flows on RD 2094 and RD 2096 in the event of a levee breach of levees along RD 2094, RD 2096, or RD 17.

The Non-development Area is located south and east of the City of Manteca city limits, west of Airport Way, and north of Woodward Avenue. The Non-development Area contains 15 parcels each developed with a single-family residence. Six of the existing residential homes (Non-development Area 1) are located just north of the Development Area and Woodward Avenue in the northwest corner of the Project site while the remaining nine residential homes (Non-development Area 2) are just north of Woodward Avenue and west of Airport Way in the northeast corner of the Project site.

Drainage

The City of Manteca operates and maintains its storm drainage system, which consists of approximately 170 miles of pipeline, 36 pump stations, and 35 detention basins. The runoff flows through this system, into South San Joaquin Irrigation District (SSJID) drains and laterals, and eventually into the San Joaquin River. Additionally, the City enforces storm drain regulations established by the US Environmental Protection Agency (EPA) and the State of California.

The City maintains a dynamic computer model of its storm drainage system. The model was formulated as an XP-SWMM model originally developed by the US EPA. The current version was advanced by a private sector organization, XP Software, Inc. The model provides analysis over time and offers the ability to maximize the efficiency of detention basin and pump operations along with the ability to monitor and control downstream water levels to minimize flooding problems with a minimum of new capital improvements.

The SSJID owns a complex network of irrigation Laterals and Drains that run throughout the City limits. These facilities deliver irrigation water to various farming operations in the region, and they convey excess irrigation water and field runoff to downstream receiving waters, specifically the San Joaquin River. The City relies on SSJID's facilities to convey its storm water runoff to the San Joaquin River.

The City and SSJID have a long-standing agreement that authorizes the City to discharge its storm water runoff into SSJID facilities for ultimate disposal to the San Joaquin River. In 1975 the City first entered into a storm drainage agreement with SSJID, and in 2006 the City renewed its drainage agreement with SSJID. Of the many requirements in the 2006 Agreement, the two most significant new requirements are that all storm water discharges into SSJID facilities must be monitored and controlled such that the capacity of SSJID's facilities is not exceeded, and that storm water quality must be controlled such that it complies with all applicable laws.

The City meets the first requirement by requiring all new development to attenuate its runoff in a storage facility before pumping it into SSJID's facilities. In addition, the City uses real-time water level monitoring stations at critical low points in the conveyance system complete with SCADA (Supervisory Control and Data Acquisition) facilities. Regarding the water quality requirement, the City is classified as a Phase II city by the State Water Resources Control Board. As such, the City, and consequently new development, is required to comply with the State Board's storm water National Pollution Discharge Elimination System (NPDES) permit for Phase II cities. Per the City/SSJID Master Drainage Agreement, SSJID prohibits the direct discharge of storm water runoffs into its facilities. Accordingly, the City requires all new developments to attenuate its runoff in a storage facility before pumping it into SSJID's facilities. For surface attenuation facilities, there are two allowable basin types that may be used: Interim Percolation Basin or a Permanent Detention Basin.

INTERIM PERCOLATION BASIN: RESIDENTIAL AND NON-RESIDENTIAL APPLICATIONS

Percolation basins may be used as an interim measure for retention and disposal of storm water runoff in those areas that will not receive storm drainage service from a major storm drain system by the time development occurs. When discharge capability to a major storm drain system becomes available, the basins are to be exchanged for or converted to detention basins with pumped discharge facilities. Interim percolation basins are to be sized to store two, 10-year, 48-hour duration storm runoff volumes over the entire contributing area.

PERMANENT DETENTION BASIN: RESIDENTIAL APPLICATIONS

Permanent detention basins in residential areas are designed as multi-purpose facilities, when practical, and are sized to hold a 10-year, 48-hour duration storm runoff volume resulting from 3.56 inches of rainfall occurring over the entire contributing area. Regional detention basins are preferred over smaller, individual basins, as they are designed to serve several developments. All basins are required to have positive shut-off controls and treat stormwater to meet NPDES permit requirements. The Volume of proposed detention basins are determined with no allowance for percolation or outlet facilities.

LATERALS FOR STORM WATER CONVEYANCE

As previously described, SSJID owns a complex network of irrigation Laterals and Drains that run throughout the City's limits. The hydraulic connectivity of SSJID's system is as follows: 1) irrigation water is conveyed to farming operations via a vast network of Laterals; 2) the Laterals carry excess irrigation water and field runoff to several Drains; 3) the Drains convey water to a large central drain called the French Camp Outlet Canal (FCOC); and 4) the FCOC conveys water to the San Joaquin River.

A fundamental goal of previous storm drain master plans was to minimize the use of SSJID's Laterals for conveyance of storm water runoff to SSJID's Drains. Accordingly, previous master plans specified the construction of a separate storm water conveyance network that by-passed the Laterals and transported storm drainage directly to the Drains. Once the City's storm water reached the Drains, the Drains would continue to provide conveyance to the FCOC and to the San Joaquin River. In the 2013 Storm Drain Master Plan (2013 SDMP), however, the City recognizes the opportunity to minimize infrastructure costs for all parties by abandoning the concept of separate conveyance systems and instead expanding the use of SSJID's Laterals. Laterals that are targeted to convey both storm water and irrigation water to Drains are called dual-use facilities.

This concept was determined to be viable since SSJID's Laterals are 1) found virtually everywhere in the existing and undeveloped areas of the City, 2) most of these Laterals are already 42-inch diameter pipe, which is a sufficient size for the City's drainage needs, and 3) SSJID already requires new development projects that disturb their Laterals to remove, realign and replace that infrastructure with an equal or larger diameter pipeline. For situations where the existing Lateral is 36-inch diameter, and SSJID does not require a 42-inch or larger pipe to be installed as a replacement, the City will require a minimum 42-inch diameter pipeline to be installed, and the developer will be reimbursed the upsizing cost for the larger diameter pipe via the Public Facilities Implementation Fee (PFIP) program.

FUTURE STORM WATER DRAINAGE DEMAND AND SYSTEM IMPROVEMENTS

The City's 2013 Storm Drain Master Plan (SDMP) provides a comprehensive planning document to guide improvement and expansion of the City's storm drainage system to meet current and future needs in a safe and reliable manner while maintaining compliance with all applicable regulations. Five planning zones have been identified to define the capital improvements needed to serve future

growth: Zones 30, 32, 34, 36 and 39. With the exception of drainage Zone 39, all drainage zones are located in the SSJID service area. The Project site is located in Zone 36 and is currently served by the SSJID.

Groundwater

The Project site is located above the Eastern San Joaquin River Groundwater Subbasin. The Eastern San Joaquin River Subbasin covers approximately 1,105 square miles and extends from the Mokelumne River on the north and northwest; San Joaquin River on the west; Stanislaus River on the south; and consolidated bedrock on the east. The Eastern San Joaquin Subbasin is bounded on the south, southwest, and west by the Modesto, Delta-Mendota, and Tracy Subbasins, respectively and on the northwest and north by the Solano, South American, and Cosumnes Subbasins. (DWR 2006, pg. 1).

The Eastern San Joaquin River Groundwater Subbasin is not adjudicated; however, a basin management plan has been created. The Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan (ESJGS-GSP) (Eastern San Joaquin Groundwater Authority, 2019) was prepared in November 2019. The purpose of the ESJGS-GSP is “to meet the regulatory requirements set forth in the three-bill legislative package consisting of Assembly Bill (AB) 1739 (Dickinson), Senate Bill (SB) 1168 (Pavley), and SB 1319 (Pavley), collectively known as the Sustainable Groundwater Management Act (SGMA). SGMA.” According to Department of Water Resources (DWR) Bulletin 118 (DWR, 2016), the Eastern San Joaquin River Groundwater Basin is in a critical condition of overdraft.

Most of the fresh groundwater is encountered at depths of 700 to 1,900 feet, and most of this shallow groundwater is unconfined. A discussion of basin hydrogeology is provided in the ESJGS-GSP.

The Eastern San Joaquin Subbasin includes lands south of Dry Creek between the San Joaquin River on the west and the crystalline basement rock of the Sierra Nevada foothills on the east. The Eastern San Joaquin Subbasin boundary to the south stretches along the San Joaquin County line and continues along the Stanislaus River into Calaveras County to the east. Geologic units in the Eastern San Joaquin Subbasin consist of consolidated rocks and unconsolidated deposits.

The Eastern San Joaquin Subbasin Hydrogeologic Conceptual Model has one principal aquifer that provides water for domestic, irrigation, and municipal water supply and is composed of three water production zones. The zones have favorable aquifer characteristics that deliver a reliable water resource because of their basin location and sand thickness. The zones are:

- **Shallow Zone** that consists of the alluvial sands and gravels of the Modesto, Riverbank, and Upper Turlock Lake Formations;
- **Intermediate Zone** that consists of the Lower Turlock Lake and Laguna Formations;
- **Deep Zone** that consists of the consolidated sands and gravels of the Mehrten Formation.

According to the 2014 Eastern San Joaquin Integrated Regional Water Management Plan, the subbasin has been historically in a critical condition of overdraft with the historic hydrologic record estimating net groundwater overdraft to be approximately 150,000 to 160,000 acre-feet per year

3.9 HYDROLOGY AND WATER QUALITY

(af/yr). Average groundwater use in the Eastern San Joaquin Subbasin is about 809,321 acre-feet per year (afy), of which approximately 95 percent is for agricultural uses and 5 percent for municipal and industrial uses. Historically, groundwater elevations have declined about 40 to 60 feet, averaging approximately 1.7 feet per year.

The San Joaquin County Flood Control and Water Conservation District (District) monitors groundwater levels and groundwater quality throughout San Joaquin County to identify the condition of the Eastern San Joaquin Subbasin. According to the Spring 2018 Groundwater Report, of the 135 wells able to be compared, 70 showed decreases in groundwater levels, 58 showed increases in groundwater levels, and 7 showed no change in groundwater elevations. The Eastern San Joaquin Subbasin is recharged by water from sources including streams, percolation of rainfall and irrigation water, inflow from other groundwater basins, and intentional recharge at numerous facilities. Intentional recharge is conducted in recharge ponds and on some farm fields with compensation to landowners.

GROUNDWATER RESOURCES

The City currently (2021) owns and operates 17 potable water wells and 31 irrigation wells. The City's annual potable groundwater production has steadily increased historically, reaching a peak of 14,900 acre-feet (AF) in 2004. Commissioning of the surface water treatment plant in 2005 decreased groundwater use considerably and currently supplies an average of 52 percent of the City's annual potable water supply. Since 2005, the City has constructed dedicated irrigation wells at many parks in an effort to reduce potable demand, which requires wellhead treatment at many wells for arsenic and other constituents to meet drinking water standards. In 2000, the City pumped about 1.2 AFY/acre, but has since decreased pumping to about 0.7 AFY/acre in 2010 and to about 0.5 AFY/acre in 2015. When the City annexes new areas, the safe yield remains unchanged; however, the volume of available groundwater increases with the annexation of land into the City. However, the 1 AFY/acre does not provide sufficient water supply for most projects.

Because there are numerous wells not owned by the City that are drawing from the ESJ Subbasin, this pumping could affect the amount of groundwater available to the City within the groundwater basin safe yield. Wells currently in operation not owned by the City include private domestic wells, agricultural wells, wells for school irrigation owned by the Manteca Unified School District (MUSD), and irrigation wells owned by SSJID, among others. Well completion reports obtained from DWR suggest that approximately 1,000 water wells have been constructed within the General Plan area since record keeping began in the 1960s; however, many may not have been registered as abandoned. It is anticipated that most domestic wells are no longer in use, though further investigation would be needed to verify this assumption.

It is known that MUSD and others own and operate wells within the City and its planning area. It is also assumed that pumping by MUSD and other known pumpers within the City and its planning area should be included in the groundwater safe yield accounting for purposes of this evaluation. Groundwater pumping by others may also be included in future updates of this initial estimate.

Metered pumping records for MUSD have not been provided. The MUSD is assumed to irrigate 25 percent of its parcels at 4 AFY/acre. According to the City's 2015 UWMP, the groundwater pumping from other ESJ entities were estimated as follows:

- Given that the MUSD has approximately 500 total acres, the total annual water use is estimated at approximately 500 AFY.
- According to SSJID pumping records for 2010 through 2015, an average of 4,860 AFY groundwater was pumped from SSJID-leased wells. Of this, an average of 2,860 AFY was pumped within the City of Manteca and the City's Planning Area. Therefore, groundwater pumping from SSJID-leased wells is projected to be 2,860 AFY.
- Other known industrial groundwater pumpers include Eckerts Cold Storage. The City treats over 130 AF of wastewater produced by Eckerts each year. Based upon this average, groundwater pumping is estimated at 150 AFY assuming a return-to-sewer ratio of approximately 85 percent.

Flooding

Flooding events can result in damage to structures, injury or loss of human and animal life, exposure of waterborne diseases, and damage to infrastructure. In addition, standing floodwater can destroy agricultural crops, undermine infrastructure and structural foundations, and contaminate groundwater.

The Project site lies within the larger area known as the Delta Basin, which historically was a tidal marsh formed in an overflow area of the Sacramento and San Joaquin Rivers. During the early part of the 20th century, over 80 percent of the Delta was reclaimed through construction of levees. There are over 1,100 miles of man-made levees protecting land in the Delta from flooding. The RD-17 levee system is designed to a 100-year flood protection standard. The Project site is currently located in Zone X, protected by levee, which by definition indicates an area protected by levees from the 1% annual chance flood. It is noted that a small portion of the southern boundary of the Development Area south of the RD 2094 dry levee is within the 100-year flood zone. Figure 3.9-2 shows the 100- and 500-year flood boundaries. The Project site is located within the 200-year floodplain as delineated on the most recent 200-year flood plain maps for Manteca.

Dam Failure

The Project site is located within dam failure inundation areas. Potential inundation from the New Melones Lake, San Luis Reservoir, and Tulloch Reservoir are shown in Figure 3.9-3. Dam failure is generally a result of structural instability caused by improper design or construction, instability resulting from seismic shaking, or overtopping and erosion of the dam. Larger dams that are higher than 25 feet or with storage capacities over 50 acre-feet of water are regulated by the California Dam Safety Act, which is implemented by the California Department of Water Resources, Division of Safety of Dams (DSD). The DSD is responsible for inspecting and monitoring these dams. The Act also requires that dam owners submit to the California Office of Emergency Services inundation maps for dams that would cause significant loss of life or personal injury as a result of dam failure.

The County Office of Emergency Services is responsible for developing and implementing a Dam Failure Plan that designates evacuation plans, the direction of floodwaters, and provides emergency information.

Stormwater Quality

Surface water quality is affected by point source and non-point source pollutants. Point source pollutants are those emitted at a specific point, such as a pipe, while non-point source pollutants are typically generated by surface runoff from diffuse sources, such as streets, paved areas, and landscaped areas. Point source pollutants are controlled with pollutant discharge regulations or waste discharge requirements (WDRs). Non-point source pollutants are more difficult to monitor and control, although they are important contributors to surface water quality in urban areas.

Stormwater runoff pollutants vary based on land use, topography, the amount of impervious surface, and the amount and frequency of rainfall and irrigation practices. Runoff in developed areas typically contains oil, grease, and metals accumulated in streets, driveways, parking lots, and rooftops, as well as pesticides, herbicides, particulate matter, nutrients, animal waste, and other oxygen-demanding substances from landscaped areas. The highest pollutant concentrations usually occur at the beginning of the wet season during the “first flush.”

303(d) Impaired Water Bodies

Water quality in the City is governed by the Central Valley Regional Water Quality Control Board (CVRWQCB), which sets water quality standards in their Water Quality Control Plan for the respective basins (Basin Plans). The Basin Plans identify beneficial uses for surface water and groundwater and establish water quality objectives to attain those beneficial uses.

Section 303(d) of the federal CWA requires States to identify waters that do not meet water quality standards or objectives and thus, are considered "impaired." Once listed, Section 303(d) mandates prioritization and development of a Total Maximum Daily Load (TMDL). The TMDL is a tool that establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby the basis for the States to establish water quality-based controls. The purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved.

According to the California Water Quality Control Monitoring Council, which is part of California Environmental Protection Agency, Natural Resources, there are many areas within the San Joaquin County which are considered Section 303(d) impaired waterbodies. Those areas in the regional vicinity of Manteca that are impaired are referred as Delta Waterways (Southern Portion) by the Water Quality Control Monitoring Council. This includes 3,125 acres listed as early as 1996 for Chlorpyrifos (Agriculture, Urban Runoff/Storm Sewers), DDT (Agriculture), Diazinon (Agriculture, Urban Runoff/Storm Sewers), Electrical Conductivity (Agriculture), Group A Pesticides (Agriculture), Invasive Species (Source Unknown), Mercury (Resource Extraction), and Unknown Toxicity (Source Unknown).

Storm water runoff may play a role in the water quality impairments described above. Runoff that occurs as overland flow across yards, driveways, and public streets is intercepted by the storm water

drainage system and conveyed to local drainages before eventually being routed to the Pacific. This storm water can carry pollutants that can enter the local waterways and result in the types of water quality impairments described above. Common sources of storm water pollution in the City include litter, trash, pet waste, paint residue, organic material (yard waste), fertilizers, pesticides, sediments, construction debris, metals from automobile brake pad dust, air pollutants that settle on the ground or attach to rainwater, cooking grease, illegally dumped motor oil, and other harmful fluids.

Potential hazards to surface water quality include the following nonpoint pollution problems: high turbidity from sediment resulting from erosion of improperly graded construction projects, concentration of nitrates and dissolved solids from agriculture or surfacing septic tank failures, contaminated street and lawn run-off from urban areas, and warm water drainage discharges into cold water streams.

The most critical period for surface water quality is following a rainstorm which produces significant amounts of drainage runoff into streams at low flow, resulting in poor dilution of contaminants in the low flowing stream. Such conditions are most frequent during the fall at the beginning of the rainy season when stream flows are near their lowest annual levels. Besides the greases, oils, pesticides, litter, and organic matter associated with such runoff, heavy metals such as copper, zinc, and cadmium can cause considerable harm to aquatic organisms when introduced to streams in low flow conditions.

Urban stormwater runoff was managed as a non-point discharge (a source not readily identifiable) under the Federal Water Pollution Control Amendments of 1972 (PL 92-500, Section 208) until the mid-1980s. However, since then, the Federal Environmental Protection Agency has continued to develop implementing rules which categorize urban runoff as a point source (an identifiable source) subject to NPDES permits. Rules now affect medium and large urban areas, and further rulemaking is expected as programs are developed to meet requirements of Federal water pollution control laws.

Surface water pollution is also caused by erosion. Excessive and improperly managed grading, vegetation removal, quarrying, logging, and agricultural practices all lead to increased erosion of exposed earth and sedimentation of watercourses during rainy periods. In slower moving water bodies these same factors often cause a buildup of siltation, which ultimately reduces the capacity of the water system to percolate and recharge groundwater basins, as well as adversely affecting both aquatic resources and flood control efforts.

3.9.2 REGULATORY SETTING

There are a number of regulatory agencies whose responsibility includes the oversight of the water resources of the state and nation including the Federal Emergency Management Agency, the US Environmental Protection Agency, the State Water Resources Board, and the Regional Water Quality Control Board. The following is an overview of the federal, state and local regulations that are applicable to the proposed Project.

FEDERAL

Clean Water Act

The CWA, initially passed in 1972, regulates the discharge of pollutants into watersheds throughout the nation. Section 402(p) of the act establishes a framework for regulating municipal and industrial stormwater discharges under the National Pollutant Discharge Elimination System (NPDES) Program. Section 402(p) requires that stormwater associated with industrial activity that discharges either directly to surface waters or indirectly through municipal separate storm sewers must be regulated by an NPDES permit.

The CWA establishes the basic structure for regulating the discharges of pollutants into the waters of the United States and gives the US Environmental Protection Agency (EPA) the authority to implement pollution control programs. The statute's goal is to regulate all discharges into the nation's waters and to restore, maintain, and preserve the integrity of those waters. The CWA sets water quality standards for all contaminants in surface waters and mandates permits for wastewater and stormwater discharges.

The CWA also requires states to establish site-specific water quality standards for navigable bodies of water and regulates other activities that affect water quality, such as dredging and the filling of wetlands. The following CWA sections assist in ensuring water quality for the water of the United States:

CWA Section 208 requires the use of best management practices (BMPs) to control the discharge of pollutants in stormwater during construction CWA Section 303(d) requires the creation of a list of impaired water bodies by states, territories, and authorized tribes; evaluation of lawful activities that may impact impaired water bodies, and preparation of plans to improve the quality of these water bodies. CWA Section 303(d) also establishes TMDLs, which is the maximum amount of a pollutant that a water body can receive and still safely meet water quality standards. CWA Section 404 authorizes the US Army Corps of Engineers to require permits that will discharge dredge or fill materials into waters in the US, including wetlands.

In California, the EPA has designated the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs) with the authority to identify beneficial uses and adopt applicable water quality objectives.

The SWRCB is responsible for implementing the CWA and does so through issuing NPDES permits to cities and counties through regional water quality control boards. Federal regulations allow two permitting options for storm water discharges (individual permits and general permits).

Federal Emergency Management Agency

FEMA operates the National Flood Insurance Program (NFIP). Participants in the NFIP must satisfy certain mandated floodplain management criteria. The National Flood Insurance Act of 1968 has adopted as a desired level of protection, an expectation that developments should be protected from floodwater damage of the Intermediate Regional Flood (IRF). The IRF is defined as a flood that

has an average frequency of occurrence on the order of once in 100 years, although such a flood may occur in any given year. Communities are occasionally audited by the California Department of Water Resources to insure the proper implementation of FEMA floodplain management regulations.

Flood Control Act

The Flood Control Act (1917) established survey and cost estimate requirements for flood hazards in the Sacramento Valley. All levees and structures constructed per the Act were to be maintained locally but controlled federally. All rights of way necessary for the construction of flood control infrastructure were to be provided to the Federal government at no cost.

Federal involvement in the construction of flood control infrastructure, primarily dams and levees, became more pronounced upon passage of the Flood Control Act of 1936.

Flood Disaster Protection Act (FDPA)

The FDPA of 1973 was a response to the shortcomings of the NFIP, which were experienced during the flood season of 1972. The FDPA prohibited Federal assistance, including acquisition, construction, and financial assistance, within delineated floodplains in non-participating NFIP communities. Furthermore, all Federal agencies and/or federally insured and federally regulated lenders must require flood insurance for all acquisitions or developments in designated Special Flood Hazard Areas (SFHAs) in communities that participate in the NFIP.

Improvements, construction, and developments within SFHAs are generally subject to the following standards:

- All new construction and substantial improvements of residential buildings must have the lowest floor (including basement) elevated to or above the base flood elevation (BFE).
- All new construction and substantial improvements of non-residential buildings must either have the lowest floor (including basement) elevated to or above the BFE or dry-floodproofed to the BFE.
- Buildings can be elevated to or above the BFE using fill, or they can be elevated on extended foundation walls or other enclosure walls, on piles, or on columns.
- Extended foundation or other enclosure walls must be designed and constructed to withstand hydrostatic pressure and be constructed with flood-resistant materials and contain openings that will permit the automatic entry and exit of floodwaters. Any enclosed area below the BFE can only be used for the parking of vehicles, building access, or storage.

National Flood Insurance Program (NFIP)

Per the National Flood Insurance Act of 1968, the NFIP has three fundamental purposes: *Better indemnify individuals for flood losses through insurance; Reduce future flood damages through State and community floodplain management regulations; and Reduce Federal expenditures for disaster assistance and flood control.*

While the Act provided for subsidized flood insurance for existing structures, the provision of flood insurance by FEMA became contingent on the adoption of floodplain regulations at the local level.

National Pollutant Discharge Elimination System

NPDES permits are required for discharges to navigable waters of the United States, which includes any discharge to surface waters, including lakes, rivers, streams, bays, oceans, dry stream beds, wetlands, and storm sewers that are tributary to any surface water body. NPDES permits are issued under the Federal CWA, Title IV, Permits and Licenses, Section 402 (33 USC 466 et seq.)

The RWQCB issues these permits in lieu of direct issuance by the Environmental Protection Agency, subject to review and approval by the EPA Regional Administrator (EPA Region 9). The terms of these NPDES permits implement pertinent provisions of the Federal CWA and the Act's implementing regulations, including pre-treatment, sludge management, effluent limitations for specific industries, and anti-degradation. In general, the discharge of pollutants is to be eliminated or reduced as much as practicable so as to achieve the CWA's goal of "fishable and swimmable" navigable (surface) waters. Technically, all NPDES permits issued by the RWQCB are also Waste Discharge Requirements issued under the authority of the CWA.

These NPDES permits regulate discharges from publicly owned treatment works, industrial discharges, stormwater runoff, dewatering operations, and groundwater cleanup discharges. NPDES permits are issued for five years or less, and are therefore to be updated regularly. The rapid and dramatic population and urban growth in the Central Valley Region has caused a significant increase in NPDES permit applications for new waste discharges. To expedite the permit issuance process, the SWRCB has adopted several general NPDES permits, each of which regulates numerous discharges of similar types of wastes. The SWRCB has issued general permits for stormwater runoff from industrial and construction sites statewide. Stormwater discharges from industrial and construction activities in the Central Valley Region can be covered under these general permits, which are administered jointly by the SWRCB and RWQCB.

Individual projects in the City that disturb more than one acre would be required to obtain NPDES coverage under the California General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit). The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) describing Best Management Practices (BMP) the discharger would use to prevent and retain storm water runoff. The SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a waterbody listed on the 303(d) list for sediment.

Rivers and Harbors Appropriation Act of 1899

One of the country's first environmental laws, this Act established a regulatory program to address activities that could affect navigation in Waters of the United States.

Water Pollution Control Act of 1972

The Water Pollution Control Act (WPCA) established a program to regulate activities that result in the discharge of pollutants to waters of the United States

STATE

California Fish and Wildlife Code

The California Department of Fish and Wildlife (CDFW) protects streams, water bodies, and riparian corridors through the streambed alteration agreement process under Section 1600 to 1616 of the California Fish and Game Code. The California Fish and Game Code establishes that "an entity may not substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river stream, or lake" (Fish and Game Code Section 1602(a)) without notifying the CDFW, incorporating necessary mitigation and obtaining a streambed alteration agreement. The CDFW's jurisdiction extends to the top of banks and often includes the outer edge of riparian vegetation canopy cover.

California Code of Regulations

California Code of Regulations (CCR) Title 22, Chapter 15, Article 20 requires all public water systems to prepare a Consumer Confidence Report for distribution to its customers and to the Department of Health Services. The Consumer Confidence Report provides information regarding the quality of potable water provided by the water system. It includes information on the sources of the water, any detected contaminants in the water, the maximum contaminants levels set by regulation, violations and actions taken to correct them, and opportunities for public participation in decisions that may affect the quality of the water provided.

California Government Code

Relevant sections of the California Government Code are identified below.

SECTION 65302

Revised safety elements must include maps of any 200-year flood plains and levee protection zones within the Planning Area.

SECTION 65584.04

Any land having inadequate flood protection, as determined by FEMA or DWR, must be excluded from land identified as suitable for urban development within the planning area.

SECTION 8589.4

California Government Code §8589.4, commonly referred to as the Potential Flooding-Dam Inundation Act, requires owners of dams to prepare maps showing potential inundation areas in the event of dam failure. A dam failure inundation zone is different from a flood hazard zone under the National Flood Insurance Program (NFIP). NFIP flood zones are areas along streams or coasts where storm flooding is possible from a "100-year flood." In contrast, a dam failure inundation zone is the area downstream from a dam that could be flooded in the event of dam failure due to an earthquake or other catastrophe. Dam failure inundation maps are reviewed and approved by the California

Office of Emergency Services (OES). Sellers of real estate within inundation zones are required to disclose this information to prospective buyers.

California Department of Health Services

The Department of Health Services, Division of Drinking Water and Environmental Management, oversees the Drinking Water Program. The Drinking Water Program regulates public water systems and certifies drinking water treatment and distribution operators. It provides support for small water systems and for improving their technical, managerial, and financial capacity. It provides subsidized funding for water system improvements under the State Revolving Fund (“SRF”) and Proposition 50 programs. The Drinking Water Program also oversees water recycling projects, permits water treatment devices, supports and promotes water system security, and oversees the Drinking Water Treatment and Research Fund for MTBE and other oxygenates.

Consumer Confidence Report Requirements

California Code of Regulations (CCR) Title 22, Chapter 15, Article 20 requires all public water systems to prepare a Consumer Confidence Report for distribution to its customers and to the Department of Health Services. The Consumer Confidence Report provides information regarding the quality of potable water provided by the water system. It includes information on the sources of the water, any detected contaminants in the water, the maximum contaminant levels set by regulation, violations and actions taken to correct them, and opportunities for public participation in decisions that may affect the quality of the water provided.

California Water Code

California’s primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Division 7 of the California Water Code) (Porter-Cologne Act). The Porter-Cologne Act grants the SWRCB and each of the RWQCBs power to protect water quality, and is the primary vehicle for implementation of California’s responsibilities under the Federal CWA. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites, and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

Each RWQCB must formulate and adopt a Water Quality Control Plan (Basin Plan) for its region. The regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that a RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

Assembly Bill 162

Assembly Bill (AB) 162 requires a general plan’s land use element to identify and annually review those areas covered by the general plan that are subject to flooding as identified by flood plain

mapping prepared by FEMA or DWR. The bill also requires, upon the next revision of the housing element, on or after January 1, 2009, the conservation element of the general plan to identify rivers, creeks, streams, flood corridors, riparian habitat, and land that may accommodate floodwater for purposes of groundwater recharge and stormwater management. By imposing new duties on local public officials, the bill creates a State-mandated local program.

This bill also requires, upon the next revision of the housing element, on or after January 1, 2009, the safety element to identify, among other things, information regarding flood hazards and to establish a set of comprehensive goals, policies, and objectives, based on specified information for the protection of the community from, among other things, the unreasonable risks of flooding.

Assembly Bill 70

AB 70 provides that a city or county may be required to contribute its fair and reasonable share of the property damage caused by a flood to the extent that it has increased the State's exposure to liability for property damage by unreasonably approving, as defined, new development in a previously undeveloped area, as defined, that is protected by a State flood control project, unless the city or county meets specified requirements.

Senate Bill 610 and Assembly Bill 901

The State Legislature passed SB 610 and AB 901 in 2001. Both measures modified the Urban Water Management Planning Act.

SB 610 requires additional information in an urban water management plan if groundwater is identified as a source of water available to an urban water supplier. It also requires that the plan include a description of all water supply projects and programs that may be undertaken to meet total projected water use. SB 610 requires a city or county that determines a project is subject to CEQA to identify any public water system that may supply water to the project and to request identified public water systems to prepare a specified water supply assessment. The assessment must include, among other information, an identification of existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed Project, and water received in prior years pursuant to these entitlements, rights, and contracts.

AB 901 requires an urban water management plan to include information, to the extent practicable, relating to the quality of existing sources of water available to an urban water supplier over given time periods. AB 901 also requires information on the manner in which water quality affects water management strategies and supply reliability. The bill requires a plan to describe plans to supplement a water source that may not be available at a consistent level of use, to the extent practicable. Additional findings and declarations relating to water quality are required.

Senate Bill 221

SB 221 adds Government Code Section 66455.3, requiring that the local water agency be sent a copy of any proposed residential subdivision of more than 500 dwelling units within five days of the subdivision application being accepted as complete for processing by the city or county. It also adds Government Code Section 66473.7, establishing detailed requirements for establishing whether a

“sufficient water supply” exists to support any proposed residential subdivisions of more than 500 dwellings, including any such subdivision involving a development agreement. When approving a qualifying subdivision tentative map, the city or county must include a condition requiring availability of a sufficient water supply. The applicable public water system must provide proof of availability. If there is no public water system, the city or county must undertake the analysis described in Government Code Section 66473.7. The analysis must include consideration of effects on other users of water and groundwater.

200-Year Flood Protection in the Central Valley

Both State policy and recently enacted State legislation (Senate Bill 5) call for 200-year (0.5% annual chance) flood protection to be the minimum level of protection for urban and urbanizing areas in the Central Valley. Senate Bill 5 (SB5) requires that the 200-year protection be consistent with criteria used or developed by the Department of Water Resources. SB 5 requires all urban and urbanizing areas in the Sacramento and San Joaquin Valleys to achieve 200-year flood protection in order to approve development. The new law restricts approval of development after 2016 if “adequate progress” towards achieving this standard is not met. Urban and urbanizing areas protected by State-Federal project levees cannot use “adequate progress” as a condition to approve development after 2028. Adequate progress is defined as meeting all of the following:

1. The project scope, cost and schedule have been developed;
2. In any given year, at least 90% of the revenues scheduled for that year have been appropriated and expended consistent with the schedule;
3. Construction of critical features is progressing as indicated by the actual expenditure of budget funds;
4. The city or county has not been responsible for any significant delay in completion of the system; and
5. The above information has been provided to the DWR and the Central Valley Flood Protection Board and the local flood management agency shall annually report on the efforts to complete the project.

State Updated Model Landscape Ordinance

Under AB 1881, the updated Model Landscape Ordinance requires cities and counties to adopt landscape water conservation ordinances by January 31, 2010 or to adopt a different ordinance that is at least as effective in conserving water as the updated Model Ordinance. Manteca Municipal Code Chapter 17.48, Landscaping, includes landscaping water use standards.

Water Quality Control Basin Plan

The Water Quality Control Plan for the Sacramento-San Joaquin River Basins (Basin Plan), amended by the CVRWQCB in 2018, identifies the beneficial uses of water bodies and provides water quality objectives and standards for waters of the Sacramento River and SJR basins, including the Delta.

State and federal laws mandate the protection of designated “beneficial uses” of water bodies. State law defines beneficial uses as “domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves” (Water Code Section 13050[f]). Additional protected beneficial uses of the SJR include groundwater recharge and freshwater replenishment.

State Water Resources Control Board Storm Water Strategy

The Storm Water Strategy is founded on the results of the Storm Water Strategic Initiative, which served to direct the State Water Board’s role in storm water resources management and evolve the Storm Water Program by a) developing guiding principles to serve as the foundation of the storm water program, b) identifying issues that support or inhibit the program from aligning with the guiding principles, and c) proposing and prioritizing projects that the Water Boards could implement to address those issues.

The State Water Board staff created a strategy-based document called the Strategy to Optimize Management of Storm Water (STORMS). STORMS includes a program vision, missions, goals, objectives, projects, timelines, and consideration of the most effective integration of project outcomes into the Water Board’s Storm Water Program.

LOCAL

City of Manteca General Plan

The City of Manteca General Plan includes several policies relevant to hydrology and water quality. General Plan policies and implementation measures applicable to the Project are identified below:

2023 GENERAL PLAN (EXISTING)

Policies: Domestic Water

- PF-P-4. Secure sufficient sources of water to meet the needs of the existing community and planned residential and commercial growth.
- PF-P-5. City will continue to rely principally on groundwater resources for its municipal water in the near term, will participate in the regional improvements to deliver surface water to augment the City's groundwater supply.
- PF-P-6. The City shall develop new water sources as necessary to serve new development.
- PF-P-7. The City shall develop new water storage facilities and major distribution lines as necessary to serve new development.
- PF-P-8. The City will provide water for future development to maintain a balance of jobs and housing.
- PF-P-9. City water services shall not be extended to unincorporated areas except in extraordinary circumstances. Existing commitments for City water service outside the City limits shall continue to be honored.
- PF-P-11. The City will develop and implement water conservation measures as necessary elements of the water system.

3.9 HYDROLOGY AND WATER QUALITY

- PF-P-12. The City shall continue to assess a water development fee on all new commercial, industrial, and residential development sufficient to fund system-wide capacity improvements. The water development fee schedule shall be periodically reviewed and revised as necessary.
- PF-P-13. Ensure that all new development provides for and funds a fair share of the costs for adequate water distribution, including line extensions, easements, and plant expansions.
- PF-P-14. The City shall continuously monitor water flows through the City's water system to identify areas of potential water loss and cases of under billing for water service and shall make improvements in the systems as necessary.
- PF-P-15. The City shall monitor water quality regularly and take necessary measures to prevent contamination.
- PF-P-17. The City of Manteca shall consider incremental increases in the demands on groundwater supply and water quality when reviewing development applications.

POLICIES: MAJOR DRAINAGE

- PF-P-26. The City shall continue to complete gaps in the drainage system in areas of existing development.
- PF-P-27. The City shall require the dedication and improvement of drainage detention basins as a condition of development approval according to the standards of the Drainage Master Plan. The responsibility for the dedication and improvement of detention basins shall be based on the prorated share of stormwater runoff resulting from each development.
- PF-P-28. Storm drainage systems within new development areas shall include open drainage corridors where feasible to supplement or replace an underground piped drainage system. The drainage systems would provide for short-term storm water detention, storm water conveyance for storm waters exceeding a 10-year event, storm water quality treatment, bike and pedestrian paths, and visual open space within neighborhoods. The width and length of the corridors would be determined by the stormwater management requirements. The drainage systems would provide a pedestrian connection between parks and access to open space from residential neighborhoods. The neighborhoods would be designed with homes oriented to, rather than backing on the open space corridor.

POLICIES: FLOOD SAFETY

- S-P-9. The City shall require evaluation of potential flood hazards prior to approval of development projects to determine whether the proposed development is reasonably safe from flooding and consistent with California Department of Water Resources (DWR) Urban Level of Flood Protection Criteria. The City shall not approve the execution of a development agreement, a tentative map, or a parcel map for which a tentative map is not required, or a discretionary permit or other discretionary entitlement that would result in the construction of a new building, or construction that would result in an increase in allowed occupancy for an existing building, or issuance of a ministerial permit that would result in the construction of a new residence for property that is located within a 200-year flood hazard zone, unless

the adequacy of flood protection as described in Government Code §65865.5(a), 65962(a), or 66474.5(a), has been demonstrated.

- S-P-10. The City may permit new development in areas not identified as “urban” or “urbanizing” provided that they are protected from 100-year flooding by FEMA-accredited levees or equivalent flood protection as shown on an adopted FEMA FIRM, a FEMA-approved Letter of Map Revision (LOMR) or a Conditional Letter of Map Revision (CLOMR), subject to conditions specified in the CLOMR.
- S-P-11. The City may permit new development in areas not protected by FEMA-accredited 100-year levees subject to all applicable requirements of Manteca Municipal Code Chapter 8.30 (Floodplain Management), the California Building Standards Code as adopted by the City, and the latest promulgated FEMA standards for development in the 100-year floodplain, provided that new development approval will not cause the project site or area to be defined as “urban” or “urbanizing.”
- S-P-16. Provide technical assistance and encourage landowners within the FEMA Special Flood Hazard Area (100-year floodplain) to purchase and maintain flood insurance.
- S-P-17. Ensure that the impacts of potential flooding are adequately analyzed when considering areas for future urban expansion.
- S-P-18. Provide opportunities for review of and comment by the reclamation districts, Manteca Police Services, Manteca Fire Department, the Lathrop Manteca Fire District for comment during new development project review.
- S-P-19. Consider the risks of catastrophic dam failure in the planning and environmental review of new development projects.
- S-P-20. Incorporate riparian habitat protection, mitigation or enhancement into flood protection improvements to maintain existing floodwater capacity where feasible.
- S-P-21. Combine flood control, recreation, water quality, and open space functions where feasible.
- S-P-22. Discourage large continuous paved areas unless provided with engineered drainage facilities, and where feasible, require the use of pervious paving materials.
- S-P-24. The City shall require, for areas protected by levees, all new developments to include a notice within the deed that the property is protected from flooding by a levee and that the property can be subject to flooding if the levee fails or is overwhelmed by floodwater flow.

POLICIES: WATER CONSERVATION

- RC-P-1. The City shall continue to implement water conservation standards for all commercial and industrial development, and for all existing and new residential development.
- RC-P-3. The City shall protect the quantity of Manteca’s groundwater.
- RC-P-4. The City shall require water conservation in both City operations and private development to minimize the need for the development of new water sources.

3.9 HYDROLOGY AND WATER QUALITY

POLICIES: SOILS AND EROSION CONTROL

- RC-P-10. Minimize soil erosion and loss of topsoil from land development activities, wind, and water flow.

POLICIES: WATER QUALITY

- RC-P-11. Minimize sedimentation and loss of topsoil from soil erosion.
- RC-P-12. Minimize pollution of waterways and other surface water bodies from urban runoff.
- RC-P-13. Protect the quality of Manteca's groundwater.
- RC-P-15. Once sewer service has been extended to incorporated areas, new septic tanks shall not be permitted.

GENERAL PLAN UPDATE

Policies: Safety Element

- S-3.3 Require evaluation of potential flood hazards prior to approval of development projects to determine whether the proposed development is reasonably safe from flooding and consistent with California Department of Water Resources Urban Level of Flood Protection Criteria (ULOP). The City shall not approve the execution of a development agreement, a tentative map, or a parcel map for which a tentative map is not required, or a discretionary permit or other discretionary entitlement that would result in the construction of a new building, or construction that would result in an increase in allowed occupancy for an existing building, or issuance of a ministerial permit that would result in the construction of a new residence for property that is located within a 200-year flood hazard zone, unless the adequacy of flood protection as described in Government Code §65865.5(a), 65962(a), or 66474.5(a), has been demonstrated.
- S-3.4 New development may be permitted in areas not identified as "urban" or "urbanizing" provided that:
 - Such areas are protected from 100-year flooding by FEMA-accredited levees or equivalent flood protection as shown on an adopted FEMA Flood Insurance Rate Map, a FEMA-approved Letter of Map Revision or a Conditional Letter of Map Revision, subject to conditions specified in the letter; or
 - Where not protected by FEMA-accredited 100-year levees, such areas are subject to all applicable requirements of Municipal Code Chapter 8.30 (Floodplain Management), the California Building Standards Code as adopted by the City, and the latest promulgated FEMA standards for development in the 100-year floodplain, provided that new development approval will not cause the project site or area to be defined as "urban" or "urbanizing."

Policies: Resource Conservation Element

- RC-1.1 Where feasible, protect and enhance surface water resources in creeks, streams, channels, seasonal and permanent marshland, wetlands, sloughs, riparian habitat, and vernal pools through sound land use planning, community design, and site planning.

- RC-1.2 Require water conservation in both City operations and private development to minimize the need for the development of new water sources.
- RC-1.3 Require use of recycled water and treated wastewater to the extent allowable and feasible, including use for irrigation, agriculture, industrial, and groundwater recharge purposes, when such opportunities become available.
- RC-1.4 Encourage the rehabilitation of culverted or open existing channelized waterways to a more natural condition, as feasible, to remove concrete linings and allow for a connection between the stream channel and the natural water table. Avoid creating additional culverted or open channelized waterways, unless no other alternative is available to protect human health, safety, and welfare.
- RC-1.7 Maximize stormwater filtration and/or infiltration in areas that are not subject to high groundwater by maximizing the natural drainage patterns and the retention of natural vegetation and other pervious surfaces.
- RC-1.8 Minimize pollution of water resources, including the San Joaquin River, other waterways, and the groundwater basin, from urban runoff, soil erosion, and sedimentation.
- RC-1.9 Require discretionary projects and flood control and storm water conveyance projects to consider effects on storm water quality and to integrate best management practices, including the integration of natural features such as bioswales, vegetation, and retention ponds to remove surface water pollutants to the greatest extent feasible, while ensuring that these features adequately convey and control storm water to protect human health, safety, and welfare.
- RC-1.10 Where feasible, encourage and support multipurpose detention basins that provide water quality protection, storm water detention, open space amenities, and recreational amenities.
- RC-2.2 Prohibit new septic tanks where sewer service has been extended to incorporated areas.
- RC-2.1 Protect the quantity and quality of Manteca's groundwater.
- RC-2.2 Manage groundwater as part of a broader integrated approach that includes surface water, conservation, water quality, reuse, environmental stewardship, and other water management strategies.
- RC-2.3 Operate the City's well system in such a manner as to not exceed the sustainable yield of the local groundwater aquifer.
- RC-2.4 Recognize the importance of open space lands, including agricultural lands, parks, greenways, lakes.
- RC-2.5 Conserve groundwater recharge features, encourage new groundwater recharge opportunities, and protect aquifers from degradation of water quality and reduction of recharge.

- RC-2.6 Promote the use of permeable surface materials and provide for ample areas of open space, including agricultural land, parks and greenways, and naturalized land, in order to decrease surface runoff and promote groundwater recharge.
- RC-2.9 Consider the effects of development on groundwater quality, and implement measures to reduce water contamination.

Implementation: Resource Conservation Element

- RC-2a Participate in regional groundwater management efforts with the Eastern San Joaquin County Groundwater Basin Authority and other local agencies to implement the Integrated Regional Water Management Plan and to review and update the plan as necessary to meet the federal and state requirements.
- RC-2b Coordinate with water purveyors and water users to manage supplies to avoid long-term overdraft, water quality degradation, land subsidence, and other potential problems.
- RC-2c Continue to monitor City wells to track local groundwater levels and monitor water quality. Share data with state and regional agencies and the public to ensure that regional groundwater sustainability planning efforts include the most complete and comprehensive data available.
- RC-2d Investigate opportunities to utilize recycled water supplies to assist with groundwater recharge.
- RC-2e Monitor groundwater resources and consider locating required detention basins where recharge potential is determined to be high.
- RC-2f Initiate and support a range of educational and public outreach programs to inform residents, agriculture, businesses and other groundwater users of best management practices in the areas of efficient water use, water conservation, and increasing groundwater recharge. Make these resources available to the public through the City's website.
- RC-2h Require development projects and infrastructure projects to implement low impact development practices, when appropriate, such as techniques that increase surface infiltration in landscaped, turf, and undeveloped areas.

City of Manteca Municipal Code

TITLE 17 CHAPTER 17.30 200-YEAR FLOODPLAIN OVERLAY ZONE

Section 17.30.040, 200-Year Floodplain (F-200) Overlay Zone, of Chapter 17.30 of the Municipal Code delineates the extents of the 200-Year Floodplain and is intended to comprise all known land subject to 200-year flooding within the City. All lands within the F-200 Overlay Zone shall be required to comply with all provisions of subsection C. The purpose of the 200-Year Floodplain (F-200) Overlay Zone is to comply with provisions of State law that require the City to make specific findings prior to approving certain projects located within a 200-year flood hazard area. The F-200 Zone establishes a process for the consideration and regulation of areas subject to 200-year flooding that require special planning to provide for appropriate development.

Subsection C of Section 17.30.040 states that:

The review authority shall not approve the execution of a development agreement, a tentative map, or a parcel map for which a tentative map is not required, or a discretionary permit or other discretionary entitlement that would result in the construction of a new building, or construction that would result in an increase in allowed occupancy for an existing building, or issuance of a ministerial permit that would result in the construction of a new residence for property that is located within the F-200 Zone unless the review authority finds, based on substantial evidence in the record, one of the following:

- 1. The facilities of the State Plan of Flood Control or other flood management facilities protect the property to the urban level of flood protection in urban and urbanizing areas;*
- 2. The City has imposed conditions on a development agreement, map, permit, or entitlement that will protect the property to the urban level of flood protection in urban and urbanizing areas;*
- 3. The local flood management agency has made adequate progress (as defined in California Government Code Section 65007) on the construction of a flood protection system that will result in flood protection equal to or greater than the urban level of flood protection in urban or urbanizing areas; or*
- 4. The property is located in an area of potential flooding of three feet or less from a storm event that has a one in two hundred chance of occurring in any given year, from sources other than local drainage, in urban and urbanizing areas.*

TITLE 13 CHAPTER 13.28 STORM WATER MANAGEMENT DISCHARGES

The purpose of this chapter is to establish minimum storm water management requirements and controls to protect and safeguard the general health, safety and welfare of the public residing in watersheds within the city of Manteca. This chapter seeks to meet that purpose through the following objectives:

- A. Minimize increases in storm water runoff from any development in order to reduce flooding, siltation and stream bank erosion and maintain the integrity of drainage channels;
- B. Minimize increases in non-point source pollution caused by storm water runoff from development that would otherwise degrade local water quality;
- C. Minimize the total annual volume of surface water runoff that flows from any specific site during and following development to not exceed the pre-development hydrologic regime to the maximum extent practicable; and
- D. Reduce storm water runoff rates and volumes, soil erosion and non-point source pollution wherever possible, through storm water management controls and to ensure that these management controls are properly maintained and pose no threat to public safety. (Ord. 1253 § 1, 2004)

TITLE 13 CHAPTER 13.28 SECTION 13.28.060 DISCHARGES IN VIOLATION OF INDUSTRIAL OR CONSTRUCTION ACTIVITY NPDES STORM WATER DISCHARGE PERMIT.

- A. Any person subject to an industrial NPDES storm water discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the director upon inspection of the facility, during any enforcement proceeding or action or for any other reasonable cause.
- B. Any person subject to a construction activity NPDES storm water discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the director prior to or as a condition of a subdivision map, site plan, building permit or development or improvement plan; upon inspection of the facility; during any enforcement proceeding or action; or for any other reasonable cause. Prior to issuance of a construction permit a copy of the Notice of Intent (NOI) and the Storm Water Pollution Prevention Plan (SWPPP) shall be submitted to the city. (Ord. 1253 § 1, 2004).

Utility Master Plans

The City of Manteca maintains a variety of Master Plan documents that guide the design, development, and maintenance of the utilities within the city limits. This includes the City's *Storm Drain Master Plan* (2013).

Municipal Storm Water Program

The discharge of storm water within the City of Manteca is regulated by the SWRCB Water Quality Order No. 2013-0001-DWQ NPDES General Permit, WDRs for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4), collectively referred to as the Phase II Small MS4 General Permit. The City of Manteca is a Phase II MS4 permittee under the NPDES General Permit.

The City's Engineering Department oversees the Municipal Storm Water Program and works in conjunction with the Planning and Public Works Departments to implement requirements of the Phase II Small MS4 General Permit. Engineering and Planning Department staff review new and re-development projects for compliance with State and Regional Water Board requirements for storm water management and control. The Cities of Lathrop, Lodi, Manteca, Patterson, and Tracy, and County of San Joaquin collaborated to prepare the Multi-Agency Post-Construction Stormwater Standards Manual (Stormwater Standards Manual), dated June 2015. The Stormwater Standards Manual establishes post-construction standards to address stormwater quality for regulated new development and redevelopment projects in compliance with the requirements of Order No. 2013-0001-DWQ.

NPDES Waste Discharge Requirements – Wastewater Quality Control Facility

On April 17, 2015, the Regional Water Quality Control Board, Central Valley Region, adopted Waste Discharge Requirements Order No. R5-2015-0026, (Order) NPDES No. CA0081558, prescribing waste discharge requirements for the City of Manteca Wastewater Quality Control Facility.

3.9.3 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 hydrology and water quality if it will:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
- 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:
 - Result in substantial erosion or siltation on- or off-site;
 - Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
 - Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
 - Impede or redirect flood flows.
- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

IMPACTS AND MITIGATION

Impact 3.9-1: The proposed Project has the potential to violate water quality standards or waste discharge requirements during construction. (Less than Significant)

According to the United States Environmental Protection Agency, polluted stormwater runoff is a leading cause of impairment to the nearly 40 percent of surveyed U.S. water bodies which do not meet water quality standards. Over land or via storm sewer systems, polluted runoff is discharged, often untreated, directly into local water bodies. Soil erosion is one of the most common sources of polluted stormwater runoff during construction activities. When left uncontrolled, storm water runoff can erode soil and cause sedimentation in waterways, which collectively result in the destruction of fish, wildlife, and aquatic life habitats; a loss in aesthetic value; and threats to public health due to contaminated food, drinking water supplies, and recreational waterways.

Mandated by Congress under the Clean Water Act, the NPDES Stormwater Program is a comprehensive two-phased national program for addressing the non-agricultural sources of

3.9 HYDROLOGY AND WATER QUALITY

stormwater discharges which adversely affect the quality of our nation's waters. The program uses the National Pollutant Discharge Elimination System (NPDES) permitting mechanism to require the implementation of controls designed to prevent harmful pollutants, including soil erosion, from being washed by stormwater runoff into local water bodies. The construction activities for the proposed Project would be governed by the General Permit 2009-0009-DWQ (amended by 2010-0014-DWQ & 2012-0006-DWQ), which states:

"...Particular attention must be paid to large, mass graded sites where the potential for soil exposure to the erosive effects of rainfall and wind is great and where there is potential for significant sediment discharge from the site to surface waters. Until permanent vegetation is established, soil cover is the most cost-effective and expeditious method to protect soil particles from detachment and transport by rainfall. Temporary soil stabilization can be the single most important factor in reducing erosion at construction sites. The discharger is required to consider measures such as: covering disturbed areas with mulch, temporary seeding, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation, and permanent seeding. These erosion control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. Erosion control BMPs should be the primary means of preventing storm water contamination, and sediment control techniques should be used to capture any soil that becomes eroded..."

General Permit 2009-0009-DWQ (amended by 2010-0014-DWQ & 2012-0006-DWQ) further states that:

"Sediment control BMPs should be the secondary means of preventing storm water contamination. When erosion control techniques are ineffective, sediment control techniques should be used to capture any soil that becomes eroded. The discharger is required to consider perimeter control measures such as: installing silt fences or placing straw wattles below slopes. These sediment control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed...Inappropriate management of run-on and runoff can result in excessive physical impacts to receiving waters from sediment and increased flows. The discharger is required to manage all run-on and runoff from a project site. Examples include: installing berms and other temporary run-on and runoff diversions...All measures must be periodically inspected, maintained and repaired to ensure that receiving water quality is protected. Frequent inspections coupled with thorough documentation and timely repair is necessary to ensure that all measures are functioning as intended..."

Grading, excavation, removal of vegetation cover, and loading activities associated with construction activities could temporarily increase runoff, erosion, and sedimentation. Construction activities could also result in soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas. To ensure that construction activities are covered under General Permit 2009-0009-DWQ (amended by 2010-0014-DWQ & 2012-0006-DWQ), projects in California must prepare a Stormwater Pollution Prevention Plan (SWPPP) containing Best Management Practices (BMPs) to reduce erosion and sediments to

meet water quality standards. Such BMPs may include: temporary erosion control measures such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover. The BMPs and overall SWPPP is reviewed by the RWQCB as part of the permitting process. The SWPPP, once approved, is kept on site and implemented during construction activities and must be made available upon request to representatives of the RWQCB and/or the lead agency.

In accordance with the NPDES Stormwater Program, Mitigation Measure 3.9-1 requires an approved SWPPP designed to control erosion and the loss of topsoil to the extent practicable using BMPs that the RWQCB has deemed effective in controlling erosion, sedimentation, runoff during construction activities. The RWQCB has stated that these erosion control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. The specific controls are subject to the review and approval by the RWQCB and are existing regulatory requirements. Implementation of Mitigation Measures 3.9-1 would ensure that the proposed Project would have a **less than significant** impact relative to this topic.

MITIGATION MEASURE(S)

Mitigation Measure 3.9-1: *Prior to clearing, grading, and disturbances to the ground such as stockpiling, or excavation for each phase of the Project, the Project proponent shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit Order 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ). The SWPPP shall be designed with Best Management Practices (BMPs) that the RWQCB has deemed as effective at reducing erosion, controlling sediment, and managing runoff. These include: covering disturbed areas with mulch, temporary seeding, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation, and permanent seeding. Sediment control BMPs, installing silt fences or placing straw wattles below slopes, installing berms and other temporary run-on and runoff diversions. These BMPs are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. Final selection of BMPs will be subject to approval by City of Manteca and the RWQCB. The SWPPP will be kept on site during construction activity and will be made available upon request to representatives of the RWQCB.*

Impact 3.9-2: The proposed Project has the potential to violate water quality standards or waste discharge requirements during operation. (Less than Significant with Mitigation)

The long-term operations of the proposed Project (all phases) could result in long-term impacts to surface water quality from urban stormwater runoff. The proposed Project would result in new impervious areas associated with roadways, driveways, and residential structures. Normal activities in residentially developed areas include the use of various automotive petroleum products (i.e. oil, grease, and fuel), common household hazardous materials, heavy metals, pesticides, herbicides, fertilizers, and sediment. Within urban areas, these pollutants are generally called nonpoint source pollutants. The pollutant levels vary based on factors such as time between storm events, volume of storm event, type of uses, and density of people.

The drainage collection system within the City of Manteca consists of gravity pipes, retention/detention/surge basins, pump station, force mains, outfalls, and irrigation canals/ditches. The collection system for the proposed Project will be designed to contain the 10-year storm event within the pipe system and basins while maintaining one foot of freeboard. The streets will be designed in combination with the pipe system to convey the 100-year storm event to the basins and pump station in accordance with City standards. The final design of all onsite and offsite storm drain infrastructure improvements is subject to the review and approval of the City of Manteca.

As discussed in Section 2.0, development of the proposed Project would include construction of a new storm drainage system, including a drainage collection system, and detention basins. The proposed public storm drainage and water quality system is planned to function independently from surrounding developments. An internal layout of stormwater collection pipes with various sizes, as necessary, will be installed within the Project site. It is noted that the locations of the proposed detention basins are conceptual and will be finalized during the design of Improvement Plans. A system of drainage swales may be included to treat and convey collected stormwater. All on-site storm drainage runoff will be collected through drain inlets in the landscaped areas and catch basins along the streets and within properties, and conveyed via surface swales and underground trunk lines to detention and water quality basins. The conveyance systems and detention basins may include facilities designed to address water quality standards and requirements. Discharge from the basins will be conveyed through controlled flow pumping facilities to existing City of Manteca and SSJID dual use main storm drain laterals. The duration of the discharge will comply with City of Manteca standards. The water quality detention basins will be designed to comply with SWRCB and City of Manteca specifications and standards.

Conveyance of the detained storm drainage runoff from the proposed on-site dual use detention basins may be via either gravity flow drainage lines or pumped to existing realigned and upgraded City and SSJID dual use Laterals. Stormwater quality standards imposed and monitored by the Environmental Protection Agency (EPA) and the SWRCB through the City's NPDES permit require treatment of stormwater runoff prior to its release into natural drainage features or dual use South SSJID and City Laterals. Stormwater quality is an integral part of the City's stormwater management system.

The ongoing operational phase of the proposed Project requires the final discharge of stormwater into the on-site detention basins. The discharge of stormwater must be treated through BMPs prior to its discharge. The City of Manteca implements best management practices to the extent they are technologically achievable to prevent and reduce pollutants.

Additionally, there are various non-structural and structural stormwater BMPs that can be implemented to reduce water pollution. Non-structural BMPs are typically aimed at prevention of pollution through public education and outreach. Non-structural BMPs include: school educational programs, newsletters, website information, commercial, billboards/advertisements, river cleanups, and storm drain stenciling. Structural BMPs are aimed at the physical collection, filtering, and detaining of stormwater. Structural BMPs include items such as drop inlet filters, vault filters, hydrodynamic separators, surface detention basins, and underground detention facilities.

The following Mitigation Measures would ensure that BMPs are implemented to reduce the amount of pollution in stormwater discharged from the Project site. Therefore, Implementation of the proposed Project would have a **less than significant** impact relative to this topic.

MITIGATION MEASURE(S)

Mitigation Measure 3.9-2: *The Project applicant shall implement the following nonstructural BMPs that focus on preventing pollutants from entering stormwater:*

- *Pollution Prevention/Good Housekeeping*
 - *Prior to clearing, grading, and disturbances to the ground such as stockpiling, or excavation in each phase of the Project, the Project proponent shall develop a spill response and prevention plan as a component of (1) SWPPPs prepared for construction activities, (2) SWPPPs for facilities subject to the NPDES Stormwater Permit, and (3) spill prevention control and countermeasure plans for qualifying facilities. The spill response and prevention plan shall be implemented during all construction activities.*
 - *Streets and parking lots in all non-residential portions, including the right-of-way, of the Project site shall be swept at least once every two weeks.*
- *Operation and Maintenance (O&M) of Treatment Controls*
 - *Prior to clearing, grading, and disturbances to the ground such as stockpiling, or excavation in each phase of the Project, the Project proponent shall develop an Operation and Maintenance (O&M) Plan for the storm drainage facilities to ensure long-term performance. The O&M plan shall incorporate the manufacturers' recommended maintenance procedures and include (1) provisions for debris removal, (2) guidance for addressing public health or safety issues, and (3) methods and criteria for assessing the efficacy of the storm drainage system. An annual report shall be submitted to the City certifying that maintenance of the facilities was conducted according to the O&M plan.*

Mitigation Measure 3.9-3: *The Project applicant shall implement the following structural BMPs that focus on preventing pollutants from entering stormwater, or alternative BMPs approved by the City of Manteca. Implementation of BMPs apply to all non-residential parcels, including the right-of-way, as appropriate.*

- *Extended Detention Facilities: Extended detention refers to the facilities proposed for the Project site that would detain and temporarily store stormwater runoff to reduce the peak rates of discharge to the storm drainage system. Detention of stormwater allows particles and other pollutants to settle and thereby potentially reduce concentrations and mass loading of contaminants in the discharge.*
- *Grassed Swales: A swale is a vegetated, open channel management practice designed to treat and attenuate stormwater runoff for a specified water quality volume. Stormwater runoff flowing through these channels is treated by being filtered through vegetation in the channel, through a subsoil matrix, and/or through infiltration into the underlying soils.*

3.9 HYDROLOGY AND WATER QUALITY

Swales can be used throughout the proposed Project area where feasible in the landscape design to treat parking lot runoff.

- *Proprietary Devices: There are a variety of commercially available stormwater treatment devices designed to remove contaminants from drainage once flows enter the conveyance systems. StormFilter™ units, or equivalent filtration-type systems, and Bioswales are recommended for streets and parking areas. Drop inlet filters should also be used to control drainage runoff water quality.*

Impact 3.9-3: The proposed Project has the potential to substantially deplete groundwater supplies or interfere substantially with groundwater recharge. (Less than Significant)

The proposed Project would result in new impervious surfaces and could reduce rainwater infiltration and groundwater recharge. Infiltration rates vary depending on the overlying soil types. In general, sandy soils have higher infiltration rates and can contribute to significant amounts of ground water recharge; clay soils tend to have lower percolation potential; and impervious surfaces such as pavement, significantly reduce infiltration capacity and increase surface water runoff.

Table 3.9-2 identifies the soils in the Project site and the soils infiltration rate. Most of the soils contained on the Project site have a hydrologic rating of “A”, which is indicative of soils having a high infiltration rate (low runoff potential) when thoroughly wet; with the exception of a few soils with a hydrologic rating of “C” and “D,” indicating that the soils have a low infiltration rate (high runoff potential). Figure 3.2-2 identifies project site soils.

TABLE 3.9-2: SOILS HYDROLOGIC RATING

<i>UNIT SYMBOL</i>	<i>NAME</i>	<i>SOURCE MATERIAL</i>	<i>RATING</i>
108	Arents, saline-sodic	alluvium derived from granitic rock sources	C
109	Bisgani loamy coarse sand	alluvium derived from granitic rock sources	A
142	Delhi loamy sand	wind modified material weathered from granitic rock sources	A
145	Dello loamy sand	alluvium derived from granitic rock sources	A
160	Galt clay	alluvium derived from granitic rock sources	D
196	Manteca fine sandy loam	alluvium derived from mixed rock sources	C
255	Tinnin loamy coarse sand	alluvium derived from granitic rock sources	A
266	Veritas fine sandy loam	alluvium derived from mixed rock sources	A

SOURCE: NCRS 2019

The infiltration rate of the soils on the Project site is primarily considered high. Development of the Project site with impervious surfaces could reduce rainwater infiltration and groundwater recharge

when compared to existing conditions. The park and open space areas totaling approximately 9.62 acres will remain largely pervious. The collection of rainwater for those areas of impervious surfaces will be routed into the proposed Project's storm drainage system and eventually flow into the San Joaquin River. The exact design of the drainage basin is not known at this time; therefore, it is not known whether the drainage basin will percolate or not (i.e. unlined or lined).

The project site is located in the Eastern San Joaquin County Groundwater Basin. Most of the fresh groundwater is encountered at depths of less than 1,000 feet, and most of this shallow groundwater is unconfined. The Victor formation is the uppermost formation and extends from the ground surface to a maximum depth of about 150 feet. Compared to the underlying formations, the Victor formation is generally more permeable and the groundwater is typically unconfined. The underlying Laguna formation includes discontinuous lenses of unconsolidated to semi-consolidated sands and silts interspersed with lesser amounts of clay and gravel. The Laguna formation is hydraulically connected to the Victor formation and is estimated to be 750 to 1,000 feet thick. Moderate permeability has been reported within the Laguna formation with some highly permeable coarse-grained beds. Most of the municipal and industrial wells in the Manteca area penetrate through the Victor formation into the Laguna formation.

As previously stated, the Eastern San Joaquin Subbasin is recharged by water from sources including streams, percolation of rainfall and irrigation water, inflow from other groundwater basins, and intentional recharge at numerous facilities. Intentional recharge is conducted in recharge ponds and on some farm fields with compensation to landowners. While the Project site's soils have a high infiltration rate based on the relative percentage of sands, the Project site is not considered an intentional recharge facility. While the proposed Project would reduce the amount of impervious surfaces within the project site, it is not anticipated that the proposed development would interfere with groundwater recharge, as much of the groundwater recharge in the basin occurs in the sand and gravels along the San Joaquin River from Sierra snowmelt flowing downstream.

As discussed in Section 3.15, Utilities and Service Systems, the City's projected future water demands and supplies through 2045. Water supplies to meet future demands include surface water purchased from SSJID, City produced groundwater and recycled water. The City's water supply is projected to increase through 2045, primarily due to implementation of Phase 2 of the SCWSP, which is anticipated to occur around 2040. Future City groundwater pumping is estimated based on the safe yield for all groundwater pumping within the City's planning area, less estimated groundwater pumping by other users. Recycled water demand projections assumed decreased use over time of water for crop irrigation, and implementation of a tertiary-treated irrigation supply in the future.

For the reasons mentioned above, the proposed Project would not cause the substantial depletion of groundwater supplies or interfere substantially with groundwater recharge. As such, implementation of the proposed Project would have a **less than significant** impact relative to this topic.

Impact 3.9-4: The proposed Project has the potential to alter the existing drainage pattern in a manner which would result in substantial erosion, siltation, flooding, or polluted runoff. (Less than Significant)

Currently, runoff from within the Project site is collected in a system of shallow agricultural and roadside ditches. Public storm drain facilities are not currently installed in the agricultural fields.

Planned urbanization of the Project site would result in changes to land use, natural vegetation, and infiltration characteristics, and would introduce new sources of water pollutants, producing “urban runoff.” Pollutants contained within urban runoff may include, but are not limited to sediment, oxygen-demanding substances (e.g., organic matter), nutrients (primarily nitrogen and phosphorus), heavy metals, bacteria, oil and grease, and toxic chemicals that can degrade receiving waters. Urban runoff pollutants may stem from erosion of disturbed areas, deposition of atmospheric particles derived from automobile or industrial sources, corrosion or decay of building materials, rainfall contact with toxic substances, decomposing plant materials, animal excrement, and spills of toxic materials on surfaces which receive rainfall and generate runoff. New residential uses within the Project site may also generate urban runoff from streets and driveways. Yard areas may produce fertilizer wastes and/or bacterial contamination from animal excrement.

As previously stated, the 2013 Storm Drain Master Plan (SDMP 2013) provides a comprehensive planning document to guide improvement and expansion of the City’s storm drainage system to meet current and future needs in a safe and reliable manner while maintaining compliance with all applicable regulations. Five planning zones have been identified to define the capital improvements needed to serve future growth: Zones 30, 32, 34, 36 and 39. With the exception of drainage Zone 39, all drainage zones are located in the SSJID service area. The Project site is located in Zone 36 and is currently served by the SSJID.

The proposed stormwater collection system functions through storm drainage collection, treatment, detention, and discharge. The exact sizing of the underground piping and basin will be engineered during the preparation of the improvement plans. The project proposes an on-site drainage system to collect the developed condition runoff in a combination of underground pipes and surface vegetated swales and then discharge the runoff into the four proposed dual use detention ponds. The dual use detention ponds have been designed with surface areas and volumes in compliance with City standards. Discharge from the basins will be conveyed through controlled flow pumping facilities to existing City of Manteca and SSJID dual use main storm drain laterals. The collected runoff will be treated prior to discharge. The proposed storm drainage collection and detention system will be subject to the State Water Resources Control Board Requirements (SWRCB) and City of Manteca regulations, including: Manteca Storm Drain Master Plan, 2013; Phase II, National Pollutant Discharge Elimination System (NPDES) Permit Requirements; NPDES-MS4 Permit Requirements; and LID Guidelines.

Stormwater quality standards imposed and monitored by the Environmental Protection Agency (EPA) and the SWRCB through the City’s NPDES permit require treatment of stormwater runoff prior to its release into natural drainage features or dual use South San Joaquin Irrigation District (SSJID)

and City Laterals. Stormwater quality is an integral part of the City's stormwater management system. Most existing stormwater is pumped into the dual use SSJID and City laterals and drains.

The City requires detention basins to help attenuate peak flows before drainage discharge is pumped into SSJID's facilities. Delaying the release of water over longer periods of time further reduces the potential of downstream flooding. The proposed detention basins are joint-use facilities providing recreation and other uses when not being used for stormwater detention.

With the design and construction of flood control improvements included in the proposed storm drainage system, the proposed Project would have a **less than significant** impact relative to this topic.

Impact 3.9-5 The proposed Project has the potential to otherwise substantially degrade water quality. (Less than Significant)

Water Quality Impacts from Discharges to 303(d) Listed Water Bodies: Section 303(d) of the federal Clean Water Act (CWA) requires States to identify waters that do not meet water quality standards or objectives and thus, are considered "impaired." Once listed, Section 303(d) mandates prioritization and development of a Total Maximum Daily Load (TMDL). The TMDL is a tool that establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby the basis for the States to establish water quality-based controls. The purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved.

According to the California Water Quality Control Monitoring Council, which is part of California Environmental Protection Agency, Natural Resources, there are many areas within the San Joaquin County which are considered Section 303(d) impaired waterbodies. Those areas in the regional vicinity of the Project site that are impaired are referred as Delta Waterways (Southern Portion) by the Water Quality Control Monitoring Council. This includes 3,125 acres listed as early as 1996 for Chlorpyrifos (Agriculture, Urban Runoff/Storm Sewers), DDT (Agriculture), Diazinon (Agriculture, Urban Runoff/Storm Sewers), Electrical Conductivity (Agriculture), Group A Pesticides (Agriculture), Invasive Species (Source Unknown), Mercury (Resource Extraction), and Unknown Toxicity (Source Unknown).

The San Joaquin River is specifically listed by the Central Valley Regional Water Quality Control Board (CVRWQCB) as an impaired water body due to mercury under the Clean Water Act. Mercury is a sediment-based pollutant that can be released into the water column during various in-water construction activities (e.g., construction of the storm drain outfall) that may disturb the sediment and cause turbidity. As a result, such activities may increase the likelihood of mercury exposure to the public and wildlife that utilize the San Joaquin River.

In accordance with the NPDES Stormwater Program, Mitigation Measure 3.6-1 contained in Section 3.6 Geology and Soils requires an approved SWPPP designed to control erosion and the loss of topsoil to the extent practicable using BMPs that the RWQCB has deemed effective in controlling erosion, sedimentation, runoff during construction activities. Such BMPs may include: temporary erosion control measures such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover.

The BMPs and overall SWPPP is reviewed by the RWQCB as part of the permitting process. The SWPPP, once approved, is kept on site and implemented during construction activities and must be made available upon request to representatives of the RWQCB and/or the lead agency. The RWQCB has stated that these erosion control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. The specific controls are subject to the review and approval by the RWQCB.

The ongoing operational phase of the proposed Project (all phases) requires discharge of stormwater into the on-site detention basins, which would ultimately flow into SSJID system and exit into the Delta. The discharge of stormwater must be treated through BMPs prior to its discharge. Mitigation Measures contained above would ensure that BMPs are implemented to reduce the amount of pollution in stormwater discharged from the Project site into the on-site detention basins, which would ultimately flow into the Delta during the operational phase of the project. The Manteca Municipal Code Title 13 (Public Services) Chapter 13.28 (Stormwater Management and Discharges) establish minimum storm water management requirements and controls. Storm water drainage is managed through the implementation of BMPs to the extent they are technologically achievable to prevent and reduce pollutants. The City requires reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses.. The management of water quality through BMPs is intended to ensure that water quality does not degrade to levels that would violate water quality standards.

The use of BMPs are intended to treat runoff close to the source during the construction and long term operational phase of the Project to reduce stormwater quality impacts. The mitigation measures listed below are existing regulatory requirements. Implementation of proposed Project would have a **less-than-significant** impact relative to this topic.

MITIGATION MEASURE(S)

Implement **Mitigation Measure 3.6-1** (from Section 3.6 Geology and Soils) and **Mitigation Measures 3.9-1 and 3.9-2** (from Section 3.9 Hydrology and Water Quality).

Impact 3.9-6 Place housing or structures that would impede/redirect flows within a 100-year, or 200-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. (Less than Significant with Mitigation)

As shown on Figure 3.9-2, the majority of the Project site is not within a 100-year flood zone as delineated by FEMA, with the exception of a small portion of the southwestern corner of the Project Site. That portion of the Project site that lies within the 100-year flood zone is not proposed for development of housing or other human occupied structures.

While the majority of the Project site is not within the 100-year flood hazard area, the entire Project site does lie within the 200-year flood hazard area. State floodplain legislation (SB 5) for the San Joaquin River region has resulted in stricter development standards beginning in 2016. Urban areas that depend on levee protection are required to have a 200-year level of flood protection by 2028.

SB 5 prohibits a city or county within the Central Valley Flood Protection Plan area from approving a development agreement, discretionary permit or entitlement, tentative map or parcel map for any property within a flood hazard zone unless they can demonstrate any of the following:

- the project has already achieved the applicable level of flood protection,
- conditions have been imposed on the project approval that will eventually result in the applicable level of flood protection, or
- adequate progress is being made towards achievement of the applicable level of flood protection.

Adequate progress is defined as meeting all of the following:

- The levee improvement project scope, cost and schedule have been developed;
- In any given year, at least 90% of the revenues scheduled for that year have been appropriated and expended consistent with the schedule;
- Construction of critical features is progressing as indicated by the actual expenditure of budget funds;
- The city or county has not been responsible for any significant delay in completion of the system; and
- The above information has been provided to the DWR and the Central Valley Flood Protection Board and the local flood management agency shall annually report on the efforts to complete the project.

In 2018 the Cities of Lathrop and Manteca became members of San Joaquin Area Flood Control Agency (SJAFCFA). As a result, SJAFCFA became the sole Local Flood Management Agency (LFMA) of the Mossdale Tract area (area protected by Reclamation District (RD) 17 levees) with the responsibility to prepare the adequate progress reports on an annual basis. The existing RD 17 levees protecting the Mossdale Tract Area do not provide 200-year flood protection as required by state law. SJAFCFA and RD 17, representing member agencies (i.e, Manteca), are engaged in efforts to meet this Urban Level of Protection (ULOP) requirement by 2028.

A Regional SJAFCFA 200-Year Development Impact Fee (Regional DIF) paid by property owners developing within the 200-year floodplain was also adopted by SJAFCFA in November 2018.

The existing plan for meeting state requirements includes two components: (1) RD 17's ongoing Levee Seepage Repair Project (LSRP) and (2) SJAFCFA Levee Improvements to achieve 200-year flood protection (the Project). The SJAFCFA Project consists of a fix-in-place levee improvement project and an extension of the existing dryland levee in Manteca.

During project development and planning, information was shared by the State of California regarding potential changes in hydraulics and hydrology due to climate change. SJAFCFA is currently conducting a feasibility study funded by State of California under its Urban Flood Risk Reduction (UFRR) program. As part of that study, climate change information is being considered to determine what changes, if any, need to be made to the proposed SJAFCFA Project to ensure it provides the appropriate standard of protection.

3.9 HYDROLOGY AND WATER QUALITY

The City of Manteca does not directly control levee improvements made by the RDs, however, land use decisions at the City are dependent upon these districts to make progress toward completing necessary upgrades to meet Urban Level of Flood Protection criteria.

Additionally, because the Project site is located within the 200-year flood zone, Subsection C of Section 17.30.040 of the Manteca Municipal Code applies to the Project:

The review authority shall not approve the execution of a development agreement, a tentative map, or a parcel map for which a tentative map is not required, or a discretionary permit or other discretionary entitlement that would result in the construction of a new building, or construction that would result in an increase in allowed occupancy for an existing building, or issuance of a ministerial permit that would result in the construction of a new residence for property that is located within the F-200 Zone unless the review authority finds, based on substantial evidence in the record, one of the following:

- 1. The facilities of the State Plan of Flood Control or other flood management facilities protect the property to the urban level of flood protection in urban and urbanizing areas;*
- 2. The City has imposed conditions on a development agreement, map, permit, or entitlement that will protect the property to the urban level of flood protection in urban and urbanizing areas;*
- 3. The local flood management agency has made adequate progress (as defined in California Government Code Section 65007) on the construction of a flood protection system that will result in flood protection equal to or greater than the urban level of flood protection in urban or urbanizing areas; or*
- 4. The property is located in an area of potential flooding of three feet or less from a storm event that has a one in two hundred chance of occurring in any given year, from sources other than local drainage, in urban and urbanizing areas.*

The facilities of the State Plan of Flood Control or other flood management facilities do not currently protect the Project site. Through Mitigation Measure 3.9-3, the City has imposed a condition that will protect the Project site to the urban level of flood protection. As of 2021, SJFACA has made adequate progress (as defined in California Government Code Section 65007) on the construction of a flood protection system that will result in flood protection equal to or greater than the urban level of flood protection in urban or urbanizing areas. The Project site is located in an area of potential flooding of three feet or greater from a storm event that has a one in two hundred chance of occurring in any given year, from sources other than local drainage, in urban and urbanizing areas.

SJAFCA and the City of Manteca, as a member agency, will continue planning efforts to provide adequate funding for necessary improvements, pursuant to the SB 5 requirements. SJAFCA and RD 17 will continue to implement the two-component approach as described above that would phase in the flood control project improvements prior to 2028. Until the improvements are in place, the

Project site would be subject to potential flooding risk of three feet or greater from a storm event that has a one in two hundred chance of occurring in any given year. This is a potentially significant impact until SJAFCA improvements are completed prior to 2028. Implementation of the following mitigation measure would reduce this impact to a **less than significant** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.9-3: *The Project site is located within the City of Manteca's F-200 zone, which makes it at risk from the 200-year flood. As such, the Project is subject to the Manteca Municipal Code Section 17.30.040 Subsection C which places construction limitations on development proposed in areas that are at risk of flooding under the 200-year storm. The Project applicant shall pay the adopted SB5 fee to go toward SJAFCA's effort to provide urban level of flood protection for the Project site and region. In addition, the Project shall remain consistent with the finding of adequate progress by SJAFCA (the "local flood management agency") on an annual basis.*

Impact 3.9-7 The proposed Project has the potential to expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, seiche, tsunami, or mudflow. (Less than Significant)

A tsunami is a sea wave caused by a submarine earthquake, landslide, or volcanic eruption. A tsunami can cause catastrophic damage to shallow or exposed shorelines. The Project site is approximately 50 miles from San Francisco Bay and 70 miles from the coast, which is sufficiently distant to preclude effects from a tsunami.

Seiches are changes or oscillations of water levels within a confined water body. Seiches are caused by fluctuation in the atmosphere, tidal currents or earthquakes. The effect of this phenomenon is a standing wave that would occur when influenced by the external causes. The Project site is not adjacent to any lakes that pose a significant risk from a seiche event.

A mudflow is a type of mass wasting or landslide, where earth and surface materials are rapidly transported downhill under the force of gravity. Mudflow events are caused by a combination of factors, including soil type, soil profile, precipitation, and slope. Mudflow may be triggered by heavy rainfall that the soil is not able to sufficiently drain or absorb. As a result of this super-saturation, soil and rock materials become unstable and eventually slide away from their existing location. Soils most susceptible to mudflow are saturated, loose, non-plastic, uniformly graded, and fine-grained sand deposits. The Project site is relatively flat making the potential of mudflows low.

The Project site is subject to flood inundation as a result of dam failure. Figure 3.9-3 shows areas that are susceptible to dam inundation. Dam failure is generally a result of structural instability caused by improper design or construction, instability resulting from seismic shaking, or overtopping and erosion of the dam. As discussed previously, larger dams that are higher than 25 feet or with storage capacities over 50 acre-feet of water are regulated by the California Dam Safety Act, which is implemented by the California Department of Water Resources, DSD. The DSD is responsible for inspecting and monitoring these dams. The Act also requires that dam owners submit to the California Office of Emergency Services inundation maps for dams that would cause significant loss

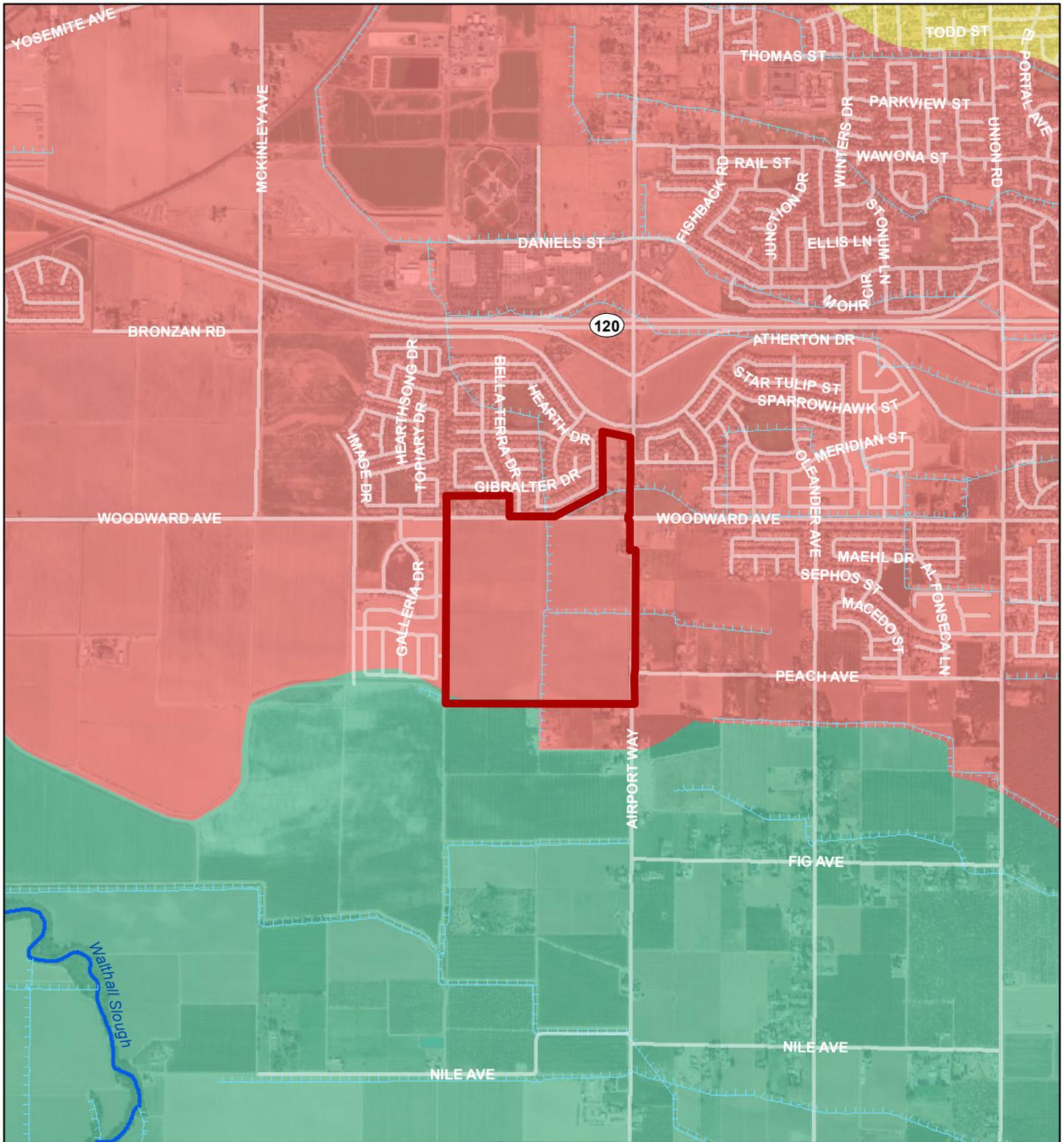
of life or personal injury as a result of dam failure. The County Office of Emergency Services is responsible for developing and implementing a Dam Failure Plan that designates evacuation plans, the direction of floodwaters, and provides emergency information.

Regular inspection by DSD and maintenance by the dam owners ensure that the dams are kept in safe operating conditions. As such, failure of these dams is considered to have an extremely low probability of occurring and is not considered to be a reasonably foreseeable event.

The Project site is subject to flood inundation as a result of levee failure. The levees protected the project site are maintained by Reclamation District 0017 (RD 17). The RD 17 levee system was originally constructed in the 1960s and substantially upgraded in 1988. In 1990 the RD 17 levee was accredited by FEMA, which removed large areas of Stockton, Lathrop, Manteca and the County from the 100-year floodplain.

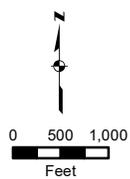
Following the accreditation in 1990, standards for flood protection have been changing and in May 2007 FEMA extended an offer of a Provisionally Accredited Levee (PAL) Agreement for the RD 17 levee system. A PAL is a levee that meets the FEMA requirements for flood protection but requires additional supporting documentation. Since August 2007, RD 17 has been implementing improvements to the levee system and constructed a seepage berm (a bank of earth placed against the existing levee) along the east levee of the San Joaquin River with the RD 17 area. The purpose of these improvements is to meet the flood protection requirements of FEMA and maintain the levee accreditation. FEMA has determined based on the current condition of the levee and the additional supporting documentation, that the RD 17 levee will maintain its accreditation. Regular inspection and maintenance by RD 17 further ensures that the levees are kept in safe operating conditions. As such, failure of the levee is considered to have an extremely low probability of occurring and is not considered to be a reasonably foreseeable event.

The proposed Project is not anticipated to result in the exposure of people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, seiche, tsunami, or mudflow. This impact is considered **less than significant**.



Legend

- Annexation Area
- Canal/Ditch
- Walthall Slough
- Oakwood Lake-San Joaquin River Watershed
- Town of French Camp-San Joaquin River Watershed
- Walthall Slough-San Joaquin River Watershed

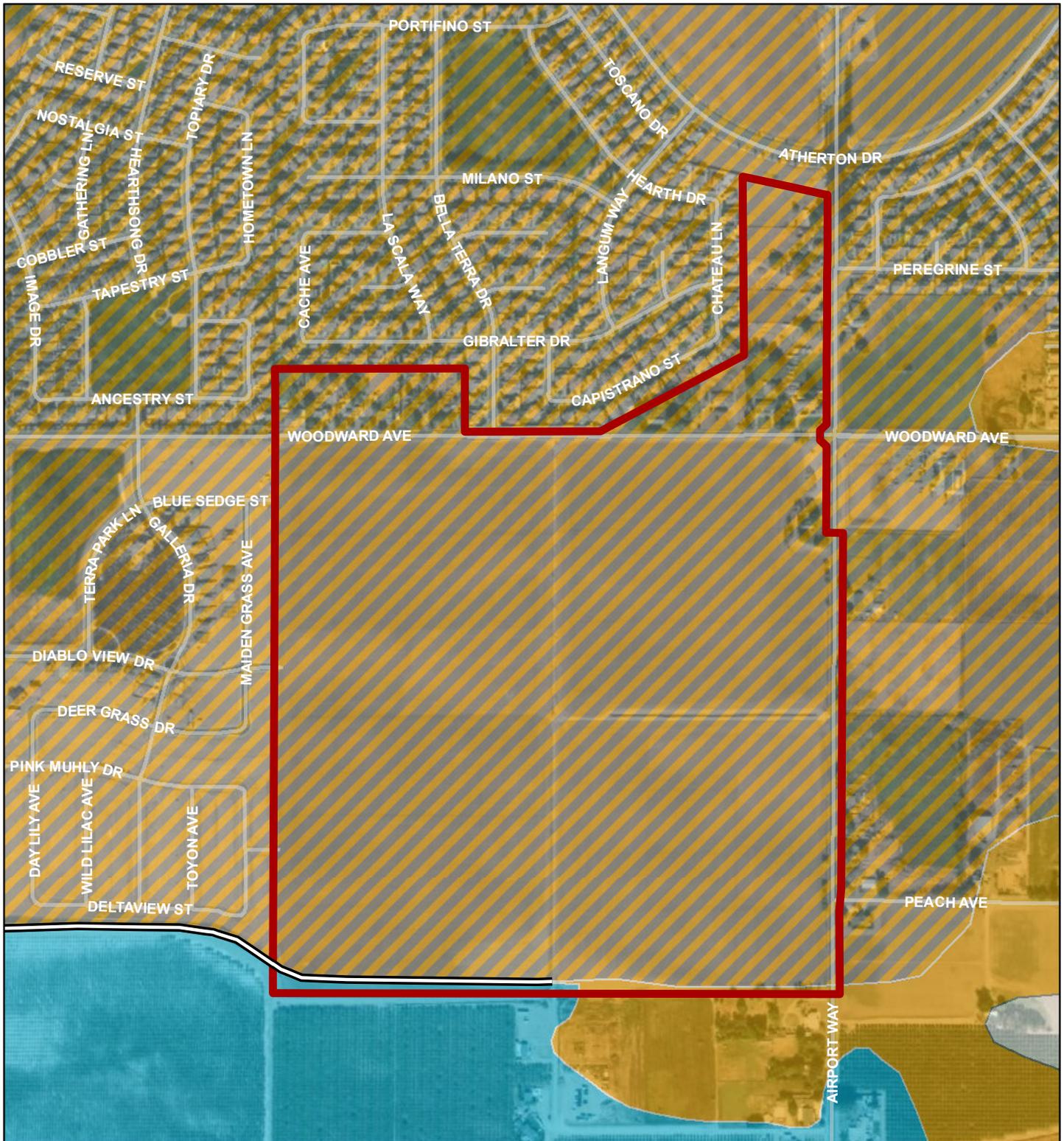


LUMINA at MACHADO RANCH

Figure 3.9-1. Watershed Map

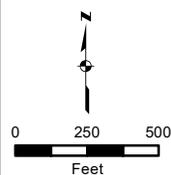
Sources: San Joaquin County GIS; USGS NHD and WBD; ArcGIS Online World Imagery Map Service. Map date: February 23, 2021.

This page intentionally left blank.



Legend

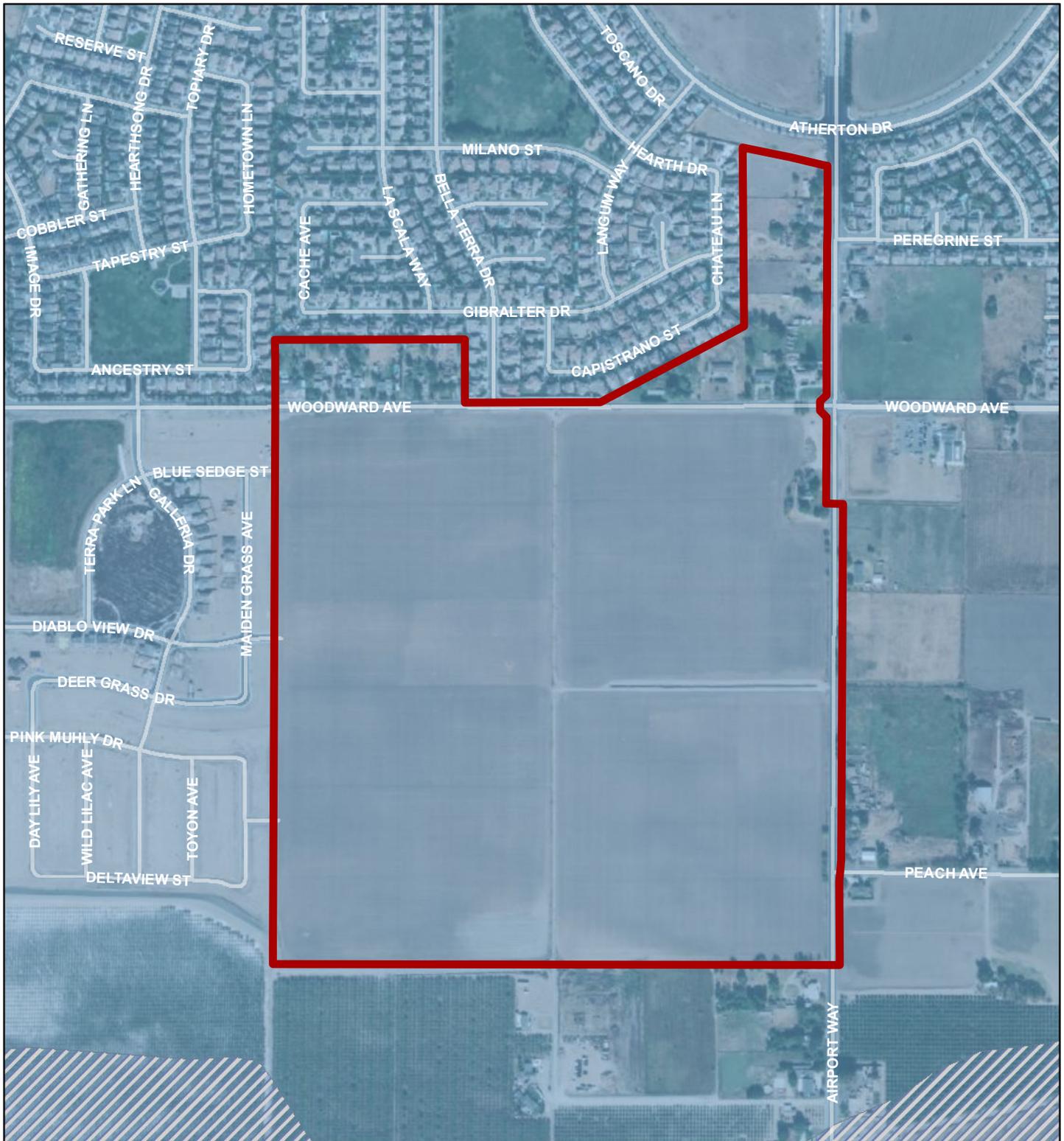
-  Annexation Area
-  Levee
-  100-year Flood Zone
-  500-year Flood Zone
-  Area with Reduced Risk due to Levee
-  Area of Minimal Flood Hazard



LUMINA at MACHADO RANCH
 Figure 3.9-2. FEMA Flood Zone Designations

Sources: San Joaquin County GIS; FEMA's National Flood Hazard Layer; ArcGIS Online World Imagery Map Service. Map date: February 23, 2021.

This page intentionally left blank.

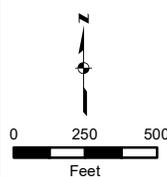


LUMINA at MACHADO RANCH

Figure 3.9-3. Dam Inundation Areas

Legend

-  Annexation Area
-  Tulloch Dam Inundation Area
-  San Luis and New Melones Dam Inundation Areas



Sources: San Joaquin County GIS; Cal OES; ArcGIS Online World Imagery Map Service. Map date: February 23, 2021.

This page intentionally left blank.

This section describes the existing land uses on the Project site and in the surrounding area, describes the applicable land use regulations, and evaluates the environmental effects of implementation of the proposed Project related to land use, population, and housing. Information in this section is based on information provided in the proposed Project materials, site surveys conducted by De Novo Planning Group in 2020 and the following reference documents:

- *City of Manteca General Plan 2023 (City of Manteca as amended through 2016);*
- *Manteca General Plan 2023 Draft Environmental Impact Report (City of Manteca, 2003);*
- *City of Manteca Municipal Code, Title 17 - Zoning (City of Manteca, 2011);*
- *San Joaquin County General Plan (County of San Joaquin, 1992);*

There were no comments received during the NOP scoping process related to this environmental topic.

3.10.1 ENVIRONMENTAL SETTING

EXISTING PHYSICAL ENVIRONMENT

The City of Manteca is located in southern San Joaquin County, approximately 15 miles from Stockton and Tracy and 18 miles from Modesto. State Route 99 travels through Manteca near the eastern edge of the city and State Route 120 travels through the city near the southern edge of the city. Manteca occupies an area of just under 16 square miles.

Project Site

The Project site is located in the southwestern portion of the City of Manteca directly adjacent to the city limits. The Project site is immediately southwest of the intersection of Airport Way and Woodward Avenue. The Project site is bounded on the north by the City of Manteca city limits, on the east by Airport Way, on the south by an existing Reclamation District #2094 (RD 2094) dry levee and existing agricultural fields, and on the west by the existing single-family subdivisions. The Project site encompasses 183.46 acres, including a 161.19-acre Development Area, a 19.11-acre Non-development Area, and 3.16 acres of existing right-of-way owned by San Joaquin County.

The Development Area is bordered on the north by Woodward Avenue, on the east by Airport Way, on the south by an existing Reclamation District #2094 (RD 2094) dry levee and existing agricultural fields, and on the west by the Terra Ranch Subdivision. The current uses on the Development Area are predominantly agricultural and undeveloped, except for two existing houses and barns and/or sheds with associated equipment in the northeastern portion of the site. Additionally, two dirt/gravel roadways bisect the Development Area, including one roadway running north to south down the center of the Development Area from Woodward Avenue to the southern boundary and another running east to west from Airport Avenue connecting to the dirt/gravel roadway in the center of the Development Area. A South San Joaquin Irrigation District (SSJID) pipeline exists within the Development Area. An RD 2094 dry levee makes up a portion of the southern property line. This dryland levee is not intended to hold floodwaters from the south (upstream), instead it is intended

3.10 LAND USE, POPULATION, AND HOUSING

to contain flows on RD 2094 and RD 2096 in the event of a levee breach of levees along RD 2094, RD 2096, or RD 17.

The Non-development Area is located south and east of the City of Manteca city limits, west of Airport Way, and north of Woodward Avenue. The Non-development Area contains 15 parcels each developed with a single-family residence. Six of the existing residential homes (Non-development Area 1) are located just north of the Development Area and Woodward Avenue in the northwest corner of the Project site while the remaining nine residential homes (Non-development Area 2) are just north of Woodward Avenue and west of Airport Way in the northeast corner of the Project site.

Figure 2.0-5 shows aerial imagery of the existing site uses within the Project site.

Surrounding Land Uses

The Project site is surrounded by a variety of agricultural and residential land uses. Uses immediately south of the Project site include agricultural and residential uses, including ranchettes and large estates lots. Residential subdivisions are located to the north and east of the Project site, including the Terra Ranch Subdivision which borders the Development Area on the west. Existing uses to the east of the Project site include a residential subdivision north of Woodward Avenue and agricultural and rural residential uses south of Woodward Avenue.

DEMOGRAPHICS

Population Trends

The City experienced a population increase from 2000 to 2010 of 17,841 persons (36.2%) as shown in Table 3.10-1. During the period from 2010 to 2020, population continued to increase in the City, resulting in a total population of 84,800 in 2020.

TABLE 3.10-1: POPULATION GROWTH

YEAR	POPULATION	CHANGE	PERCENT CHANGE
2000	49,255	--	--
2010	67,096	17,841	36.2%
2020	84,800	17,704	26.4%

SOURCES: US ACS CENSUS 2000, 2010, AND 2015; DOF, 2020.

Housing Stock

Table 3.10-2 summarizes the growth of the City's housing stock between 2000 and 2020. The number of housing units increased from 16,936 in 2000 to 23,132 in 2010. This represents 36.6 percent growth in the City's housing stock. The City's housing stock totaled 27,667 units in 2020.

TABLE 3.10-2: HOUSING UNIT GROWTH

YEAR	HOUSING UNITS	CHANGE	PERCENT CHANGE
2000	16,936	--	--
2010	23,132	6,196	36.6%
2020	27,667	4,535	19.6%

SOURCES: US ACS CENSUS 2000, 2010, AND 2015; DOF, 2020.

Persons Per Dwelling Unit

According to the most recent U.S. Census (2019) and Department of Finance (2020) estimates, the average number of persons residing in a dwelling unit in the City of Manteca is 3.18.

3.10.2 REGULATORY SETTING

STATE

Government Code

California Government Code Section 65300 et seq. establishes the obligation of cities and counties to adopt and implement general plans. The general plan is a comprehensive, long-term, and general document that describes plans for the physical development of a jurisdiction and of any land outside its boundaries that, in the jurisdiction’s judgment, bears relation to its planning. The general plan addresses a broad range of topics, including, at a minimum, land use, circulation, housing, conservation, open space, noise, and safety. In addressing these topics, the general plan identifies the goals, objectives, policies, principles, standards, and plan proposals that support the jurisdiction’s vision for the area. The general plan is a long-range document that typically addresses the physical character of an area over a 20-year period. Although the general plan serves as a blueprint for future development and identifies the overall vision for the planning area, it remains general enough to allow for flexibility in the approach taken to achieve the plan's goals.

The State Zoning Law (California Government Code Section 65800 et seq.) establishes that zoning ordinances, which are laws that define allowable land uses within a specific district, are required to be consistent with the general plan and any applicable specific plans. When amendments to the general plan are made, corresponding changes in the zoning ordinance may be required within a reasonable time to ensure the land uses designated in the general plan would also be allowable by the zoning ordinance (Government Code, Section 65860, subd. [c]).

LOCAL

City of Manteca General Plan

As noted above, General Plans are prepared under a mandate from the State of California, which requires each city and county to prepare and adopt a comprehensive, long-term general plan for its jurisdiction and any adjacent related lands. State law requires General Plans to address seven mandated components: circulation, conservation, housing, land use, noise, open space, and safety. In addition to those components required by State law, the Manteca GP also contains optional

3.10 LAND USE, POPULATION, AND HOUSING

elements, including Community Design, Economic Development, Public Facilities and Services, and 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. The following will provide an overview of the structure of both the 2023 General Plan and General Plan Update, as well as discuss the respective General Plan Land Use Map and policies relevant to land use and population.

2023 GENERAL PLAN

The Manteca 2023 General Plan includes an introduction, a description of the City's land use planning framework, and 11 separate chapters that establish goals, policies, and actions for each given set of topics. The chapters cover all of the topics required by California State Government Code Section 65302 as well as topics of particular interest to Manteca. The General Plan structure is summarized as follows:

- **General Plan Context and Vision:** Describes the required elements of the General Plan and its planning context, and provides an overview of the Plan's organization and key land use issues and development concepts.
- **Land Use Element:** establishes land use designations with types and intensities of use and sets policies and programs regarding future development of the City.
- **Community Design Element:** establishes urban design guidelines to ensure that new development is attractive and contributes to the sense of Manteca as a location.
- **Circulation Element:** contains policies for the City's roadway system, transit, pedestrian and bicycle circulation, and methods of managing transportation demand, accounting for the relationship between land use and circulation.
- **Economic Development Element:** addresses the need for Manteca to broaden its employment base to maintain the high quality of life currently enjoyed and implementing an economic development strategy.
- **Public Facilities and Services Element:** discusses public facilities including domestic water, sewer, storm drainage, electricity services, solid waste, education, police protection, fire protection, and parks and recreation.
- **Safety Element:** contains policies and programs to protect the community from injury, loss of life, and property damage resulting from natural disasters and hazardous conditions.
- **Resource Conservation Element:** emphasizes the accommodation of population growth while conserving and protecting the area's natural resources and quality of life.
- **Noise Element:** identifies policies that will protect the community from noise hazards.

- **Air Quality Element:** addresses the community's need to cooperate regionally so that increased development does not further degrade the air quality.
- **Administration and Implementation Element:** provides a tool to City staff and elected officials to administer and implement the General Plan. This Element is the framework for review of individual actions and programs (implementation measures) and review of the comprehensive General Plan.
- **Housing Element:** includes policies and programs to increase the variety and types of housing in the City, emphasizing infill sites, increased density, and mixed uses downtown, and also includes a discussion of housing needs and programs to provide additional housing for special needs populations.

2023 General Plan Land Use Map

The General Plan Land Use Map portrays the ultimate uses of land in the City of Manteca through land use designations. The Land Use Map designates the Project site as Low Density Residential, Commercial Mixed Use, Neighborhood Commercial, General Commercial, and Park. Figure 2.0-6 in Chapter 2.0 depicts the Manteca General Plan land use designations for the Project site and the surrounding areas.

LDR (Low Density Residential): The LDR land use will establish a mix of dwelling unit types and character determined by the individual site and market conditions. The density range allows substantial flexibility in selecting dwelling unit types and parcel configurations to suit particular site conditions and housing needs. The type of dwelling units anticipated in this density range include small lots and clustered lots as well as conventional large lot detached residences.

CMU (Commercial Mixed Use): The CMU designation will accommodate a variety of purposes including high density residential, employment centers, retail commercial, and professional offices.

NC (Neighborhood Commercial): This designation provides for locally oriented retail and service uses, offices, restaurants, and service stations, public and quasi-public uses and similar and compatible uses. The mix of uses anticipated in these centers includes supermarket/drug store configuration including associated smaller retail stores and services. Pad sites will provide restaurant and service station opportunities.

GC (General Commercial): The General Commercial 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 commercial, lodging, commercial recreation and public gathering facilities, such as amphitheaters, or public gardens.

Park (P): The P land use designation provides for neighborhood, community and regional parks, golf courses, and other outdoor recreational facilities within urban development. Specific uses include public recreation sites, including ball fields, tot lots and play apparatus, adult softball and soccer

3.10 LAND USE, POPULATION, AND HOUSING

playing fields, swimming pools, community center buildings, meeting facilities, libraries, art centers, after school care facilities, art in public places, facilities for night-time recreation, trails benches, interpretive markers, picnic areas, barbecue facilities, landscaping, irrigation, city wells, trees and natural habitat areas.

2023 General Plan Policies

The following policies of the 2023 General Plan related to land use and population are applicable to the proposed Project:

- LU-P-1. Growth shall mitigate its own impacts and shall provide a positive benefit to the City of Manteca.
- LU-P-2. Growth must contribute to a strong diversified economic base and an effective balance between employment and housing opportunities for all income levels.
- LU-P-3. The City shall encourage a pattern of development that promotes the efficient and timely development of public services and facilities.
- LU-P-4. The City shall encourage a development pattern that is contiguous with the boundary of the City.
- LU-P-14. The City shall promote the development of a variety of housing types and prices to meet the needs of all households, including very low-, low-, and moderate-income households.
- LU-P-16. The City shall promote the preservation and integrity of existing stable residential neighborhoods.
- LU-P-17. The City shall encourage neighborhood revitalization and improvement including replacement, renovation or conversion to alternative use of buildings in serious disrepair.
- LU-P-18. The City shall seek funding to undertake neighborhood improvement programs designed to stabilize and enhance the quality of existing neighborhoods. Such improvements may include, but are not limited to sidewalk upgrade and repair, street tree programs, street lighting, signage, trash collectors, bus stop shelters and benches and similar improvements to the public areas.

GENERAL PLAN UPDATE

The proposed General Plan Update will include a comprehensive set of goals, policies, and actions (implementation measures), as well as a revised Land Use Map. The State requires that the General Plan contain seven mandatory elements: Land Use, Circulation, Housing, Open Space, Noise, Safety, and Conservation, as well as address issues related to climate adaptation and resiliency planning and environmental justice, either as separate Elements or as components of the required Element framework. The Plan includes all of the State-mandated elements, including Land Use (addresses Environmental Justice), Circulation, Resource Conservation (combines Open Space, Conservation, and Air Quality topics), and Safety (also addresses Climate Adaptation and Noise) as well as optional

elements, including Growth Management, Community Design, Economic Development, and Community Facilities and Services. It is noted that the Housing Element was adopted in 2016 and is not anticipated to be significantly revised by the General Plan Update. The General Plan structure is summarized as follows:

- **Land Use Element:** The Land Use element ensures that Manteca has sufficient capacity to support a diverse mix of land uses essential to the community's ability to thrive and be sustainable over time. The goals, policies, and measures in this element address the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, education, public buildings and grounds, waste disposal, and open space, including agriculture, natural resources, recreation, scenic areas, and greenways.
- **Growth Management Element:** This element provides a framework for pacing growth in the context of ensuring a high-quality life for the community's residents and on-going provision of community services and infrastructure that meet the community's existing needs as well as increasing capacity necessary to accommodate growth.
- **Circulation Element:** This element correlates closely with the Land Use Element and identifies the general locations and extent of existing and proposed major thoroughfares, transportation routes, terminals, military airports and ports, and other public utilities and facilities necessary to support a multi-modal transportation system. This element provides the framework for decisions concerning the City's multi-modal transportation system, which includes automobile, truck, transit, bicycle, and pedestrian modes of travel.
- **Economic Development Element:** This element addresses providing appropriate and adequate sites and programs to support existing businesses as well as to encourage diverse economic growth, efforts to ensure that the City's labor force is skilled and provided a broad range of employment opportunities, ensuring that the City's housing and quality of life are of a caliber to attract employers, ensure that infrastructure is in place or planned to support a successful commercial and industrial base, including telecommunications and emerging technologies, and providing a sustainable fiscal base for the City.
- **Community Facilities and Services Element:** This element includes goals, policies, and actions that seek to ensure that community facilities and services are provided, maintained, and expanded, so that Manteca can continue to grow and thrive. This element addresses General Service, Police, Fire, Parks and Recreation, Education, Domestic Water, Sewer, Major Drainage, Telecommunications, Electricity and Natural Gas, and Solid Waste.
- **Resource Conservation Element:** This element establishes Manteca's approach to the conservation and enhancement of Manteca's natural resources: water, land/soils, open space, and ecosystem, approach to addressing air quality, energy conservation, and climate

3.10 LAND USE, POPULATION, AND HOUSING

adaptation, conservation of agricultural and mineral resources, and preservation of the City's cultural and historic heritage.

- **Safety Element:** This element addresses emergency preparedness and critical facilities, geologic and seismic hazards, flood hazards, hazardous materials, and noise.
- **Implementation Element:** This element addresses the administration and implementation of the General Plan, including and Implementation Plan that prioritizes and tracks the actions identified in the General Plan.
- **Housing Element:** (add the housing element description from the previous GP)

General Plan Update Land Use Map

The General Plan Update Land Use Map portrays the ultimate uses of land in the City of Manteca through land use designations. The Land Use Map designates the Project site as Low Density Residential, Commercial Mixed Use, Commercial, and Park. Figure 2.0-6 in Chapter 2.0 depicts the Manteca General Plan Update land use designations for the Project site and the surrounding areas.

LDR (Low Density Residential): This designation provides for a mix of single-family housing, including small lots, clustered lots, attached homes, and conventional large lot detached residences. Density ranges from 2.1 to 8 dwelling units per acre.

CMU (Commercial Mixed Use): This designation provides for high density residential, employment centers, retail commercial, and professional offices. A mix of compatible uses is encouraged to provide neighborhood-serving sales, services, and activities, as well as employment opportunities, including offices.

Developments shall include community-serving amenities and connections that distinguish them from conventional multifamily, neighborhood commercial, or office development, with the intent that a recreational area and neighborhood serving uses will provide a local gathering place for recreation and socializing much as does a small-town square. For example, a residential development could include a work center that provides on-site facilities that encourage telecommuting and entrepreneurship.

Mixed uses may be integrated vertically or horizontally and shall be linked together through common walkways, plazas and parking areas, as well as linkages to the adjoining bicycle and pedestrian system.

Where required, open space, detention facilities, and parks, will be designed as an amenity within the site. Public facilities, such as a post office, library, fire station, or satellite government office, shall be included where feasible.

Developments shall have a shared parking program with the objective of reducing the parking required for each individual use.

C (Commercial): This designation 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 amphitheatres 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.

P (Park): This designation provides for neighborhood, community and regional parks, golf courses, and other outdoor recreational facilities within urban development. Specific uses include public recreation sites, including ball fields, tot lots and play apparatus, adult softball and soccer playing fields, swimming pools, community center buildings, meeting facilities, libraries, art centers, after school care facilities, art in public places, facilities for night-time recreation, trails benches, interpretive markers, picnic areas, barbecue facilities, landscaping, irrigation, city wells, trees and natural habitat areas.

General Plan Update Policies

The following policies of the General Plan Update related to land use and population are applicable to the proposed Project:

Policies: Land Use Element

- LU-3.1 Provide for the development of a variety of housing types and at a range of prices to meet the needs of all segments of the city's population, including individuals and families who qualify for affordable housing assistance in accordance with the housing element.
- LU-3.2. Require the design of new residential development to be consistent with any applicable design guidelines, to ensure harmony with Manteca's unique character and compatibility with existing surrounding land uses.
- LU-3.3. Encourage residential development to occur in a balanced and efficient pattern that reduces sprawl, preserves open space, and creates convenient connections to other land uses.
- LU-3.4. Prioritize the location of higher density housing in close proximity to employment areas, services, schools, retail, transit stops, near community destinations, and near major streets with high access to transit and non-vehicle transportation modes.
- LU-3.5. Encourage residential uses above the ground floor in mixed-use areas.
- LU-3.6. Encourage new neighborhoods to include a mix and distribution of land uses, including schools, parks, shopping, restaurants, and services, that reduce auto trips and support walking, biking, and transit use.
- LU-3.10. Encourage the development of additional executive housing units and neighborhoods.
- LU-3.11. Encourage property maintenance and the revitalization of economically

3.10 LAND USE, POPULATION, AND HOUSING

disadvantaged and poorly maintained neighborhoods.

- LU-3.12. Encourage and support development patterns at the highest limits permitted within each General Plan land use designation consistent with the policies of all other General Plan elements.

General Plan Update Implementation Programs

The following implementation measures of the General Plan Update related to land use and population are applicable to the proposed Project:

- LU-3a. Through the development review and permit process, screen development proposals for land use compatibility, including conformance with existing development or neighborhoods.
- LU-3b. Through the development review and permit process, ensure that residential developments meet the minimum density requirement stipulated on the Land Use Map in order to ensure that Manteca has an ample number of housing units to meet all of its housing needs.
- LU-3d. Require proposed residential subdivisions of 10 or more units with an average lot size less than one acre that are within 500 feet of an existing industrial, commercial, agricultural industrial, or agricultural processing use or a designated truck route to submit a Site Analysis Plan to ensure compliance with standards of Chapter 17.58 of the Zoning Code, as amended.
 - The Site Analysis Plan will quantify existing conditions of the site relative to compliance with Chapter 17.58 of the Zoning Code as amended, and how new development will meet these standards. The Site Analysis Plan shall incorporate a written narrative explaining how the project design has responded to the existing conditions and how new development will ensure that new residents will have an environment that is in compliance with the standards of Chapter 17.58, as amended. Such a statement, to form part of the material required for an application, is intended to assist the City's design and evaluation processes, and result in residential projects that meet quantifiable performance standards.
- LU-3e. Develop and periodically update design and performance standards that update and complement Chapter 17.58 of the Zoning Code to provide recommended design solutions available to proposed development projects to reduce impacts associated with aesthetics, noise, safety, odor, glare, and lighting, including land use conflicts between residential uses and nearby industrial and agricultural uses, in compliance with Chapter 17.58 of the Zoning Ordinance, as amended.
- LU-3f. Implement the policies and actions in the Housing Element in order to enhance opportunities to provide affordable housing within the community and to accommodate a range of household types, special need populations, and income levels.
- LU-3g. Explore and encourage creative approaches to providing affordable housing, including market rate housing affordable to moderate income households, within the community. Such approaches may include public/private partnerships, land trusts, housing

cooperatives, co-housing, and/or inclusionary housing.

- LU-3h. Continue to fund existing and provide assistance to additional neighborhood improvement programs designed to stabilize and enhance the quality of existing neighborhoods. Such improvements may include, but are not limited to sidewalk upgrade and repair, street tree programs, street lighting, signage, trash collectors, bus stop shelters and benches and similar improvements to the public areas.
- LU-3i. Facilitate and encourage the participation of neighborhood groups and associations in the planning process, and identify neighborhood priorities for future public improvements and capital projects.
- LU-3j. Continue the City's Code Enforcement efforts to preserve existing neighborhoods through the elimination of blight and improvement of substandard housing.
- LU-3k. Upgrade and provide infrastructure in existing neighborhoods as funding is available.
- LU-3l. Support efforts by the League of California Cities, American Planning Association, American Public Works Association, and other mutual interest organization to establish and/or re-establish stable funding mechanisms, like property tax backed revenue sources, at the State level.
- LU-3m. Within new subdivisions, duplexes on corner lots shall be encouraged so long as the front doors and garages for each dwelling unit face the differing intersecting streets.
- LU-3n. Within new subdivisions, developers shall be encouraged to develop up to 30% of the total number of dwelling units in the subdivision as attached houses, cottage homes, garden apartments, and other types of higher density product types so long as the overall density of the called for in the respective General Plan land use designation is not exceeded; the pattern of the neighborhood is maintained; such units are distributed evenly throughout the subdivision; and, limited to no more than 6 dwelling units per lot.
- LU-3o. Evaluate, in cooperation with the Building Industry Association, fiscal alternatives that will encourage development at the highest levels permitted by general plan land use designations such as Public Facilities Implementation Plan fees collected at the per acre basis compared to the per dwelling unit basis.

Municipal Code, Title 17 - Zoning

The purpose of Title 17, Zoning, of the City's Municipal Code is to protect and promote public health, safety, peace, comfort, convenience, prosperity, and general welfare and to regulate land use and development in accordance with the Manteca GP.

ZONING MAP

The Zoning Map identifies zoning districts within the City at the parcel level. The Zoning Map does not designate the Project site because the site is not located within the City limits.

3.10 LAND USE, POPULATION, AND HOUSING

San Joaquin County General Plan

As noted above, state law requires General Plans to address seven mandated components: circulation, conservation, housing, land use, noise, open space, and safety.

The San Joaquin County General Plan is comprehensive, long-range, and general. The San Joaquin County General Plan has the following purposes:

- To identify the community's land use, transportation, environmental, economic and social goals and policies as they relate to land use, conservation and development;
- To enable the County Board of Supervisors and the Planning Commission to establish long-range conservation and development policies;
- To provide a basis for judging whether specific private development proposals and public projects are in harmony with these policies; and
- To inform citizens, developers, decision makers, and other jurisdictions of the policies that will guide development and conservation within the County.

GENERAL PLAN LAND USE MAP (2010)

The San Joaquin County General Plan Land Use Map portrays the ultimate uses of land in the County through land use designations. The Land Use Map designates the Project site as General Agriculture (A/G). Figure 2.0-7 in Chapter 2.0, Project Description, identifies the land use designations depicts the San Joaquin County General Plan Land Use Map for the Project site and the surrounding areas. Below is a general description of County Designated land uses within the Project site.

General Agriculture (A/G): This designation applies to areas suitable for agriculture outside areas planned for urban development where the soils are capable of producing a wide variety of crops and/or supporting grazing; parcel sizes are generally large enough to support commercial agricultural activities; and there exists a commitment to commercial agriculture in the form of Williamson Act contracts and/or capital investments.

Typical uses include crop production, feed and grain storage and sales, crop spraying, and animal raising and sales. The density is a maximum of one primary residence per 20 acres.

San Joaquin County Municipal Code, Title 9 – Development Title

The purpose of Title 19, Development Title, of the County's Municipal Code is to replace the Planning Title and contain information on zones, development application requirements, and standards and regulations relating to such issues as infrastructure, natural resources, safety, and signs.

ZONING MAP

The Zoning Map identifies zoning districts within the County at the parcel level. The Zoning Map designates the Project site as General Agriculture (AG-40). Figure 2.0-7 in Chapter 2.0, Project

Description, identifies the San Joaquin County Zoning Map for the Project site and the surrounding areas. Below is a general description of County zoning within the Project site.

AG Zone (General Agriculture): This zone is established to preserve agricultural lands for the continuation of commercial agriculture enterprises. Minimum parcel sizes within the AG Zone are 20, 40, 80 or 160 acres, as specified by the precise zoning.

San Joaquin Local Agency Formation Commission (LAFCo)

The San Joaquin LAFCo is responsible for coordinating orderly reorganization to local jurisdictional boundaries, including annexations. Annexation of the Plan Area to the City of Manteca is subject to LAFCo approval, and LAFCo will review the proposed annexation for consistency with LAFCo's Annexation Policies and Procedures. An annexation can only be approved if the applicable Municipal Services Review (MSR) and Plan for Services demonstrate that adequate services can be provided to the annexed area. An MSR, produced as part of a LAFCo's regular review of municipal services, consists of a written statement of its determinations regarding infrastructure, growth and population projections, financing, cost avoidance, rate restructuring, shared facilities, government structure options, management efficiency, and local accountability and governance. An annexation proposal must include a Plan for Services consistent with the applicable MSR and must demonstrate that the City is capable of providing the required services. The City must pre-zone the lands to be annexed and subsequent changes to the General Plan land use designation and zoning are prohibited for two years.

San Joaquin LAFCo has adopted Policies and Procedures for Annexation and Detachment to and from all agencies within their jurisdiction. LAFCo has also adopted Procedures for the California Environmental Quality Act in accordance with the California Code of Regulations (Chapter 3, Title 14 Section 15022), which requires that each public agency adopt objectives, criteria, and specific procedures for administering its responsibilities under CEQA. Below is a brief discussion of San Joaquin LAFCo Policies and Procedures.

LAFCO CHANGE OF ORGANIZATION POLICIES AND PROCEDURES

(INCLUDING ANNEXATIONS AND REORGANIZATIONS) (AS AMENDED 12/14/12)

General Standards for Annexation and Detachment

These standards govern San Joaquin LAFCo determinations regarding annexations and detachments to and from all agencies. The annexations or detachments must be consistent with the general policies set forth in these Policies and Procedures.

1. Spheres and Municipal Service Reviews

The annexation or detachment must be consistent with the internal planning horizon of the sphere of influence. The land subject to annexation shall normally lie within the first planning increment (5 to 10 year) boundary. The annexation must also consider the applicable Municipal Service Review. An annexation shall be approved only if the Municipal Services Review and the Sphere of Influence Plan demonstrates that adequate services can

3.10 LAND USE, POPULATION, AND HOUSING

be provided with the timeframe needed by the inhabitants of the annexed area. If detachment occurs, the sphere will be modified. LAFCo generally will not allow spheres of influence to be amended concurrently with annexation proposals.

Proposed annexations of land that lie outside of the first planning horizon (5 to 10 year) are presumed to be inconsistent with the Sphere Plan. In such a case the agency must first request LAFCo to consider a sphere amendment pursuant to the above policies. If the amendment is approved, the agency may then proceed with the annexation proposal. A change of organization or reorganization will not be approved solely because an area falls within the SOI of any agency.

As an exception to the presumed inconsistency mentioned above, Master Plan and Specific Plan developments may span several planning horizons of the sphere of influence. Annexation of the entire Project area may be desirable in order to comprehensively plan and finance infrastructure and provide for amenity-based improvements. In these cases, no amendment of the planning horizon is necessary provided Project phasing is recognized in the Sphere of Influence Plan.

2. Plan for Services

Every proposal must include a Plan for Services that addresses the items identified in Section 56653 of the Government Code. The Plan for Services must be consistent with the Municipal Service Review of the Agency. Proponents must demonstrate that the city or special district is capable of meeting the need for services.

3. Contiguity

Territory proposed to be annexed to a city must be contiguous to the annexing city or district unless specifically allowed by statute. Territory is not contiguous if the only connection is a strip of land more than 300 feet long and less than 200 wide, that width to be exclusive of highways. The boundaries of a proposed annexation or reorganization must not create or result in areas that are difficult to serve.

4. Development within Jurisdiction

Development of existing vacant or non-prime agricultural lands for urban uses within the existing jurisdiction or within the sphere of influence should be encouraged before any proposal is approved which would allow for or lead to the development of existing open space lands for non-open space uses which are outside of the existing jurisdiction of the local agency or outside of the existing sphere of influence of the local agency. (Section 56377)

5. Progressive Urban Pattern

Annexations to agencies providing urban services shall be progressive steps toward filling in the territory designated by the affected agency's adopted sphere of influence. Proposed growth shall be from inner toward outer areas.

6. Piecemeal Annexation Prohibited

LAFCo requires annexations and detachments to be consistent with the schedule for annexation that is contained in the agency's Sphere of Influence Plan. LAFCo will modify small piece-meal or irregular annexations, to include additional territory in order to promote orderly annexation and logical boundaries, while maintaining a viable proposal. In such cases, detailed development plans may not be required for those additional areas but compliance with CEQA is required.

7. Annexations to Eliminate Islands

Proposals to annex islands or to otherwise correct illogical distortion of boundaries will normally be approved unless they would violate another provision of these standards. In order to avoid the creation of an island or to encourage the elimination an existing island, detailed development plans may not be required for the remnant areas.

8. Annexations that Create Islands

An annexation will not be approved if it will result in the creation of an island of unincorporated territory or otherwise cause or further the distortion of existing boundaries. The Commission may nevertheless approve such an annexation where it finds that the application of this policy would be detrimental to the orderly development of the community and that a reasonable effort has been made to include the island in the annexation but that inclusion is not feasible at this time.

9. Substantially Surrounded

For the purpose of applying the provisions of the Cortese-Knox-Hertzberg Act regarding island annexation without protest hearings (Section 56375.5), the subject territory of an annexation proposal shall be deemed "substantially surrounded" if it is within the sphere of influence of the affected city and two-thirds of its boundary is surrounded by the affected city.

10. Definite and Certain Boundaries

All boundaries shall be definite and certain and conform to lines of assessment or ownership. The Commission's approval of boundary change proposals containing split parcels will typically be subject to a condition requiring the recordation of a parcel map, lot line adjustment or other instrument to avoid creating remnants of legal lots.

11. Service Requirements

An annexation shall not be approved merely to facilitate the delivery of one or a few services to the detriment of the delivery of a larger number of services or service more basic to public health and welfare.

3.10 LAND USE, POPULATION, AND HOUSING

12. Adverse Impact of Annexation on the Other Agencies

LAFCo will consider any significant adverse effects upon other service recipients or other agencies serving the area and may condition any approval to mitigate such impacts. Significant adverse effects shall include the effect of proposals that negatively impact special districts' budgets or services or require the continuation of services without the provision of adequate funding. LAFCo will not approve detachments from special districts or annexations that fail to provide adequate mitigation of the adverse impact on the district. LAFCo may determine an appropriate temporary mitigation, if any, and impose that temporary mitigation to the extent it is within its powers. If the needed mitigation is not within LAFCo's authority and approval would, in the opinion of the Commission, seriously impair the District's operation, the Commission may choose to deny the application.

13. District's Proposal to Provide new, different, or Divestiture of a Particular Function or Class of Services

In addition to the plan for services specified in Section 2 of these Policies and Procedures any application for a new, different, or divestiture of a service shall also include the requirements outlined in Section 56824.12 of the Government Code. Applications for such request will be considered a change of organization and shall follow the requirements of such an application as outlined in the Cortese-Knox-Hertzberg Act and within these policies and procedures. The factors enumerated in Sections 56668 and 56824.14 of the Government Code shall be considered by the Commission at the time of consideration of the application for such functions.

14. Disadvantaged Unincorporated Communities

Disadvantaged Unincorporated Communities (DUCs) are those territories shown in Exhibit A or as may be shown in a city municipal service review and sphere of influence plan.

The Commission shall not approve an annexation to a city or any territory greater than 10 acres where there exists a disadvantaged unincorporated community (DUC) that is contiguous to the area of proposed annexation, unless a concurrent application to annex all or a portion of the DUC to the subject city has been filed. An application to annex a DUC shall not be required if either of the following applies:

1. A prior application for annexation of the territory has been made in the preceding five years.
2. The Commission finds, based upon written evidence, that a majority of the registered voters within the DUC are opposed to annexation.

Written evidence can be a scientific survey conducted by an academic institution or professional polling company.

15. Protest Procedures

The Commission delegates the conducting authority functions and responsibilities to the LAFCo Executive Officer pursuant to Government Code Section 57000.

City Annexations

1. Annexation of Streets

Annexations shall reflect the logical allocation of streets and rights of way as follows:

- Territory should be included within the annexation to assure that the city reasonably assumes the burden of providing adequate roads to the property to be annexed. LAFCo will require cities to annex streets where adjacent lands that are in the city will generate additional traffic or where the annexation will isolate sections of county road. Cities shall include all contiguous public roads that can be included without fragmenting governmental responsibility by alternating city and county road jurisdiction over short section of the same roadway.
- When a street is a boundary line between two cities the centerline of the street may be used as the boundary or may follow a boundary reached by agreement of the affected cities.

2. Pre-zoning Required

The Cortese-Knox-Hertzberg Act requires the city to pre-zone territory to be annexed, and prohibits subsequent changes to the General Plan and /or pre-zoning designations for a period of two years after completion of the annexation, unless the city council makes a finding at a public hearing consistent with the provisions of Governments Code Section 56375(e). In instances where LAFCo amends a proposal to include additional territory, the Commission's approval of the annexation will be conditioned upon the pre-zoning of the new territory.

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMCP)

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) provides comprehensive measures for compensation and avoidance of impacts on various biological resources, including agricultural land. One of the primary goals of the SJMSCP is to preserve productive agriculture where that goal is compatible with protecting and preserving lands with biological resources and habitat. The SJMSCP is administered by the San Joaquin Council of Governments (SJCOG). The Project applicant will pay fees to SJCOG on a per-acre basis for designated agricultural lands and habitat that are converted to urban use. SJCOG will then use these funds to purchase conservation easements on agricultural and habitat lands in the region. The purchase of conservation easements allows the landowners to retain ownership of the land and continue agricultural operations, essentially preserving such lands in perpetuity. The Project site is

3.10 LAND USE, POPULATION, AND HOUSING

designated as Category B/Pay Zone A. This zone consists of “Other Open Spaces”, as described in Chapter 2.2 of the SJMSCP.

The City of Manteca is a permit holder and is responsible for local implementation responsibilities including collection of fees, maintenance of implementing ordinances/resolutions and coordinating with the JPA for annual reporting requirements.

3.10.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact on land use and planning if it will:

- Physically divide an established community;
- 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;
- 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); or
- Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

IMPACTS AND MITIGATION MEASURES

Impact 3.10-1: The proposed Project would not physically divide an established community. (No Impact)

The Project site is located at the southern edge of the City of Manteca Sphere of Influence (SOI) and is adjacent primarily to undeveloped agricultural land to the east, south, and west, and to developed areas to the north. The Project site would result in an extension of developed uses within an area of the city that currently has approved development plans within the vicinity of the Project site. The Project would provide roadways and pedestrian pathways to connect the Project site to the existing circulation system and to allow access to and from the site. Development of the Project site would not result in physical barriers, such as a highway, wall, or other division, that would divide an existing community, but would serve as an orderly extension of existing and planned development. The proposed Project would have **no impact** in regards to the physical division of an established community.

Impact 3.10-2: The proposed Project would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project adopted to avoid or mitigate an environmental effect. (Less than Significant)

Land use plans, policies, and regulations that govern the land uses on the Project site and have jurisdiction over the Project include the San Joaquin County General Plan, San Joaquin County Municipal Code, Manteca General Plan, Manteca Municipal Code, the SJCMSCP, and the San Joaquin LAFCo Policies and Procedures Document. Consistency with the SJMPSCP is discussed in Impact 3.10-3.

SAN JOAQUIN COUNTY GENERAL PLAN AND SAN JOAQUIN COUNTY MUNICIPAL CODE

As noted previously, the Project site is currently within San Joaquin County, and within the City of Manteca's Sphere of Influence. The San Joaquin County General Plan and San Joaquin County Municipal Code are the current governing documents for the Project site.

The proposed Project includes an Annexation of sixteen (16) APNs totaling 183.46 acres. This includes the Development Area (161.19-acre parcel, APN 241-32-018), Non-development Area 1 (an inhabited annexation of 6 parcels on 6 acres), Non-development Area 2 (an inhabited annexation of 9 parcels on 13.11 acres), and the Right-of-Way Annexation Area (3.16 acres of existing County right-of-way). Figure 2.0-11 illustrates the Annexation Area. Upon annexation of the Project site, the San Joaquin County General Plan and San Joaquin County Municipal Code would not apply to the Project.

MANTECA GENERAL PLAN

Since general plans often contain numerous policies emphasizing differing legislative goals, a development project may be "consistent" with a general plan, taken as a whole, even though the project appears to be inconsistent or arguably inconsistent with some individual policies. (*Sequoyah Hills Homeowners Association v. City of Oakland* (1993) 23 Cal.App.4th 704, 719.) The Project is consistent with the key land use issues and development concepts of the Manteca GP which provide for logical growth of the City, emphasize community form, scale, and identify, encourage attractive, sustainable neighborhoods, support public transit and bicycle and pedestrian circulation, encourage housing opportunity, promote employment and economic development, encourage a mix of land uses that balance public services and fiscal sustainability, and promote access to open space. The Project is located adjacent to the City limits, is located within the City's SOI, and will provide for housing opportunities. The proposed Project is consistent with the General Plan land use policies that encourage an orderly pattern of development that is contiguous with the City boundary, require growth to contribute to a diversified economic base and balance between employment and housing opportunities, and allowing for recreation uses.

When land uses are not consistent with a General Plan there are two courses of action: 1) the uses are not allowed due to the inconsistency, or 2) the land uses are changed through an amendment to the General Plan to create consistency. The proposed Project would require a minor General Plan

3.10 LAND USE, POPULATION, AND HOUSING

Land Use Amendment to adjust the exact location and shape of the Park land use designation within Development Area. No changes are proposed for the Non-development Area 1. It is noted that the General Plan Update proposed changes to the land use in Non-development Area 2, and the proposed Land Uses under this General Plan Amendment are consistent with the General Plan Update. Figure 2.0-8 in Chapter 2.0, Project Description, shows the proposed boundary modification to the General Plan land use designations for the park area. Approval of the General Plan amendment would ensure that the proposed Project would be substantially consistent with the Manteca GP land use requirements.

Additionally, the proposed Project is generally consistent with the vast majority of the applicable 2023 General Plan policies which aim to avoid or mitigate an environmental effect. As shown in Table 3.10-3, the Project is consistent with the City’s existing General Plan policies and would not conflict with policies adopted to avoid or mitigate an environmental effect.

TABLE 3.10-3: 2023 GENERAL PLAN EXISTING POLICY CONSISTENCY

GENERAL PLAN POLICY	PROJECT CONSISTENCY
LAND USE ELEMENT	
<p>LU-P-1: Growth shall mitigate its own impacts and shall provide a positive benefit to the City of Manteca.</p>	<p>Consistent. The proposed Project is subject to CEQA Review. The CEQA review process enables interested parties to evaluate the proposed Project in terms of its environmental consequences, to examine and recommend methods to eliminate or reduce potential adverse impacts. Chapters 3.1 through 3.15 includes a description of project-related impacts associated with each environmental topic, identification of appropriate mitigation measures, and a conclusion as to the significance of each impact. Implementation of project-specific mitigation measures would reduce impacts to the greatest extent feasible, consistent with this policy. Additionally, the proposed development would provide a range of housing and provide additional park and recreational areas for existing residents of Manteca to utilize.</p>
<p>LU-P-3: The City shall encourage a pattern of development that promotes the efficient and timely development of public services and facilities</p>	<p>Consistent. Impacts on utilities infrastructure (sewer, water, storm drainage, and solid waste) are discussed in Section 3.14, Utilities. Impacts on public services infrastructure (fire stations, police stations, and libraries) are discussed in Section 3.12, Public Services. The proposed Project includes development of the utility infrastructure required to support the development and the City has adequate existing facilities to provide public services to the proposed Project.</p>
<p>LU-P-4: The City shall encourage a development pattern that is contiguous with the boundary of the City.</p>	<p>Consistent. As discussed in Chapter 2.0, Project Description, The City limits run conterminous with the northern and western boundary of the Project site, as well as portions of the eastern boundary. The Project proposes the annexation of the Development Area for the proposed residential development, as well as the annexation of the Non-development Area and existing right-of-way owned by San Joaquin County to ensure implementation of the Project would not result in the creation of an unincorporated island.</p>
<p>LU-P-40: Development shall be managed to ensure that adequate public facilities and services, as defined in the Public Services and Facilities Element, are planned and provided.</p>	<p>Consistent. Impacts on utilities infrastructure (sewer, water, storm drainage, and solid waste) are discussed in Section 3.14, Utilities. Impacts on public services infrastructure (fire stations, police stations, and libraries) are discussed in Section 3.12, Public Services. The proposed Project includes development of the utility infrastructure required to support the development and the City has adequate existing facilities to provide public services to the proposed Project.</p>
<p>LU-P-41: The City shall encourage the continuation of agricultural uses on lands within the Primary and</p>	<p>Consistent. The Project site is located in the Primary Urban Services Boundary and is currently active farmland. Impacts to agricultural resources, including</p>

<i>GENERAL PLAN POLICY</i>	<i>PROJECT CONSISTENCY</i>
Secondary Urban Services Boundary lines pending their development as urban uses consistent with the General Plan	the conversion of farmland, is discussed in Chapter 3.2, Agricultural Resources. The proposed development would result in the conversion of farmland into a residential neighborhood with park and recreational areas, consistent with the General Plan.
LU-P-42: The City will encourage the continuation of small, specialty agricultural operations and demonstration or educational agricultural operations that are compatible with the adjacent urban uses	Consistent. Impacts to agricultural resources, including the potential to result in conflicts with adjacent agricultural lands or indirectly cause conversion of agricultural lands, is discussed in Chapter 3.2, Agricultural Resources. However, the City’s Right-to-Farm Ordinance reduces the potential for conflict between existing agricultural lands and adjacent uses. The notification procedures in the ordinance serves to inform landowners and developers of non-agricultural uses of what the expectations are in the area with regard to agricultural activities and to reduce complaints.
PUBLIC FACILITIES AND SERVICES ELEMENT	
PF-P-1. Facilitate development in the in-fill areas by extending infrastructure.	Consistent. Impacts on utilities infrastructure (sewer, water, storm drainage, and solid waste) are discussed in Section 3.14, Utilities and Service Systems. The proposed Project includes development of the utility infrastructure required to support the development. The Development Project will connect to the existing water main lines in Woodward Avenue, Airport Way, and at various stub streets from the existing Terra Ranch Subdivision to the west. Additionally, an internally looped system of water lines will be installed within the Development Area. The proposed Project will also construct a new 12” sewer main in Airport Way to extend the existing City of Manteca collection and treatment system. Onsite storm drainage would be installed to serve the proposed Project. As discussed in Chapter 2.0, Project Description, development of the proposed Project would include construction of a new storm drainage system, including a drainage collection system, storm drain pump stations, and detention basins. Discharge from the basins will be conveyed through controlled flow pumping facilities to existing City of Manteca and SSJID dual use main storm drain laterals. It is also noted that utilities (water and sewer service) will be brought to the property line of the Non-Development Areas.
PF-P-12. The City shall continue to assess a water development fee on all new commercial, industrial, and residential development sufficient to fund systemwide capacity improvements. The water development fee schedule shall be periodically reviewed and revised as necessary.	Consistent. The Project would be subject to Chapter VI Development Fees, of the Municipal Code. These development fees would be used by the City to finance public facility design, construction, operation, and maintenance.
PF-P-18. Ensure wastewater collection and treatment for all development in the City and the safe disposal of wastes.	Consistent. Impacts on utilities infrastructure, including wastewater, are discussed in Section 3.14, Utilities and Service Systems. The proposed Project includes development of the utility infrastructure required to support the development.
PF-P-19. The City will maintain capacity to process combined residential, commercial, and industrial flow.	Consistent. As noted in response to Policy PF-P-1, impacts on utilities infrastructure, including wastewater, are discussed in Section 3.14, Utilities and Service Systems. The Project would provide all necessary infrastructure required to serve the Project site. The infrastructure improvements are consistent with City infrastructure plans.
PF-P-20. The City shall develop new sewage treatment and trunk line capacity as necessary to serve new development.	Consistent. As noted in response to Policy PF-P-1, impacts on utilities infrastructure, including wastewater, are discussed in Section 3.14, Utilities and Service Systems. The Project would provide all necessary infrastructure required to serve the Project site. The infrastructure improvements are consistent with City infrastructure plans.

3.10 LAND USE, POPULATION, AND HOUSING

<i>GENERAL PLAN POLICY</i>	<i>PROJECT CONSISTENCY</i>
PF-I-9. The City will require all sewage generators within its service area to connect to the City's system, except those areas where on-site treatment and disposal facilities are deemed appropriate.	Consistent. As noted in response to Policy PF-P-1, impacts on utilities infrastructure (sewer, water, storm drainage, and solid waste) are discussed in Section 3.14, Utilities and Service Systems. The Project would provide all necessary infrastructure required to serve the Project site. The infrastructure improvements are consistent with City infrastructure plans
PF-P-28. Storm drainage systems within new development areas shall include open drainage corridors where feasible to supplement or replace an underground piped drainage system. The drainage systems would provide for short-term storm water detention, storm water conveyance for storm waters exceeding a 10-year event, storm water quality treatment, bike and pedestrian paths, and visual open space within neighborhoods. The width and length of the corridors would be determined by the stormwater management requirements. The drainage systems would provide a pedestrian connection between parks and access to open space from residential neighborhoods. The neighborhoods would be designed with homes oriented to, rather than backing on the open space corridor.	Consistent. As noted in response to Policy PF-P-1, impacts on utilities infrastructure (sewer, water, storm drainage, and solid waste) are discussed in Section 3.14, Utilities and Service Systems. The Project would provide all necessary infrastructure required to serve the Project site. The infrastructure improvements are consistent with City infrastructure plans
PF-P-46. The City shall expand the community and neighborhood park system with the goal of providing neighborhood park facilities within reasonable walking distance of all city residential areas.	Consistent. As discussed in Chapter 2.0, Project Description, approximately 10.87 acres of a centralized park plus 1.28 acres of levee access and pocket park are proposed within the Development Area. In addition, the Project would be subject to Chapter 1 General Fees, including the Park Acquisition and Improvements Fees and Neighborhood Park-in-Lieu Fee, of the Municipal Code. These impact fees would be used by the City to finance public facility design, construction, operation, and maintenance.
PF-P-47. The City shall use joint development of park and drainage detention basins in the development of neighborhood parks.	Consistent. As discussed in Chapter 2.0, Project Description, development of the proposed Project would include construction of a new storm drainage system, including a drainage collection system, storm drain pump stations, and detention basins. The stormwater drainage detention basins will be constructed to meet the City of Manteca Standards. Discharge from the basins will be conveyed through controlled flow pumping facilities to existing City of Manteca and SSJID dual use main storm drain laterals.
PF-P-53. All new residential development will be required to pay a park acquisition and improvement fee, based on providing 5 acres per 1,000 residents, to fund system-wide improvements.	Consistent. As discussed in Chapter 2.0, Project Description, approximately 10.87 acres of a centralized park plus 1.28 acres of levee access and pocket park are proposed within the Development Area. In addition, the Project would be subject to Chapter 1 General Fees, including the Park Acquisition and Improvements Fees and Neighborhood Park-in-Lieu Fee, of the Municipal Code. These impact fees would be used by the City to finance public facility design, construction, operation, and maintenance.
SAFETY ELEMENT	
S-P-2. The City shall require new development to mitigate the potential impacts of geologic hazards through Building Plan review.	Consistent. Project design would be subject to the California Building Code (CBC), which includes applicable safety and design standards related to Geologic Hazards. Additionally, as required by Mitigation Measure 3.6-1 in Section 3.6, the Project would be required to prepare a final geotechnical evaluation of soils at a design-level, consistent with Sections 1803.1.1.2, 1803.5.11. and 1803.5.12 of the CBC.
S-P-3. The City shall require new development to mitigate the potential impacts of seismic induced settlement of uncompacted fill and liquefaction	Consistent. Project design would be subject to the California Building Code (CBC), which includes applicable safety and design standards related to Geologic Hazards. Additionally, as required by Mitigation Measure 3.6-1 in Section 3.6, the Project would be required to prepare a final geotechnical

GENERAL PLAN POLICY	PROJECT CONSISTENCY
(water-saturated soil) due to the presence of a high water table.	evaluation of soils at a design-level, consistent with Sections 1803.1.1.2, 1803.5.11. and 1803.5.12 of the CBC.
S-P-5. The City shall ensure that all public facilities, such as buildings, water tanks, and reservoirs, are structurally sound and able to withstand seismic shaking and the effects of seismically induced ground failure.	Consistent. Project design would be subject to the California Building Code (CBC), which includes applicable safety and design standards related to Geologic Hazards. Additionally, as required by Mitigation Measure 3.6-1 in Section 3.6, the Project would be required to prepare a final geotechnical evaluation of soils at a design-level, consistent with Sections 1803.1.1.2, 1803.5.11. and 1803.5.12 of the CBC.
S-P-10. Ensure that any existing structures subject to the 200-year flood provide adequate protection from flood hazards.	<p>Consistent: Impacts associated with potential flood events are discussed in Section 3.9, Hydrology and Water Quality, of this EIR. As discussed, The Project site is currently located in Zone X, protected by levee, which by definition indicates an area protected by levees from the 1% annual chance flood. The Project site is located within the 200-year floodplain as delineated on the most recent 200-year flood plain maps for Manteca. San Joaquin Area Flood Control Agency (SJAFCA) is the sole Local Flood Management Agency (LFMA) with the responsibility to prepare the adequate progress reports on an annual basis. As of 2021, SJFACA has made adequate progress (as defined in California Government Code Section 65007) on the construction of a flood protection system that will result in flood protection equal to or greater than the urban level of flood protection in urban or urbanizing areas. SJAFCA is engaged in efforts to meet this Urban Level of Protection (ULOP) requirement by 2028.</p> <p>A Regional SJAFCA 200-Year Development Impact Fee (Regional DIF) paid by property owners developing within the 200-year floodplain was also adopted by SJAFCA in November 2018. SJAFCA and the City of Manteca, as a member agency, will continue planning efforts to provide adequate funding for necessary improvements, pursuant to the SB 5 requirements. SJAFCA and RD 17 will continue to implement the two-component approach as described above that would phase in the flood control project improvements prior to 2028.</p> <p>Until the improvements are in place, the Lumina at Machado Ranch Project site would be subject to potential flooding risk of three feet or greater from a storm event that has a one in two hundred chance of occurring in any given year. This is a potentially significant impact until SJAFCA improvements are completed prior to 2028. The project will be required to implement Mitigation Measure 3.9-3, which includes funding contribution toward the improvements that would establish the urban level of flood protection.</p>
S-P-12. New residential development, including mobile homes, shall be constructed so that the lowest floor is at least one foot above the 200-year flood level.	Consistent: See Response to Policy S-P-10 above.
S-P-11. Ensure that the impacts of potential flooding are adequately analyzed when considering areas for future urban expansion.	Consistent: See Response to Policy S-P-10 above.

SOURCE: DE NOVO PLANNING GROUP, 2021.

As previously stated, the City is currently undergoing an update to the General Plan. For informational purposes, Table 3.10-4 provides an analysis of the proposed Project’s consistency with the Manteca General Plan Update policies. As shown in Table 3.10-4, the proposed Project is consistent with the City’s proposed General Plan Update policies and would not conflict with policies adopted to avoid or mitigate an environmental effect.

3.10 LAND USE, POPULATION, AND HOUSING

TABLE 3.10-4: GENERAL PLAN UPDATE PROPOSED POLICY CONSISTENCY

GENERAL PLAN POLICY	PROJECT CONSISTENCY
LAND USE	
<p>LU-2.7: Review public and private development proposals and land use changes within the City's Sphere of Influence (SOI) and Planning Area for consistency within the General Plan.</p>	<p>Consistent. The Annexation Area of the Project includes the Non-development Area and existing right-of-way owned by San Joaquin County as part of the annexation application to ensure implementation of the Project would not result in the creation of an unincorporated island (Non-development Areas and existing right-of-way). Additionally, the Project includes the existing right-of-way (Woodward Avenue and Airport Way) as part of the annexation application consistent with San Joaquin County LAFCo standards, as Woodward Avenue and Airport Way will serve as main access points to the proposed residential subdivision and generate additional traffic.</p>
<p>LU-3.2: Require the design of new residential development to be consistent with any applicable design guidelines, to ensure harmony with Manteca's unique character and compatibility with existing surrounding land uses.</p>	<p>Consistent. Consistency with applicable design guidelines and community character are discussed in Section 3.1, Aesthetics. As discussed in the section, Additionally, the proposed Project would result in a land use consistent with the planned development of the Project area, resulting in a residential subdivision development aesthetically similar to the surrounding uses.</p>
<p>LU-3.3: Encourage residential development to occur in a balanced and efficient pattern that reduces sprawl, preserves open space, and creates convenient connections to other land uses</p>	<p>Consistent. As discussed in Chapter 2.0, Project Description, The City limits run conterminous with the northern and western boundary of the Project site, as well as portions of the eastern boundary. The Project proposes the annexation of the Development Area for the proposed residential development, as well as the annexation of the Non-development Area and existing right-of-way owned by San Joaquin County to ensure implementation of the Project would not result in the creation of an unincorporated island.</p>
<p>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.</p>	<p>Consistent. Impacts to agricultural resources, including the potential to result in conflicts with adjacent agricultural lands is discussed in Chapter 3.2, Agricultural Resources. Impacts related to noise, smoke, odor are discussed in Chapter 3.3 Air Quality and Chapter 3.11 Noise. As discussed in Section 3.3, Air Quality, the SJVAPCD GAMAQI was used to determine air quality impacts resulting from the Project. The proposed Project would comply with pre-existing requisite federal, State, SJVAPCD, and other local regulations and requirements, as well as implement the mitigation measures provided by the SJVAPCD for construction and operations, including mitigation measures identified in Section 3.3. All impacts associated with excessive noise levels were determined to be less than significant or less than significant with mitigation. See Section 3.11, Noise, for the complete discussions.</p>
COMMUNITY FACILITIES & SERVICES ELEMENT	
<p>CF-1.2: Ensure that new growth and development participates in the provision and expansion of essential community services and facilities, including parks, fire and police facilities, schools, utilities, roads, and other needed infrastructure, does not exceed the City's ability to provide services, and does not place an economic burden on existing residents.</p>	<p>Consistent. Impacts on utilities infrastructure (sewer, water, storm drainage, and solid waste) are discussed in Section 3.14, Utilities and Service Systems. Impacts on public services infrastructure (fire stations, police stations, and libraries) are discussed in Section 3.12, Public Services. The proposed Project includes development of the utility infrastructure required to support the development. In addition, the City current has existing public services capacity to support the development.</p>
<p>Cf-1.3: Require new development to demonstrate that the City's existing or planned community services and facilities can accommodate the increased demand for said services and facilities prior to or at completion of the project.</p>	<p>Consistent. See response to CF-1.2 above.</p>
<p>Cf-1.4: Require new development to offset or mitigate impacts to community services and facilities, including fair share contribution of all costs of required public infrastructure and services,</p>	<p>Consistent. The Project would be subject to Chapter VI Development Fees, of the Municipal Code. These development fees would be used by the City to finance public facility design, construction, operation, and maintenance.</p>

GENERAL PLAN POLICY	PROJECT CONSISTENCY
to ensure that service levels for existing users are not degraded or impaired.	
Cf-2.2: Ensure that the Police Department has adequate funding, staff, and equipment to accommodate existing and future growth in Manteca.	Consistent. The Project would be subject to Chapter VI Development Fees, of the Municipal Code. These development fees would be used by the City to ensure adequate funding, staff, and equipment to accommodate existing and future growth in Manteca.
Cf-2.7: Emphasize the use of physical site planning as an effective means of preventing crime. Open spaces, landscaping, parking lots, parks, play areas, and other public spaces should be designed with maximum feasible visual and aural exposure to community residents.	Consistent. Project design would be reviewed by the City and Manteca Police Department for opportunities to use building and site design features as a means for crime prevention and reduction.
Cf-3.2: Provide fire services to serve the existing and projected population	Consistent. The Project would be subject to Chapter VI Development Fees, of the Municipal Code. These development fees would be used by the City to ensure adequate funding, staff, and equipment to accommodate existing and future growth in Manteca.
CF-3.5: Ensure that new development is designed, constructed, and equipped consistent with the requirements of the California Fire Code in order to minimize the risk of fire.	Consistent. The proposed Project would be subject to the California Building Code, which requires the California Fire Code. In addition, Project design would be reviewed by the City and Manteca Fire Department for opportunities to use building and site design features as a means for crime prevention and reduction.
Cf-4.2: Expand, renovate, and maintain high quality parks, trails, and recreation facilities, programs, and services to accommodate existing and future needs that address traditional and non-traditional recreation, active and passive recreation, wellness, historical, cultural arts, environmental education, conservation, accessibility, inclusion, diversity, safety, and new technology.	Consistent. As discussed in Chapter 2.0, Project Description, approximately 10.87 acres of a centralized park plus 1.28 acres of levee access and pocket park are proposed within the Development Area. In addition, the Project would be subject to Chapter 1 General Fees, including the Park Acquisition and Improvements Fees and Neighborhood Park-in-Lieu Fee, of the Municipal Code. These impact fees would be used by the City to finance public facility design, construction, operation, and maintenance of parks, trails and recreation facilities.
CF-4.4: Maintain an overall minimum ratio of 5 acres of developed neighborhood and community parkland per 1,000 residents within the city limits, requiring new development to contribute to its fair share of park and recreation needs. The distribution of land between park types and guidelines for park types shall be determined within the Parks and Recreation Master Plan.	Consistent. As discussed in Chapter 2.0, Project Description, approximately 10.87 acres of a centralized park plus 1.28 acres of levee access and pocket park are proposed within the Development Area. In addition, the Project would be subject to Chapter I General Fees, including the Park Acquisition and Improvements Fees and Neighborhood Park-in-Lieu Fee, of the Municipal Code. These impact fees would be used by the City to finance public facility design, construction, operation, and maintenance of parks, trails and recreation facilities.
CF-4.5: Develop new parks, trails, and recreation facilities through developer fees in areas which are accessible and convenient to the community, prioritizing areas that are lacking these facilities.	Consistent. As discussed in Chapter 2.0, Project Description, approximately 10.87 acres of a centralized park plus 1.28 acres of levee access and pocket park are proposed within the Development Area. In addition, the Project would be subject to Chapter 1 General Fees, including the Park Acquisition and Improvements Fees and Neighborhood Park-in-Lieu Fee, of the Municipal Code. These impact fees would be used by the City to finance public facility design, construction, operation, and maintenance of parks, trails and recreation facilities.
CF-6.1: Ensure the water system and supply is adequate to meet the needs of existing and future development and is utilized in a sustainable manner	Consistent. Impacts on utilities infrastructure, including the water system, are discussed in Section 3.14, Utilities and Service Systems. The Project would provide all necessary infrastructure required to serve the Project site. The infrastructure improvements are consistent with City infrastructure plans.

3.10 LAND USE, POPULATION, AND HOUSING

<i>GENERAL PLAN POLICY</i>	<i>PROJECT CONSISTENCY</i>
CF-6.7: Ensure that all new development provides for and funds a fair share of the costs for adequate water distribution, including line extensions, easements, and plant expansions.	Consistent. The Project would be subject to Chapter VI Development Fees, of the Municipal Code. These development fees would be used by the City to ensure adequate funding, staff, and equipment to accommodate existing and future growth in Manteca.
CF-7.1: Ensure adequate wastewater collection and treatment infrastructure to serve existing and future development and the safe disposal of wastes	Consistent. Impacts on utilities infrastructure, including wastewater treatment and collection, are discussed in Section 3.14, Utilities and Service Systems. The Project would provide all necessary infrastructure required to serve the Project site. The infrastructure improvements are consistent with City infrastructure plans
CF-7.2: Develop new sewage treatment and trunk line capacity as necessary to serve new development. The City shall incorporate current technologies into the design and operation of these facilities.	Consistent. See response to CF-7.1 above.
CF-8.2: Require all development projects to demonstrate how storm water runoff will be detained or retained on-site and/or conveyed to the nearest drainage facility as part of the development review process and as required by the City's NPDES Municipal Regional Permit. Project applicants shall mitigate any drainage impacts as necessary and shall demonstrate that the project will not result in any increase in off-site runoff during rain and flood events.	Consistent. The Project would implement BMPs during construction and operation. Mitigation Measure 3.9-1 in Section 3.9, Hydrology and Water Quality, requires the preparation of a SWPPP, and structural BMPs.
CF-8.3: Continue to allow dual-use detention basins for parks, ball fields, and other uses where appropriate.	Consistent. As discussed in Chapter 2.0, Project Description, development of the proposed Project would include construction of a new storm drainage system, including a drainage collection system, storm drain pump stations, and detention basins. The stormwater drainage detention basins will be constructed to meet the City of Manteca Standards. Discharge from the basins will be conveyed through controlled flow pumping facilities to existing City of Manteca and SSJID dual use main storm drain laterals.
SAFETY ELEMENT	
S-2.2: Regulate development in areas of seismic and geologic hazards to reduce risks to life and property associated with earthquakes, liquefaction, erosion, and expansive soils.	Consistent. Project design would be subject to the California Building Code (CBC), which includes applicable safety and design standards related to Geologic Hazards. Additionally, as required by Mitigation Measure 3.6-1 in Section 3.6, the Project would be required to prepare a final geotechnical evaluation of soils at a design-level, consistent with Sections 1803.1.1.2, 1803.5.11. and 1803.5.12 of the CBC.
S-2.3: Require new development to mitigate the potential impacts of geologic and seismic hazards, including uncompacted fill, liquefaction, and subsidence, through the development review process.	Consistent. Project design would be subject to the California Building Code (CBC), which includes applicable safety and design standards related to Geologic Hazards. Additionally, as required by Mitigation Measure 3.6-1 in Section 3.6, the Project would be required to prepare a final geotechnical evaluation of soils at a design-level, consistent with Sections 1803.1.1.2, 1803.5.11. and 1803.5.12 of the CBC.
S-3.3: Require evaluation of potential flood hazards prior to approval of development projects to determine whether the proposed development is reasonably safe from flooding and consistent with California Department of Water Resources Urban	Consistent: Impacts associated with potential flood events are discussed in Section 3.9, Hydrology and Water Quality, of this EIR. As discussed, The Project site is currently located in Zone X, protected by levee, which by definition indicates an area protected by levees from the 1% annual chance flood. The Project site is located within the 200-year floodplain as delineated on the most

GENERAL PLAN POLICY	PROJECT CONSISTENCY
<p>Level of Flood Protection Criteria (ULOP). The City shall not approve the execution of a development agreement, a tentative map, or a parcel map for which a tentative map is not required, or a discretionary permit or other discretionary entitlement that would result in the construction of a new building, or construction that would result in an increase in allowed occupancy for an existing building, or issuance of a ministerial permit that would result in the construction of a new residence for property that is located within a 200-year flood hazard zone, unless the adequacy of flood protection as described in Government Code §65865.5(a), 65962(a), or 66474.5(a), has been demonstrated.</p>	<p>recent 200-year flood plain maps for Manteca. San Joaquin Area Flood Control Agency (SJAFCA) is the sole Local Flood Management Agency (LFMA) with the responsibility to prepare the adequate progress reports on an annual basis. As of 2021, SJFACA has made adequate progress (as defined in California Government Code Section 65007) on the construction of a flood protection system that will result in flood protection equal to or greater than the urban level of flood protection in urban or urbanizing areas. SJAFCA is engaged in efforts to meet this Urban Level of Protection (ULOP) requirement by 2028.</p> <p>A Regional SJAFCA 200-Year Development Impact Fee (Regional DIF) paid by property owners developing within the 200-year floodplain was also adopted by SJAFCA in November 2018. SJAFCA and the City of Manteca, as a member agency, will continue planning efforts to provide adequate funding for necessary improvements, pursuant to the SB 5 requirements. SJAFCA and RD 17 will continue to implement the two-component approach as described above that would phase in the flood control project improvements prior to 2028.</p> <p>Until the improvements are in place, the Lumina at Machado Ranch Project site would be subject to potential flooding risk of three feet or greater from a storm event that has a one in two hundred chance of occurring in any given year. This is a potentially significant impact until SJAFCA improvements are completed prior to 2028. The project will be required to implement Mitigation Measure 3.9-3, which includes funding contribution toward the improvements that would establish the urban level of flood protection.</p>

SOURCE: DE NOVO PLANNING GROUP, 2021.

Overall, the proposed Project would have a **less than significant** impact relative to the General Plan.

MANTECA ZONING CODE

The Manteca Zoning Code implements the General Plan. The Project site is currently within the jurisdiction of San Joaquin County. The San Joaquin County LAFCo will require the Project site to be pre-zoned by the City of Manteca in conjunction with the proposed annexation. The City’s pre-zoning will include the following zoning designations: Planned Development (PD), One-Family Dwelling Zoning District (R-1), General Commercial Zoning District (CG), and Mixed Use Commercial Zoning District (CMU). The pre-zoning would go into effect upon annexation into the City of Manteca. The proposed pre-zoning for the Project site is shown on Figure 2.0-9. These proposed zone changes would ensure that zoning would be consistent with the proposed General Plan designations within the Project site. The zoning ordinance establishes permitted uses, development densities and intensities, and development standards for each zone to ensure that public health, safety, and general welfare are protected, consistent with the purpose of the Zoning Code. All existing City development standards and zoning requirements for the proposed zoning are applicable to any activities on the Project site. The City will review each component of the proposed Project as plans (improvement plans, building plans, site plans, etc.) are submitted for final approval to ensure that they are consistent with the City’s Zoning ordinance. Approval of the zone change would ensure that the proposed Project would be consistent with the Zoning Code and will have a **less than significant** impact relative to this topic.

3.10 LAND USE, POPULATION, AND HOUSING

SAN JOAQUIN LAFCO

The Project site is currently in an unincorporated portion of San Joaquin County adjacent to the City of Manteca's city limits, within the Manteca SOI (as defined in the Manteca General Plan). The proposed Project requires annexation of 183.4 acres of the Project site into the city limits.

LAFCo is serving as a responsible agency for this EIR pursuant to their *LAFCo Procedures for the California Environmental Quality Act (Adopted June 20, 2007)*. When LAFCo is a Responsible Agency under CEQA, in order to approve the annexation, the Commission will certify that it has reviewed the Lead Agency's environmental documents and, if required, adopt findings for approval and statements of overriding considerations in accordance with Sections 15091 and 15903 of the CEQA Guidelines. The City of Manteca has consulted LAFCo. The consultation process included sending LAFCo a copy of the Notice of Preparation during the 30-day public review period. LAFCo will also be sent a copy of the Draft EIR during the 45-day public review period and the Final EIR for their use in the annexation process. If the Executive Officer determines that the Draft and Final EIR are adequate for their use, he/she will prepare, or cause to be prepared, "draft" Findings and Statements, findings for approval, and statements of overriding considerations for LAFCo Commission consideration. If the LAFCo Commission approves the annexation, the Executive Officer will file a Notice of Determination within five working days after deciding to approve the annexation.

The San Joaquin LAFCo will review the proposed annexation for consistency with the *LAFCo Change of Organization Policies and Procedures (Including Annexations and Reorganizations)*. These policies and procedures govern San Joaquin LAFCo determinations regarding annexations to all agencies. The following policies will be reviewed as part of the annexation process by the San Joaquin LAFCo.

General Standards for Annexation and Detachment

1. Spheres and Municipal Service Reviews: This policy requires an annexation to be consistent with the internal planning horizon of the SOI, which means that the land would normally lie within the first planning increment (5 to 10 year) boundary. The annexation must also only be approved if the Municipal Services Review and the SOI Plan demonstrates that adequate services can be provided with the timeframe needed by the annexed area. Proposed annexations that lie outside of the first planning increment (5 to 10 year) boundary are presumed to be inconsistent with the Sphere Plan and must first request a sphere amendment prior to proceeding with the annexation. The City's Sphere of Influence map identifies the Project site as within the SOI and within the 10-year and 20-year frames for potential development; therefore, a sphere amendment prior to proceeding with the annexation would not be required.
2. Plan for Services: This policy states that every proposal must include a Plan for Services that addresses the items identified in Section 56653 of the Government Code. The Plan for Services must be consistent with the Municipal Service Review of the Agency.

The Draft EIR assesses service capacity and demands for these services. There are not any service deficiencies noted by the City of Manteca, or contained within this EIR that are anticipated to occur after installation of infrastructure. The proposed annexation area is within the Manteca SOI as defined by LAFCo and the City and was assumed for low density residential development in the City's 2015 Municipal Service Review.

3. Contiguity: This policy requires the land to be annexed to be contiguous to the city. Territory is not contiguous if the only connection is a strip of land more than 300 feet long and less than 200 wide, that width to be exclusive of highways. The boundaries of a proposed annexation or reorganization must not create or result in areas that are difficult to serve.

The proposed annexation area is contiguous to the Manteca city limits along the northern boundary of the Project site.

4. Development within Jurisdiction: This policy encourages development of existing vacant or non-prime agricultural lands for urban uses within the existing jurisdiction or SOI before approval that would lead to the development of existing open space lands for non-open space uses.

The proposed annexation area is within the SOI and lands within the Project area are designated for development under the General Plan. However, the Project site is currently in agricultural operation and agricultural resources are located adjacent to the proposed annexation area. There are no Williamson Act contracts on or adjacent to the Project site. However, the Department of Conservation Farmland Mapping and Monitoring Program (FMMP) delineates important farmland on and adjacent to the Project site. The proposed annexation area is not designated by the City of Manteca for agricultural uses. However, the San Joaquin County General Plan designated the site for agricultural uses. The proposed Project would result in the development of existing open space lands for non-open space uses. The San Joaquin LAFCo does not impose agricultural mitigation requirements for the conversion of agricultural land to urban uses related to annexations or other applications.

Impacts related to the development of existing open space lands were analyzed in the Manteca General Plan EIR. The General Plan EIR determined that impacts would be significant and unavoidable. According to the General Plan EIR, although City and County policies would support continued agricultural uses and would require urban development to fund agricultural conservation easements and other programs, no additional feasible mitigation is available.

5. Progressive Urban Pattern: This policy states that annexations shall be progressive steps toward filling in the territory designated by the SOI. Proposed growth shall be from inner toward outer areas.

The proposed annexation area is within the SOI and is designated for urban development under the General Plan. The proposed Project would develop the proposed annexation area

3.10 LAND USE, POPULATION, AND HOUSING

(adjacent to the Manteca city limits) and would continue the pattern of urbanization, including commercial and residential uses, that occurs within the City limits to the east and southeast of the proposed annexation area.

6. **Piecemeal Annexation Prohibited:** This policy requires annexations to be consistent with the schedule for annexation that is contained in the agency's Sphere of Influence Plan. LAFCo will modify small piece-meal or irregular annexations, to include additional territory in order to promote orderly annexation and logical boundaries, while maintaining a viable proposal. In such cases, detailed development plans may not be required for those additional areas but compliance with CEQA is required.

Annexation of the Project area is contiguous with the city limits.

7. **Annexations to Eliminate Islands:** This policy states that proposals to annex islands or to otherwise correct illogical distortion of boundaries will normally be approved unless they would violate another provision of these standards. In order to avoid the creation of an island or to encourage the elimination an existing island, detailed development plans may not be required for the remnant areas.

The proposed annexation includes lands contiguous with the current city limits and parcels within the SOI. Parcels proposed for annexation do not involve the elimination of islands.

8. **Annexations that Create Islands:** This policy states that an annexation will not be approved if it will result in the creation of an island of unincorporated territory or otherwise cause or further the distortion of existing boundaries. The Commission may nevertheless approve such an annexation where it finds that the application of this policy would be detrimental to the orderly development of the community and that a reasonable effort has been made to include the island in the annexation but that inclusion is not feasible at this time.

The proposed annexation includes lands contiguous with the current city limits and parcels within the SOI. Parcels proposed for annexation would not involve the creation of an island of unincorporated territory.

9. **Substantially Surrounded:** This policy states that for the purpose of applying the provisions of the Cortese-Knox-Hertzberg Act regarding island annexation without protest hearings (Section 56375.5), the subject territory of an annexation proposal shall be deemed "substantially surrounded" if it is within the sphere of influence of the affected city and two-thirds of its boundary is surrounded by the affected city.

As previously stated, the proposed annexation does not involve island annexation. Therefore, this policy is not relevant to the proposed annexation.

10. **Definite and Certain Boundaries:** This policy states that all boundaries shall be definite and certain and conform to lines of assessment or ownership. The Commission's approval of

boundary change proposals containing split parcels will typically be subject to a condition requiring the recordation of a parcel map, lot line adjustment or other instrument to avoid creating remnants of legal lots.

The proposed annexation boundaries are definite and certain and conform to lines of ownership.

11. Service Requirements: This policy states that an annexation shall not be approved merely to facilitate the delivery of one or a few services to the detriment of the delivery of a larger number of services or service more basic to public health and welfare.

The proposed annexation is not merely to facilitate the delivery of one or a few services to the detriment of the delivery of a larger number of services or service more basic to public health and welfare. As stated further in the Section 3.12 (Public Services and Recreation) and Section 3.14 (Utilities), the City has adequate service capacity to serve the proposed Project without reducing the adequacy of services elsewhere. Therefore, the proposed annexation is consistent with this policy.

12. Adverse Impact of Annexation on the Other Agencies: This policy states that LAFCo will consider any significant adverse effects upon other service recipients or other agencies serving the area and may condition any approval to mitigate such impacts. Significant adverse effects shall include the effect of proposals that negatively impact special districts' budgets or services or require the continuation of services without the provision of adequate funding. LAFCo will not approve annexations that fail to provide adequate mitigation of the adverse impact on the district. LAFCo may determine an appropriate temporary mitigation, if any, and impose that temporary mitigation to the extent it is within its powers. If the needed mitigation is not within LAFCo's authority and approval would, in the opinion of the Commission, seriously impair the District's operation, the Commission may choose to deny the application.

This EIR includes an assessment of the impacts of the proposed Project and proposed annexation on service agencies. The proposed commercial and residential development and the proposed annexation would not result in any significant, adverse impacts to any of the service agencies such that it would seriously impair operation.

13. District's Proposal to Provide new, different, or Divestiture of a Particular Function or Class of Services: This policy relates to proposals for new, different, or divestiture of services, which is not relevant to the proposed annexation.
14. Disadvantaged Unincorporated Communities: This policy prohibits an annexation where a Disadvantaged Unincorporated Community (DUC) is contiguous to the area of proposed annexation, unless a concurrent application to annex all or a portion of the DUC to the subject city has been filed. The Project area is not within or contiguous to an area designated as a DUC. This policy is not relevant to the proposed annexation.

3.10 LAND USE, POPULATION, AND HOUSING

City Annexations

1. **Annexation of Streets:** This policy states that annexations shall reflect the logical allocation of streets and rights of way to assure that the city reasonably assumes the burden of providing adequate roads to the property to be annexed. LAFCo will require cities to annex streets where adjacent lands that are in the city will generate additional traffic or where the annexation will isolate sections of county road. Cities shall include all contiguous public roads that can be included without fragmenting governmental responsibility by alternating city and county road jurisdiction over short section of the same roadway. When a street is a boundary line between two cities the centerline of the street may be used as the boundary or may follow a boundary reached by agreement of the affected cities.
2. **Pre-zoning Required:** This policy states that the Cortese-Knox-Hertzberg Act requires the city to pre-zone territory to be annexed, and prohibits subsequent changes to the General Plan and /or pre-zoning designations for a period of two years after completion of the annexation.

The proposed Project includes the adoption of pre-zoning for the proposed annexation area, which will serve to regulate the uses of land and structures within the Project area. The City's pre-zoning will include the following zoning designations: PD, R1, CG, and CMU. The Project will be subject to the development standards as described in the Municipal Code. The Municipal Code is proposed to ensure consistency between land use and zoning designations. The proposed annexation is consistent with this policy.

The policies discussed above are intended to ensure orderly reorganization to local jurisdictional boundaries, including annexations. Ultimately, LAFCo will determine whether the proposed annexation would first require an update to the *Manteca Municipal Service Review* in order to approve the annexation. This LAFCo policy was not specifically adopted to avoid or mitigate an environmental effect, rather it is intended to ensure orderly and logical reorganization to local jurisdiction boundaries, including annexations. The proposed Project is consistent with LAFCo policies adopted to address environmental impacts, with the exception of impacts to agricultural lands. Section 3.2, Agricultural Resources, addresses impacts related to conversion of agricultural land. As such, implementation of the proposed Project will have a **less than significant** impact relative to this topic.

Impact 3.10-3: The proposed Project would not significantly conflict with an applicable habitat conservation plan or natural community conservation plan. (Less than Significant)

SAN JOAQUIN COUNTY MULTI-SPECIES HABITAT CONSERVATION AND OPEN SPACE PLAN

The City's participation in the SJMSCP allows projects within Manteca's jurisdiction to seek coverage under the SJMSCP for impacts to endangered, threatened, and species of special concern. The SJMSCP provides a process to offset impacts to biological resources, conserve open space, maintain

the agricultural economy, and allow development within the County. It was also created to obtain the necessary 32 permits from the U.S. Fish and Wildlife Service and the California Department of Fish and Game for the next 50 years in exchange for participating projects paying mitigation fees. Fees are based on the amount and quality of land converted from agricultural or open space uses to urban uses. These fees are used to preserve and create habitats to be managed in perpetuity through the establishment of habitat preserves. Ninety-seven species are covered under the SJMSCP, with the intent to provide comprehensive mitigation pursuant to local, state, and federal regulations for impacts on these species from permitted activities under the Plan. Participation in the SJMSCP confers authorization for activities that result (or may result in) incidental take of covered state-listed species, federally listed species, and other covered.

As described in Section 3.4, Biological Resources, prior to issuance of grading permits, the Project Proponent will be required to coordinate with SJCOG and will be responsible for the appropriate coverage, permits, compensatory mitigation or fees, and Project-specific avoidance, minimization, and mitigation measures as defined within the SJMSCP. The proposed Project does not conflict with the implementation of the SJMSCP and has appropriate measures to ensure compliance with payment of mitigation fees. Implementation of the Project would have a **less than significant** impact relative to compliance with the SJMSCP.

Impact 3.10-4: The proposed Project has the potential to induce substantial population growth in an area. (Less than Significant)

Section 15126.2(d) of the CEQA Guidelines requires that an EIR evaluate the growth-inducing impacts of a proposed action. A growth-inducing impact is defined by the CEQA Guidelines as:

The way in which a proposed Project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth...It is not assumed that growth in an area is necessarily beneficial, detrimental, or of little significance to the environment.

Based on the CEQA Guidelines, growth inducement is any growth that exceeds planned growth of an area and results in new development that would not have taken place without implementation of the project. A project can have direct and/or indirect growth inducement potential. Direct growth inducement would result if a project, for example, involved construction of new housing. A project would have indirect growth inducement potential if it established substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises) or if it would involve a construction effort with substantial short-term employment opportunities that would indirectly stimulate the need for additional housing and services to support the new employment demand (*Napa Citizens for Honest Government v. Napa County Board of Supervisors* (2001) 91 Cal.App.4th 342). Similarly, a project would indirectly induce growth if it would remove an obstacle to additional growth and development, such as removing a constraint on a required public service.

3.10 LAND USE, POPULATION, AND HOUSING

A project providing an increased water supply or wastewater treatment/collection in an area where this service historically limited growth could be considered growth-inducing.

The State CEQA Guidelines further explain that the environmental effects of induced growth are considered indirect impacts of the proposed action. These indirect impacts or secondary effects of growth may result in significant, adverse environmental impacts. Potential secondary effects of growth include increased demand on other community and public services and infrastructure, increased traffic and noise, and adverse environmental impacts such as degradation of air and water quality, degradation or loss of plant and animal habitat, and conversion of agricultural and open space land to developed uses.

Growth inducement may constitute an adverse impact if the growth is not consistent with or accommodated by the land use plans and growth management plans and policies for the area affected. Local land use plans provide for land use development patterns and growth policies that allow for the orderly expansion of urban development supported by adequate urban public services, such as water supply, roadway infrastructure, sewer service, and solid waste service.

Components of Growth: The timing, magnitude, and location of land development and population growth in a region are based on various interrelated land use and economic variables. Key variables include regional economic trends, market demand for residential and non-residential uses, land availability and cost, the availability and quality of transportation facilities and public services, proximity to employment centers, the supply and cost of housing, and regulatory policies or conditions. Since the general plan of a community defines the location, type, and intensity of growth, it is the primary means of regulating development and growth in California.

GROWTH EFFECTS OF THE PROJECT

Direct Population Growth: The proposed Project proposes housing that would result in direct population growth. The proposed Project includes the addition of 827 residential units. Using the most recent U.S. Census (2019) and Department of Finance (2020) estimates for the average number of persons residing in a dwelling unit in the City of Manteca of 3.18, the addition of 827 housing units could increase the population of the city by an estimated 2,630 persons.

The proposed Project would require a minor General Plan Land Use Amendment to adjust the exact location and shape of the Park land use designation within Development Area. No changes are proposed for the Non-development Area 1. It is noted that the General Plan Update proposed changes to the land use in Non-development Area 2, and the proposed Land Uses under this General Plan Amendment are consistent with the General Plan Update. The proposed General Plan land uses are shown on Figure 2.0-8.

Indirect Population Growth: Projects that include employment generating uses have the potential to result in indirect population growth through the creation of jobs or the extension of infrastructure into areas that were not previously served. As noted in section 2.0 Project Description, the proposed Project does not include the development of employment generating uses within the Development

Area. In addition, the proposed infrastructure improvements would be adequately sized to serve the proposed Project only. The proposed infrastructure would not be oversized to accommodate any growth beyond the Project site into areas that were not previously served.

Furthermore, the Manteca GP anticipated the Development Area for LDR and P uses. The LDR land use designation allows for a density of 2.1 to 8 du/ac, indicating the General Plan anticipated a maximum of approximately 1,200 single family residential uses being developed within the Development Area. As noted in the project description, the proposed Project includes the addition of 827 residential units.

The Housing Element of the Manteca GP identifies that the City has capacity for 5,782 residential units on vacant and underdeveloped sites. The proposed Project would not result in indirect population growth beyond the City's planned capacity. Therefore, the proposed Project is not anticipated to exceed the planned growth (directly or indirectly) in the area beyond what is anticipated in the City of Manteca General Plan. While the proposed Project will result in growth, it is not anticipated to significantly induce growth. Implementation of the proposed Project will have a **less than significant** impact relative to this topic.

Impact 3.10-5: The proposed Project has the potential to displace substantial numbers of people or existing housing. (Less than Significant)

The Development Area has some existing improvements including two existing houses and barns and/or sheds with associated equipment, dirt and gravel roadways. Development of the Project would add 827 residential units. While the two existing residences within the Development Area would be demolished prior to development of the proposed Project, the existing residential structures in the Non-Development Area would remain. Therefore, the proposed Project would not displace substantial numbers of people or existing housing. The proposed Project will have a **less than significant** impact related to the displacement of substantial numbers of people or existing housing.

This page intentionally left blank.

This section provides a general description of the existing noise sources in the Project Site vicinity, a discussion of the regulatory setting, and identifies potential noise impacts associated with the proposed Project. Project impacts are evaluated relative to applicable noise level criteria and to the existing ambient noise environment. Mitigation measures have been identified for significant noise-related impacts.

3.11.1 ENVIRONMENTAL SETTING

KEY TERMS

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given area 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.
Attenuation	The reduction of noise.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response. A-weighted dB values are expressed as dBA.
Decibel or dB	Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.
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 a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	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 L ₅₀ is the sound level exceeded 50 percent of the time during the one-hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
SEL	Sound exposure levels. A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.

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 dB) 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.

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 dB is generally perceived as a doubling in loudness. For example, a 70-dB sound is half as loud as an 80-dB sound, and twice as loud as a 60-dB 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 to measure the ambient noise level 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. CNEL is similar to L_{dn} , but includes

a +5-dB penalty for evening noise. Table 3.11-1 lists several examples of the noise levels associated with common situations.

TABLE 3.11-1: TYPICAL NOISE LEVELS

<i>COMMON OUTDOOR ACTIVITIES</i>	<i>NOISE LEVEL (dB)</i>	<i>COMMON INDOOR ACTIVITIES</i>
	--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; and
- 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 1 dB change cannot be perceived;
- Outside of the laboratory, a 3-dB change is considered a just-perceivable difference;
- A change in level of at least 5-dB is required before any noticeable change in human response would be expected; and

- A 10-dB 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 AND FUTURE NOISE AND VIBRATION ENVIRONMENTS

Existing and Surrounding Land Uses

North: Existing residential developments border the north side of the Annexation Area.

East: The Gurmat Parkash Sikh Gurdwara temple is located near the northeastern side of the Annexation Area. Farmland and existing single-family residences are located east and southeast of the Annexation Area.

South: Farmland and single-family residences border the southern boundary of the Annexation Area.

West: Farmland borders the western boundary of the Annexation Area.

Existing Ambient Noise Levels

To quantify the existing ambient noise environment in the Project Vicinity, continuous (24-hour) noise level measurements were conducted on the Development Area site on December 3rd – December 4th, 2020. The noise measurement locations are shown on Figure 3.11-1. The noise level measurement survey results are provided in Table 3.11-2. Appendix B of Appendix E shows the complete results of the noise monitoring survey.

The sound level meters were programmed to collect hourly noise level intervals at each site during the survey. The maximum value (L_{max}) represents the highest noise level measured during an interval. The average value (L_{eq}) represents the energy average of all of the noise measured during an interval. The median value (L_{50}) represents the sound level exceeded 50 percent of the time during an interval.

TABLE 3.11-2: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

SITE	LOCATION	DATE/TIME	L _{DN}	AVERAGE MEASURED HOURLY NOISE LEVELS, dB					
				DAYTIME (7AM-10PM)			NIGHTTIME (10PM-7AM)		
				L _{EQ}	L ₅₀	L _{MAX}	L _{EQ}	L ₅₀	L _{MAX}
Continuous (24-hour) Noise Level Measurements¹									
LT-1	Northern side of Development Area, 25 yds to centerline of Woodward Ave.	12/3/20 – 12/4/20	63	59	56	74	56	51	71
LT-2	Southeastern side of Development Area, 9 yds to centerline of Airport Way	12/3/20 – 12/4/20	71	70	56	88	63	46	85

SOURCE: SAXELBY ACOUSTICS, 2020.

Larson Davis Laboratories (LDL) Model 812 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with an LDL Model 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).

Existing and Future Traffic Noise Environment at Sensitive Receptors

OFF-SITE TRAFFIC NOISE IMPACT ASSESSMENT METHODOLOGY

To predict existing noise levels due to traffic, the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calveno reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions.

Traffic noise analysis was conducted for roadways which would affect sensitive receptors within the Development Area, Non-Development Areas 1 and 2, as well as receptors which lie outside of the Annexation Area. Traffic noise level changes are presented by roadway rather than by planning boundary.

Traffic volumes for existing conditions were obtained from the traffic data prepared for the proposed Project (De Novo, 2021). Truck percentages and vehicle speeds on the local area roadways were estimated from field observations.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each project-area roadway segment. Where traffic noise barriers are predominately along a roadway segment, a -5 offset was added to the noise prediction model to account for various

3.11 NOISE

noise barrier heights. A -5 to dB offset was also applied where outdoor activity areas are shielded by intervening buildings. In some locations, sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers or sound walls. However, the traffic noise analysis is believed to be representative of the majority of sensitive receptors located closest to the project-area roadway segments analyzed in this report.

Table 3.11-3 shows the existing traffic noise levels in terms of L_{dn} at closest sensitive receptors along each roadway segment. A complete listing of the FHWA Model input data is contained in Appendix C of Appendix E.

TABLE 3.11-3: EXISTING TRAFFIC NOISE LEVELS

<i>ROADWAY</i>	<i>SEGMENT</i>	<i>EXTERIOR TRAFFIC NOISE LEVEL, DB L_{DN}</i>
Airport Way	North of Daniels Street	64.2
Airport Way	South of Daniels Street	51.9
Highway 120 Ramp	WB Off Ramp	56.4
Highway 120 Ramp	WB On Ramp	53.9
Airport Way	Between 120 Ramps	52.2
Highway 120 Ramp	EB On Ramp	55.8
Highway 120 Ramp	EB Off Ramp	55.9
Airport Way	Highway 120 to Atherton Dr.	51.3
Airport Way	Atherton Drive to Woodward Avenue	66.5
Airport Way	South of Woodward Avenue	65.9
Woodward Avenue	West of Airport Way	65.1
Woodward Avenue	East of Airport Way	60.6
Airport Way	South of Peach Road	63.4
East Peach Road	East of Airport Way	46.8
Woodward Avenue	Woodward W of McKinley	N/A
Woodward Avenue	Woodward E of McKinley	N/A
McKinley Avenue	McKinley N of Woodward	N/A

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM DE NOVO AND SAXELBY ACOUSTICS, 2021.

PREDICTED EXTERIOR TRAFFIC NOISE LEVELS

Implementation of the proposed Project would result in an increase in ADT volumes on the local roadway network, and consequently, an increase in noise levels from traffic sources along affected segments. Tables 3.11-4 and 3.11-5 show the predicted traffic noise level increases on the local roadway network for Existing, Existing + Project, Cumulative No Project, and Cumulative + Project conditions. Appendix C of Appendix E provides the complete inputs and results of the FHWA traffic noise modeling.

TABLE 3.11-4: EXISTING AND EXISTING PLUS PROJECT TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN} , dB) AT NEAREST SENSITIVE RECEPTORS				
		EXISTING	EXISTING + PROJECT	CHANGE	EX. GP CRITERIA ¹	SIGNIFICANT UNDER EX. GP?
					PROPOSED GP CRITERIA ²	SIGNIFICANT UNDER GP UPDATE?
Airport Way	North of Daniels Street	64.2	64.7	0.4	+5-10 dBA	No
					+3 dBA	No
Airport Way	South of Daniels Street	51.9	52.2	0.3	>60 dBA	No
					+ 5 dBA	No
Highway 120 Ramp	WB Off Ramp	56.4	57.4	1.0	>60 dBA	No
					+ 5 dBA	No
Highway 120 Ramp	WB On Ramp	53.9	54.4	0.5	>60 dBA	No
					+ 5 dBA	No
Airport Way	Between 120 Ramps	52.2	53.0	0.9	>60 dBA	No
					+ 5 dBA	No
Highway 120 Ramp	EB On Ramp	55.8	57.3	1.5	>60 dBA	No
					+ 5 dBA	No
Highway 120 Ramp	EB Off Ramp	55.9	56.5	0.6	>60 dBA	No
					+ 5 dBA	No
Airport Way	Highway 120 to Atherton Dr.	51.3	52.8	1.5	>60 dBA	No
					+ 5 dBA	No
Airport Way	Atherton Drive to Woodward Avenue (Includes Non-Development Area 2)	66.5	68.9	2.5	+5-10 dBA	No
					+1.5 dBA	Yes
Airport Way	South of Woodward Avenue	65.9	68.4	2.5	+5-10 dBA	No
					+1.5 dBA	Yes
Woodward Avenue	West of Airport Way (Includes Non-Development Area 1)	65.1	67.1	2.0	+5-10 dBA	No
					+1.5 dBA	Yes
Woodward Avenue	East of Airport Way	60.6	61.0	0.4	+5-10 dBA	No
					+3 dBA	No
Airport Way	South of Peach Road	63.4	63.6	0.1	+5-10 dBA	No
					+3 dBA	No
East Peach Road	East of Airport Way	46.8	46.8	0.0	>60 dBA	No
					+ 5 dBA	No
Woodward Avenue	Woodward W of McKinley	N/A	N/A	N/A	N/A	N/A
					N/A	N/A
Woodward Avenue	Woodward E of McKinley	N/A	N/A	N/A	N/A	N/A
					N/A	N/A

3.11 NOISE

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN} , dB) AT NEAREST SENSITIVE RECEPTORS				
		EXISTING	EXISTING + PROJECT	CHANGE	EX. GP CRITERIA ¹	SIGNIFICANT UNDER EX. GP?
					PROPOSED GP CRITERIA ²	SIGNIFICANT UNDER GP UPDATE?
McKinley Avenue	McKinley N of Woodward	N/A	N/A	N/A	N/A	N/A
					N/A	N/A

¹ EXISTING GP CRITERIA - 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/CONTROVERSY AS DEMONSTRATED AT WORKSHOPS/HEARINGS, OR BY CORRESPONDENCE
- PRIOR CEQA DETERMINATIONS BY OTHER AGENCIES SPECIFIC TO THE PROJECT

² PROPOSED GP CRITERIA - 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.

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM DE NOVO AND SAXELBY ACOUSTICS. 2021.

TABLE 3.11-5: CUMULATIVE AND CUMULATIVE + PROJECT TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN} , dB) AT NEAREST SENSITIVE RECEPTORS				
		CUMULATIVE	CUMULATIVE + PROJECT	CHANGE	EX. GP CRITERIA ¹	SIGNIFICANT UNDER EX. GP?
					PROPOSED GP CRITERIA ²	SIGNIFICANT UNDER GP UPDATE?
Airport Way	North of Daniels Street	66.6	66.7	0.1	+5-10 dBA	No
					+1.5 dBA	No
Airport Way	South of Daniels Street	54.6	54.8	0.1	>60 dBA	No
					+ 5 dBA	No
Highway 120 Ramp	WB Off Ramp	60.7	61.0	0.3	+5-10 dBA	No
					+3 dBA	No
Highway 120 Ramp	WB On Ramp	56.7	56.9	0.2	>60 dBA	No
					+ 5 dBA	No
Airport Way	Between 120 Ramps	55.4	55.7	0.3	>60 dBA	No

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN} , DB) AT NEAREST SENSITIVE RECEPTORS				
		CUMULATIVE	CUMULATIVE + PROJECT	CHANGE	EX. GP CRITERIA ¹	SIGNIFICANT UNDER EX. GP?
					PROPOSED GP CRITERIA ²	SIGNIFICANT UNDER GP UPDATE?
					+ 5 dBA	No
Highway 120 Ramp	EB On Ramp	60.7	61.0	0.3	+5-10 dBA	No
					+3 dBA	No
Highway 120 Ramp	EB Off Ramp	58.4	58.6	0.2	>60 dBA	No
					+ 5 dBA	No
Airport Way	Highway 120 to Atherton Dr.	55.1	55.6	0.5	>60 dBA	No
					+ 5 dBA	No
Airport Way	Atherton Drive to Woodward Avenue (Includes Non-Development Area 2)	70.4	71.3	0.9	+5-10 dBA	No
					+1.5 dBA	No
Airport Way	South of Woodward Avenue	67.9	69.6	1.7	+5-10 dBA	No
					+1.5 dBA	Yes
Woodward Avenue	West of Airport Way (Includes Non-Development Area 1)	69.7	70.1	0.4	+5-10 dBA	No
					+1.5 dBA	No
Woodward Avenue	East of Airport Way	63.4	63.7	0.3	+5-10 dBA	No
					+3 dBA	No
Airport Way	South of Peach Road	65.0	65.1	0.1	+5-10 dBA	No
					+1.5 dBA	No
East Peach Road	East of Airport Way	49.8	50.0	0.2	>60 dBA	No
					+ 5 dBA	No
Woodward Avenue	Woodward West of McKinley	55.3	55.3	0.0	>60 dBA	No
					+ 5 dBA	No
Woodward Avenue	Woodward East of McKinley	65.1	65.6	0.5	+5-10 dBA	No
					+1.5 dBA	No
McKinley Avenue	McKinley North of Woodward	51.7	52.1	0.4	>60 dBA	No
					+ 5 dBA	No

¹ EXISTING GP CRITERIA - 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

3.11 NOISE

- PUBLIC REACTIONS/CONTROVERSY AS DEMONSTRATED AT WORKSHOPS/HEARINGS, OR BY CORRESPONDENCE
- PRIOR CEQA DETERMINATIONS BY OTHER AGENCIES SPECIFIC TO THE PROJECT

² PROPOSED GP CRITERIA - 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.

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM DE NOVO AND SAXELBY ACOUSTICS. 2021.

Based upon data in Tables 3.11-4 and 3.11-5, the proposed Project is predicted to result in a maximum traffic noise level increase of 2.5 dB.

EVALUATION OF TRANSPORTATION NOISE ON DEVELOPMENT AREA

Traffic Noise Levels

Woodward Avenue

Cumulative plus project traffic noise levels are predicted to be 71 dB L_{dn} at a distance of 65 feet from the centerline of Woodward Avenue, assuming no shielding from intervening buildings or sound walls. The proposed residential uses are located approximately 65 feet from the centerline Woodward Avenue. Therefore, maximum exterior noise levels of 71 dB L_{dn} are predicted for these uses.

Airport Way

Cumulative plus project traffic noise levels are predicted to be 72 dB L_{dn} at a distance of 65 feet from the centerline of Airport Way, assuming no shielding from intervening buildings or sound walls. The proposed residential uses are located approximately 65 feet from the centerline Airport Way. Therefore, maximum exterior noise levels of 72 dB L_{dn} are predicted for these uses.

CONSTRUCTION NOISE ENVIRONMENT

During the construction of the proposed project, including roads, water, and sewer lines and related infrastructure, noise from construction activities would add to the noise environment in the project vicinity. As indicated in Table 3.11-6, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dB at a distance of 50 feet.

TABLE 3.11-6: CONSTRUCTION EQUIPMENT NOISE

TYPE OF EQUIPMENT	MAXIMUM LEVEL, DB	
	25 FEET	50 FEET
Backhoe	84	78
Compactor	89	83
Compressor (air)	84	78
Concrete Saw	96	90
Dozer	88	82
Dump Truck	82	76
Excavator	87	81
Generator	87	81
Jackhammer	94	89
Pneumatic Tools	91	85

SOURCE: ROADWAY CONSTRUCTION NOISE MODEL USER'S GUIDE. FEDERAL HIGHWAY ADMINISTRATION. FHWA-HEP-05-054. JANUARY 2006.

CONSTRUCTION VIBRATION ENVIRONMENT

The primary vibration-generating activities associated with the proposed Project would happen during construction when activities such as grading, utilities placement, and road construction occur. Table 3.11-7 shows the typical vibration levels produced by construction placement.

TABLE 3.11-7: VIBRATION LEVELS FOR VARIOUS CONSTRUCTION EQUIPMENT

TYPE OF EQUIPMENT	PEAK PARTICLE VELOCITY @ 25 FEET (INCHES/SECOND)	PEAK PARTICLE VELOCITY @ 100 FEET (INCHES/SECOND)
Large Bulldozer	0.089	0.011
Loaded Trucks	0.076	0.010
Small Bulldozer	0.003	0.000
Auger/drill Rigs	0.089	0.011
Jackhammer	0.035	0.004
Vibratory Hammer	0.070	0.009
Vibratory Compactor/roller	0.210	0.026

SOURCE: FEDERAL TRANSIT ADMINISTRATION, TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT GUIDELINES, MAY 2006

3.11.2 REGULATORY SETTING

FEDERAL

There are no federal regulations related to noise that apply to the proposed project.

STATE

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines, Appendix G, indicate that a significant noise impact may occur if a project exposes persons to noise or vibration levels in excess of local general plans or noise ordinance standards, or cause a substantial permanent or temporary increase in ambient noise levels. CEQA standards are discussed more below under the Thresholds of Significance section.

California State Building Codes

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn} or CNEL in any habitable room.

Title 24 also mandates that for structures containing noise-sensitive uses to be located where the L_{dn} or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment

CITY OF MANTECA

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 3.11-8].

TABLE 3.11-8: MAXIMUM ALLOWABLE NOISE EXPOSURE MOBILE NOISE SOURCES

LAND USE ⁴	OUTDOOR ACTIVITY AREAS ¹	INTERIOR SPACES	
		L _{DN} /CNEL, dB	L _{EQ} /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 3.11-9]. Noise mitigation may be required to meet Table 9-2 [Table 3.11-9] performance standards.

TABLE 3.11-9: 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 3.11-9] 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 adoption of the Lumina at Machado Ranch EIR. 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 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, 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 or, if the criteria in Table S-2 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 or Table S-2, 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 and Table S-2.
- 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.

- 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, 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 or S-2.
 - Proposed transportation projects are likely to produce noise levels exceeding the levels specified in Table S-1 or S-2 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. However, noise from these projects may be allowed to exceed the standards contained in Table S-1, 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.
- 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 do not exceed acceptable levels.

TABLE S-1: 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	-	-

¹Where a proposed use is not specifically listed, the use shall comply with the standards for the most similar use as determined by the City.

²Outdoor 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.

³In 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

⁴Determined for a typical worst-case hour during periods of use.

TABLE S-2: PERFORMANCE STANDARDS FOR STATIONARY NOISE SOURCES, INCLUDING AFFECTED PROJECTS^{1,2,3,4}

NOISE LEVEL DESCRIPTOR	DAYTIME	NIGHTTIME
	7 AM TO 10 PM	10 PM TO 7 AM
Hourly Leq, dBA	55	45

¹Each 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.

²No standards have been included for interior noise levels. Standard construction practices should, with the exterior noise levels identified, result in acceptable interior noise levels.

³Stationary noise sources which are typically of concern include, but are not limited to, the following:

- HVAC Systems
- Pump Stations
- Emergency Generators
- Steam Valves
- Cooling Towers/Evaporative Condensers
- Lift Stations
- Boilers
- Steam Turbines

<i>Generators</i>	<i>Fans</i>
<i>Air Compressors</i>	<i>Heavy Equipment</i>
<i>Conveyor Systems</i>	<i>Transformers</i>
<i>Pile Drivers</i>	<i>Grinders</i>
<i>Drill Rigs</i>	<i>Gas or Diesel Motors</i>
<i>Welders</i>	<i>Cutting Equipment</i>
<i>Outdoor Speakers</i>	<i>Blowers</i>

⁴The 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.

VIBRATION STANDARDS

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the

vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

The City does not have specific policies pertaining to vibration levels. However, vibration levels associated with construction activities are addressed as potential noise impacts associated with project implementation.

Human and structural response to different vibration levels is influenced by several factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.11-10 indicates that the threshold for damage to structures ranges from 0.2 to 0.6 peak particle velocity in inches per second (in/sec p.p.v). A threshold of 0.20 in/sec p.p.v. is considered to be a reasonable threshold for short-term construction projects.

TABLE 3.11-10: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

PEAK PARTICLE VELOCITY		HUMAN REACTION	EFFECT ON BUILDINGS
MM/SEC.	IN./SEC.		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage.

Source: Caltrans. *Transportation Related Earthborn Vibrations*. TAV-02-01-R9601 February 20, 2002.

3.11.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact related to noise if it will result in:

Would the project:

- a. Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- b. Expose persons to, or generate, excessive groundborne vibration or groundborne noise levels;
- c. Cause a substantial permanent increase in ambient noise levels in the project vicinity above existing levels without the project;
- d. Cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels without the project;
- e. Expose persons residing or working in the project area to excessive noise levels if located within an airport land use plan or where such a plan has not been adopted within 2 miles of a public airport or public use airport; or
- f. Expose persons residing or working in the project area to excessive noise levels if located within the vicinity of a private airstrip.

Determination of a Significant Increase in Noise Levels

Existing (2003) General Plan Policies

The CEQA guidelines define a significant impact of a project if it “increases substantially the ambient noise levels for adjoining areas”. Implementation Measure N-I-3 of the City of Manteca General Plan Noise Element provides specific guidance for assessing increases in ambient noise, as follows:

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/controversy as demonstrated at workshops/hearings, or by correspondence*
- *prior CEQA determinations by other agencies specific to the project*

Proposed General Plan Policies

Under the City’s proposed General Plan Update, the following policy S-5d will apply when evaluating substantial noise increases:

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.

IMPACTS AND MITIGATION MEASURES

Impact 3.11-1: Would the project generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies (Less Than Significant with Mitigation)

TRAFFIC NOISE INCREASES UNDER EXISTING (2003) GENERAL PLAN STANDARDS

As shown in Tables 3.11-4 and 3.11-5, some noise-sensitive receptors located along the project-area roadways within and outside of the Annexation Area are currently exposed to exterior traffic noise levels exceeding the City of Manteca 60 dB L_{dn} exterior noise level standard for residential uses. These receptors would continue to experience elevated exterior noise levels with implementation of the proposed Project. For example, sensitive receptors under Existing conditions located adjacent to Airport Way, north of Woodward Avenue (includes Non-Development Area 2) experience an exterior noise level of approximately 66.5 dB L_{dn} . Under Existing + Project conditions, exterior traffic noise levels are predicted to be approximately 68.9 dB L_{dn} . Exterior noise levels in both scenarios exceed the City's exterior noise level standard of 60 dB L_{dn} . Under the City's existing General Plan, the project's contribution of 2.5 dB would not exceed the City's increase criteria of 5-10 dB.

TRAFFIC NOISE INCREASES UNDER PROPOSED GENERAL PLAN STANDARDS

Under Plus Project conditions, the proposed Project's contribution to increased traffic ranges between 0.1 dB and 2.5 dB, with three roadway segments experiencing increases that would exceed the 1.5 dB increase threshold where existing noise levels are over 65.0 dB. As shown in Table 3.11-4 and 3.11-5, significant traffic noise increases under the Plus Project traffic conditions include the following segments:

- **Airport Way from Atherton to Woodward Avenue (Includes Non-Development Area 2)** – noise levels are predicted to increase by 2.5 dB under Existing Plus Project conditions.
- **Airport Way South of Woodward Avenue** – noise levels are predicted to increase by 1.5 dB under Existing Plus Project conditions.
- **Woodward Avenue west of Airport Way (includes Non-Development Area 1)** – noise levels are predicted to increase by 2.0 dB under Existing Plus Project conditions and 1.7 dB under Cumulative Plus Project conditions.

In order to reduce this impact, the use of sound walls or quiet pavement would be required. Construction of new six-foot-tall sound walls could be a potential mitigation measure. However, all of the impacted residential uses along the roadway segments listed above are accessed directly via driveways off the main roadway. As such, a sound wall would require many driveway openings, resulting in partial noise barriers. These openings in the sound wall would substantially reduce the noise barrier performance. Additionally, construction of noise barriers at off-site locations would result in encroachment into private property. Such encroachment would require private property owners to allow permission to enter their property. Therefore, noise barriers are not considered to be a feasible option.

Quiet pavements are typically assumed to provide a 3 to 5 dBA reduction. Assuming a minimum reduction of 3 dBA, quiet pavement placed along sensitive receptor areas on the previously-listed roadway segments could reduce the proposed Project noise level increases to the following roadway segments:

- **Airport Way from Atherton to Woodward Avenue (Includes Non-Development Area 2)** – noise levels are predicted to increase by 2.5 dB without mitigation. Use of quiet pavement would eliminate this increase. Approximately 1,250 feet (approximately 0.24 miles) of quiet pavement would be required. See Figure 3.11-3 for approximate required pavement locations.
- **Airport Way South of Woodward Avenue** – noise levels are predicted to increase by 1.5 dB without mitigation. Use of quiet pavement would eliminate this increase. Approximately 1,460 feet (approximately 0.28 miles) of quiet pavement would be required. See Figure 3.11-3 for approximate required pavement locations.
- **Woodward Avenue west of Airport Way (Includes Non-Development Area 1)** – noise levels are predicted to increase by 2.0 dB without mitigation. Use of quiet pavement would eliminate this increase. Approximately 2,050 feet (approximately 0.39 miles) of quiet

pavement would be required. See Figure 3.11-3 for approximate required pavement locations.

Therefore, with implementation of Mitigation Measure 3.11-1, traffic noise impacts would be *less-than-significant*.

OPERATIONAL NOISE INCREASES (DEVELOPMENT AREA)

The proposed Development Area would include typical residential noise sources which would be compatible with the adjacent existing residential uses (a.k.a. neighborhood traffic, yard equipment, truck deliveries, garbage collected, etc.). Proposed neighborhood parks are located internal to the project site and would not impact off-site residential uses. Therefore, operational noise by the proposed project is not analyzed further.

CONSTRUCTION NOISE

During the construction of the project, including roads, water, sewer lines, and related infrastructure, noise from construction activities would add to the noise environment in the proposed Project vicinity. Existing receptors adjacent to the proposed construction activities are located north, south west, and east of the site.

As indicated in Table 3.11-6, activities involved in construction would generate maximum noise levels ranging from 82 to 96 dB L_{max} at a distance of 50 feet. Noise would also be generated during the construction phase by increased truck traffic on area roadways. A significant project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration and would likely occur primarily during daytime hours.

Construction activities would be temporary in nature and are exempt from noise regulation during the hours of 7:00 AM to 7:00 PM, as outlined in the City's Municipal Code:

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.

Therefore, with implementation of MM 3.11-1, temporary construction noise impacts would be reduced to less than significant.

3.11 NOISE

EXTERIOR NOISE IMPACTS ON PROPOSED DEVELOPMENT AREA

Table 3.11-11 shows the predicted traffic noise levels at the proposed Development Area residential uses adjacent to the major project-area arterial roadways. Based upon Table 3.11-11, exterior noise levels would exceed the City's 60 dBA L_{dn} normally acceptable exterior noise standard. The 60 dBA L_{dn} noise contours for Woodward Avenue and South Airport Way were found to extend to an approximate distance of 330 feet and 350 feet from the roadway centerlines, respectively. This would encroach into the outdoor activity areas of proposed residences. Therefore, use of a physical barrier would be the only feasible method to reduce exterior noise levels to within the City's allowable exterior noise standard range.

Table 3.11-11 also indicates the property line noise barrier heights required to achieve compliance with an exterior noise level standard of 60 dB L_{dn} .

TABLE 3.11-11: CUMULATIVE + PROJECT TRANSPORTATION NOISE LEVELS AT PROPOSED RESIDENTIAL USES

SEGMENT	APPROXIMATE RESIDENTIAL SETBACK, FEET ¹	PREDICTED NOISE LEVELS, DB L_{DN} ²					
		NO BARRIER	6' BARRIER	7' BARRIER	8' BARRIER	9' BARRIER	10' BARRIER
Woodward Avenue	65	71	65	64	62	61	60
S Airport Way	70	72	66	64	63	62	61

NOTES:

¹ SETBACK DISTANCES ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS TO THE CENTER OF RESIDENTIAL BACKYARDS.

² THE MODELED NOISE BARRIERS ASSUME FLAT SITE CONDITIONS WHERE ROADWAY ELEVATIONS, BASE OF WALL ELEVATIONS, AND BUILDING PAD ELEVATIONS ARE APPROXIMATELY EQUIVALENT. SOUND BARRIER HEIGHT MAY BE ACHIEVED THROUGH THE USE A WALL AND EARTHEN BERM TO ACHIEVE THE TOTAL HEIGHT (I.E. 6-FOOT WALL ON 2-FOOT BERM IS EQUIVALENT TO AN 8-FOOT TALL BARRIER).

SOURCE: SAXELBY ACOUSTICS. 2021.

The modeled noise barriers assume flat site conditions where roadway elevations, base of wall elevations, and building pad elevations are approximately equivalent.

The Table 3.11-11 data indicate that a noise barrier greater than 10-feet in height would be required to achieve compliance with the City of Manteca 60 dB L_{dn} exterior noise level standard for the proposed residential uses. It should be noted that Table 9-1 (Table 3.11-8) of the City's General Plan notes that residential uses are conditionally compatible with exterior noise levels of up to 65 dB L_{dn} , assuming that interior noise levels are in compliance with the City's interior noise level standards. The City of Manteca has indicated that they would only support construction of a sound wall matching the height of the adjacent residential development in the proposed Project vicinity. The adjacent residential development to the north employs an eight (8) foot tall masonry wall for traffic noise protection. Therefore, it is expected that the proposed Project would also include construction of an 8-foot tall masonry wall or a 6-foot tall masonry wall on a two (2) foot tall earthen berm, for a total barrier height of 8-feet. Based upon Table 3.11-11, an 8-foot tall barrier would

achieve an exterior noise level of 62-63 dBA L_{dn} which is within the City's conditionally compatible exterior noise standard of up to 65 dB L_{dn} .

INTERIOR NOISE IMPACTS AT PROPOSED DEVELOPMENT AREA

Modern construction typically provides a 25-dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB L_{dn} , or less, will typically comply with the City of Manteca 45 dB L_{dn} interior noise level standard. Additional noise reduction measures, such as acoustically-rated windows, are generally required for exterior noise levels exceeding 70 dB L_{dn} .

It should be noted that noise barriers do not typically reduce exterior noise levels at second floor locations. The proposed residential uses are predicted to be exposed to unmitigated first-floor exterior transportation noise levels up to 72 dBA L_{dn} . Mitigated first-floor noise levels of 63 dBA L_{dn} are expected after construction of sound barriers.

Based upon a 25-dB exterior-to-interior noise level reduction, interior noise levels are predicted to be up to 48 dB L_{dn} at second floors and 38 dBA L_{dn} at first floors. Accordingly, predicted interior noise levels along the first row of residential uses along Woodward Avenue and South Airport Way are predicted to exceed the City's 45 dB L_{dn} interior noise level standard at second floor locations.

Appendix D of Appendix E of this EIR shows an estimate of the interior noise control measures required to meet the City's interior noise level standards.

Implementation of the following mitigation measure will ensure that these potential impacts are reduced to a *less than significant* level.

MITIGATION MEASURE(S)

Mitigation Measure 3.11-1A: *Construction activities shall adhere to the requirements of the City of Manteca Municipal Code with respect to hours of operation. This requirement shall be noted in the improvements plans prior to approval by the City's Public Works Department.*

Mitigation Measure 3.11-1B: *All equipment shall be fitted with factory equipped mufflers, and in good working order. This requirement shall be noted in the improvements plans prior to approval by the City's Public Works Department.*

Mitigation Measure 3.11-2: *An 8-foot tall sound wall shall be constructed along the Woodward Avenue and South Airport Way frontages, adjacent to proposed Development Area residential uses, in order to achieve the City's exterior noise standards. Noise barrier walls shall be constructed of concrete panels, concrete masonry units, earthen berms, or any combination of these materials that achieve the required total height. These requirements shall be included in the improvements plans prior to their approval by the City's Public Works Department. Figure 3.11-2 shows the recommended sound wall locations.*

Mitigation Measure 3.11-3: For the first rows of lots on the Development Area site adjacent to the Woodward Avenue or South Airport Way right of way, second floor exterior facades with a view of Woodward Avenue or South Airport Way would need the following noise control measures:

- Windows shall have a sound transmission class (STC) rating of 32.
- Interior gypsum at exterior walls shall be 5/8”;
- Ceiling gypsum shall be 5/8”;
- Exterior finish shall be stucco, fiber cement lap siding, or system with equivalent weight per square foot;
- Mechanical ventilation shall be installed in all residential uses to allow residents to keep doors and windows closed, as desired for acoustical isolation.
- As an alternative to the above-listed interior noise control measures, the applicant may provide a detailed analysis of interior noise control measures once building plans become available. The analysis should be prepared by a qualified noise control engineer and shall outline the specific measures required to meet the City of Manteca 45 dB L_{dn} interior noise level standard.

Mitigation Measure 3.11-4: To reduce traffic noise increases to less than +1.5 dB, the following roadway segments shall be paved with quiet pavement:

- Airport Way from Atherton to Woodward Avenue (Includes Non-Development Area 2)
- Airport Way South of Woodward Avenue
- Woodward Avenue west of Airport Way (includes Non-Development Area 1)

The pavement would be required for any portion of roadway passing a noise-sensitive use not protected by an existing sound wall, and for a distance of 100 feet on either side of the sensitive-use. This requirement shall be noted on the Project improvement plans. Approximate pavement locations are shown on Figure 3.11-3.

Impact 3.11-2: Would the project generate excessive groundborne vibration or groundborne noise levels. (Less Than Significant with Mitigation)

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural damage.

With the exception of vibratory compactors, the Table 3.11-7 data indicate that construction vibration levels anticipated for the proposed Project are less than the 0.2 in/sec threshold at a distance of 25 feet. Use of vibratory compactors within 26 feet of the adjacent buildings could cause vibrations in excess of 0.2 in/sec. Sensitive receptors which could be impacted by construction-related vibrations, especially vibratory compactors/rollers, are located approximately 10-15 feet, or further, from the Development Area project site.

Implementation of the following mitigation measure will ensure that these potential impacts are reduced to a **less than significant** level.

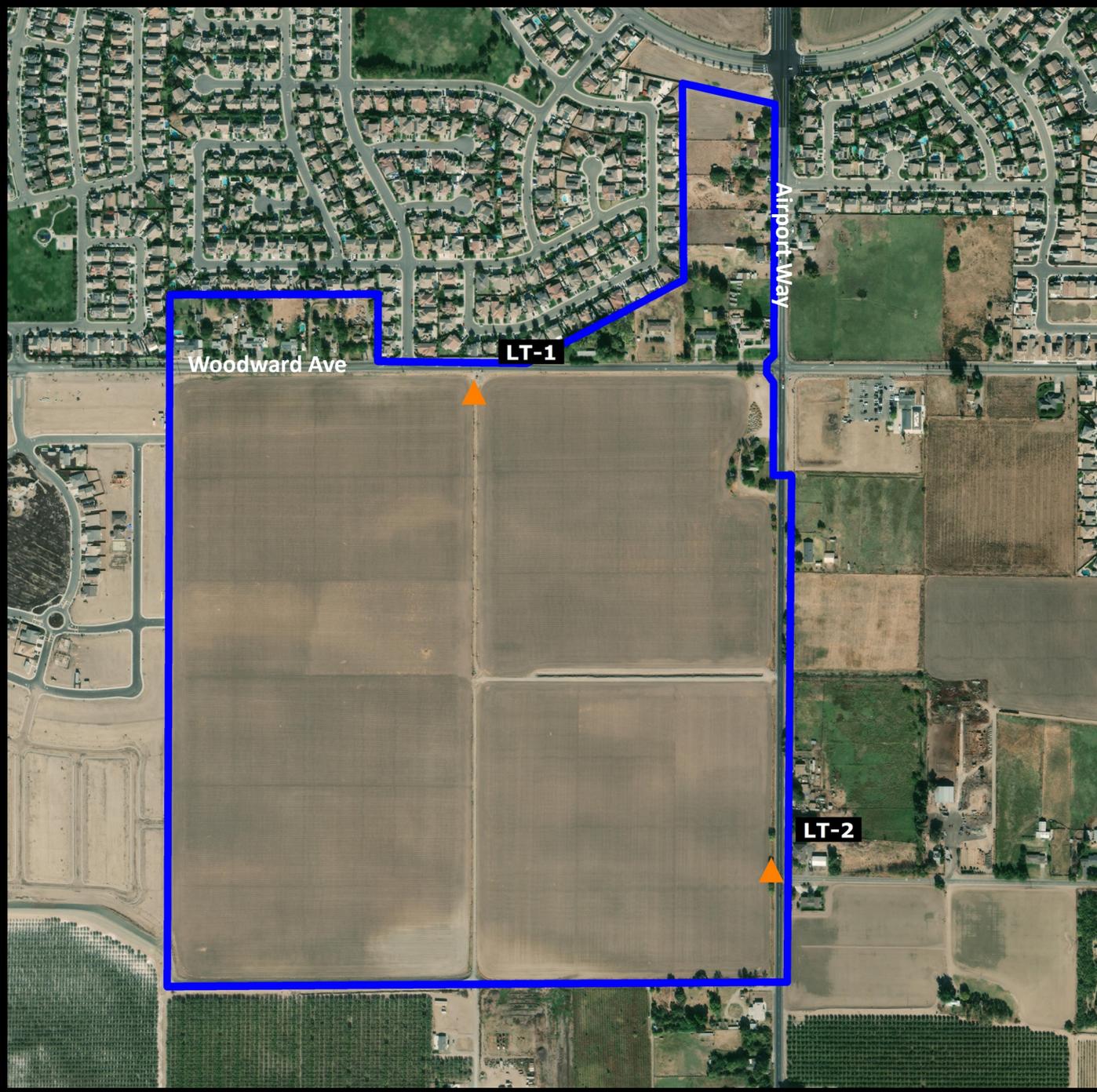
MITIGATION MEASURE(S)

***Mitigation Measure 3.11-4:** Any compaction required less than twenty-six (26) feet from the adjacent residential structures shall be accomplished by using static drum rollers which use weight instead of vibrations to achieve soil compaction. As an alternative to this requirement, pre-construction crack documentation and construction vibration monitoring could be conducted to ensure that construction vibrations do not cause damage to any adjacent structures.*

Impact 3.11-3: 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. (Less Than Significant)

There are no airports in the proposed Project vicinity. Therefore, this impact is not applicable to the proposed project.

This page left intentionally blank.



Lumina at Machado Ranch

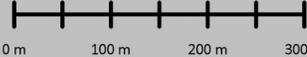
City of Manteca, California

Figure 3.11-1

Noise Measurement Sites

Legend

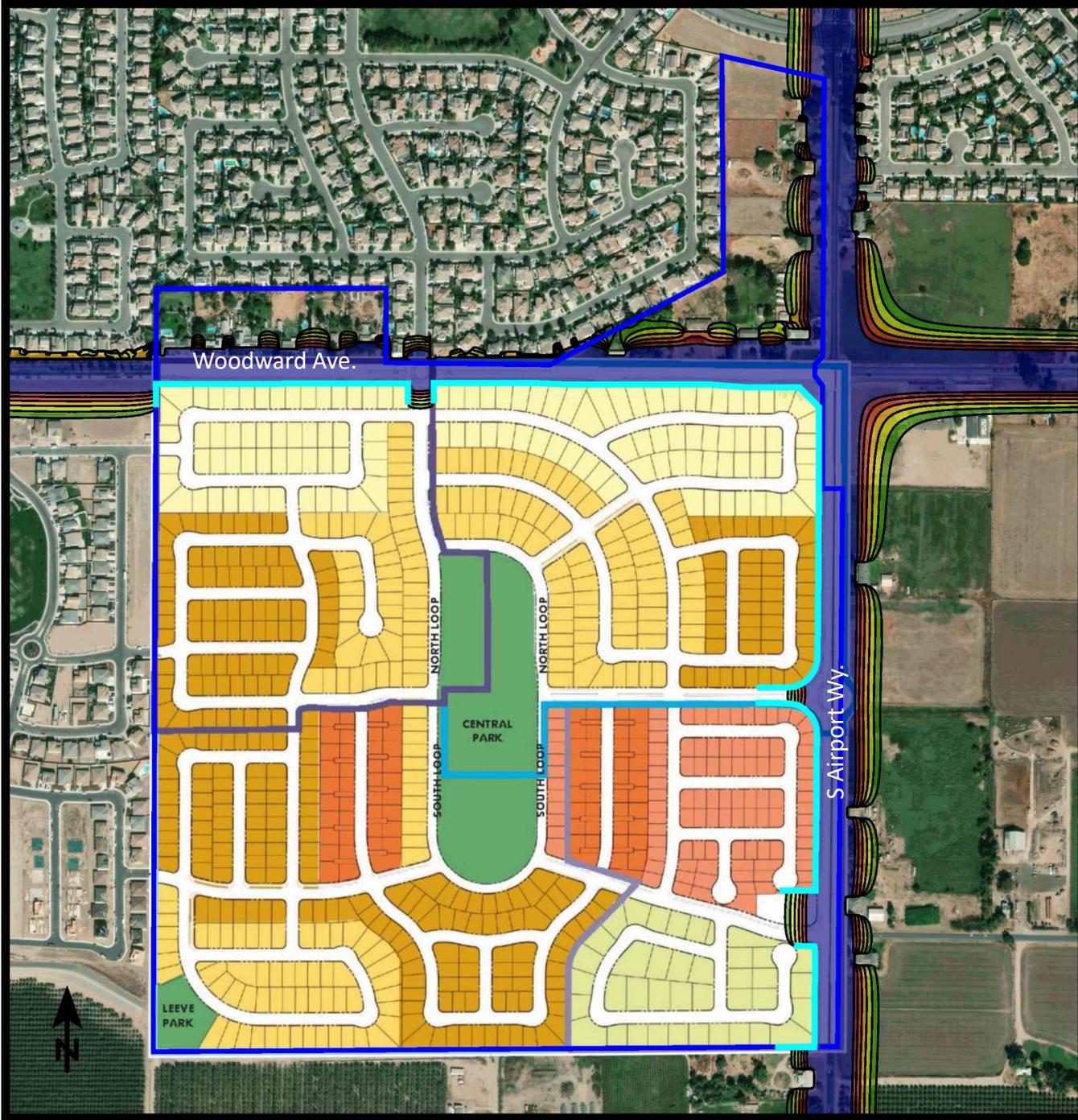
-  Annexation Boundary
-  Noise Measurement Site - Long Term



Projection: State Plane (California Zone 3) / NAD83 / meters
Rev. Date: 03/12/2021



This page left intentionally blank.



Lumina Ranch EIR

City of Manteca, California

Figure 3.11-2

Cumulative + Project Transportation Noise Contours (dBA L_{dn}) – with 8-Foot Sound Walls

Signs and symbols

- Annexation Boundary
- 8-Foot Sound Wall

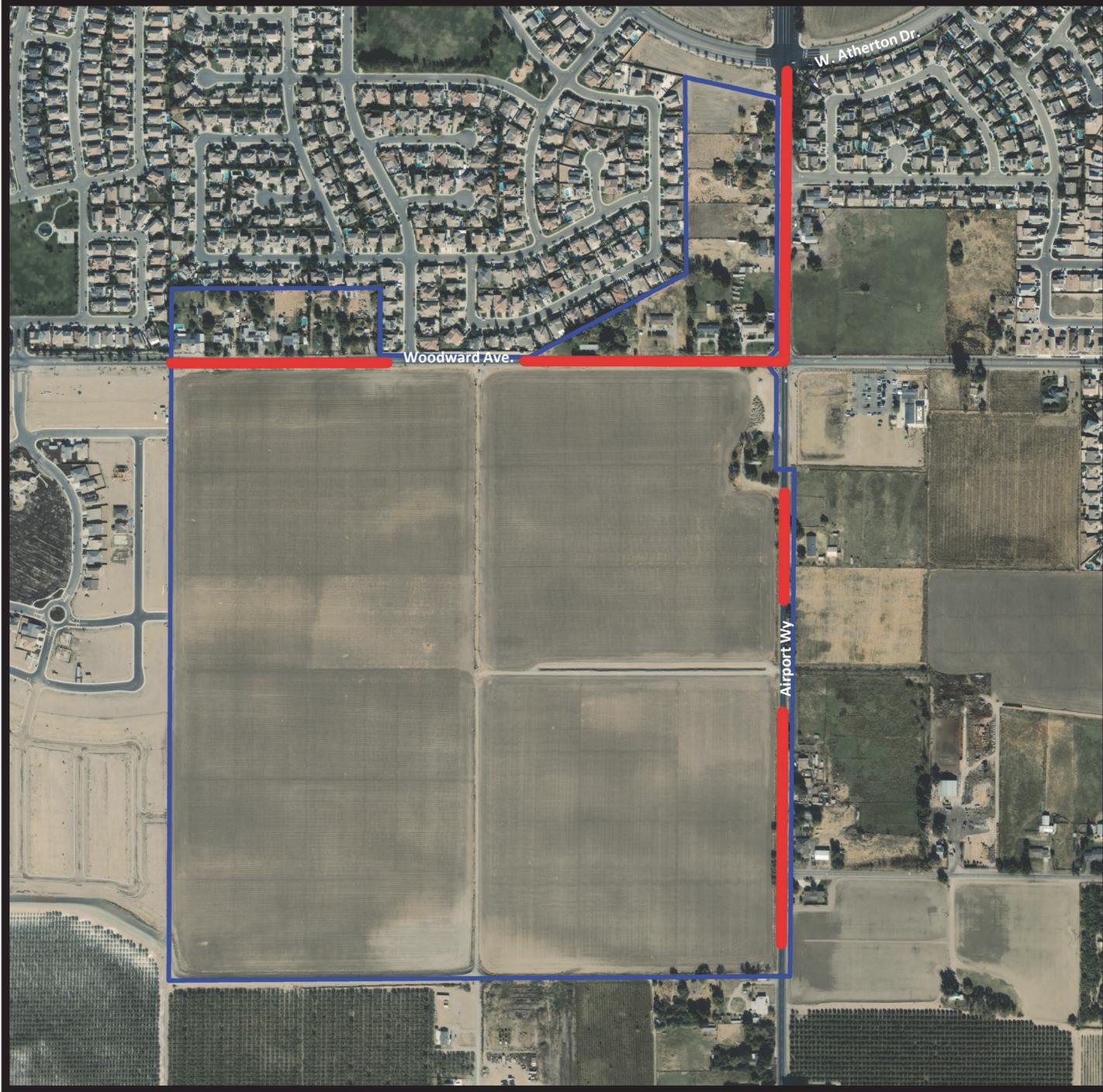
Levels in dB(A)

	<= 65
	65 - 66
	66 - 67
	67 - 68
	68 - 69
	69 - 70
	> 70

1 : 6750



This page left intentionally blank.



Lumina at Machado Ranch

City of Manteca, California

Figure 3.11-3

Required Quiet Pavement Locations

Legend

-  Annexation Boundary
-  Recommended Quiet Pavement



Projection: State Plane (California Zone 3) / NAD83 / meters
Rev. Date: 04/05/2021



This page left intentionally blank.

This section describes and evaluates potential impacts associated with the provision of police protection, fire protection and emergency services, parks and recreation, schools, and other public facilities for the proposed Project. The information in this section is primarily derived from the:

- *City of Manteca General Plan* (City of Manteca as amended through 2016),
- *Manteca General Plan 2023 Draft Environmental Impact Report* (City of Manteca, 2003), and
- *Manteca Draft Municipal Services Review and Sphere of Influence Plan* (City of Manteca, 2020).

There were no comments received during the NOP scoping process related to this environmental topic.

3.12.1 ENVIRONMENTAL SETTING

CITY OF MANTECA SERVICES

The City of Manteca receives funds for the provision of public services through development fees, property taxes, and connection and usage fees. As land is developed within the City and annexed into the City of Manteca, these fees apply. The City of Manteca reviews these fee structures on an annual basis to ensure that they provide adequate financing to cover the provision of city services, determine the correct level of adjustment required to reverse any deficits, and assure funding for needed infrastructure going forward. The City's Development Services, Public Works, and Finance Departments are responsible for continual oversight to ensure that the fee structures are adequate.

City of Manteca Police Department

Police protection services in the City of Manteca are provided by the Manteca Police Department (MPD). The MPD operates out of its headquarters located at 1001 W. Center Street. Currently the MPD has 74 sworn officers.

The department classifies calls for service as Priority 1, Priority 2 or Priority 3. Priority 1 calls are calls where a threat is posed to life or a crime of violence. Priority 2 calls are calls for service where there is an urgency or suspicious behavior. Priority 3 calls are calls for service where no emergency or serious problem is involved. In 2016, there were 217 Priority 1 calls, 18,080 Priority 2 calls, and 8,551 Priority 3 calls, totaling 26,841 calls. Calls for service increased to 46,256 total calls in 2018. The department's average response times for 2016 for the 3 priorities were as follows:

- Priority 1 calls: 2016, 4 minutes and 27 seconds.
- Priority 2 calls: 2016, 27 minutes and 2 seconds.
- Priority 3 calls: 2016, 50 minutes and 22 seconds.

3.12 PUBLIC SERVICES AND RECREATION

ORGANIZATION

The MPD is organized into two divisions: Operations and Services. Additionally, the MPD operates a Public Affairs Unit. For budgeting purposes, the MPD is organized into the following programs: administration, patrol, investigations, support services, dispatch, code enforcement, jail services, and animal services.

Operations Division

The Operations Division is the largest division of the Department. It includes all uniformed officers and their support teams. The units included in the Operations Division are patrol, traffic, community service officers, SWAT, crisis response team, mounted patrol, canine, and bomb squad.

Services Division

The Services Division includes all the teams and units that support the line police function of the MPD. These teams include Dispatch, Records, Property and Evidence, Crime Analysis, and Animal Services, as well as Detectives, School Resource Officers, Gang Unit, and Manteca's Street Crimes Unit (SCU), which is the department's proactive narcotic and street crime suppression unit.

The MPD also has several very active volunteer groups. The Police Explorers, Citizen's Police Academy graduates, Police Reserves, and the SHARPs allow members of the community of all ages and experience to give back to the community through volunteering.

Public Affairs Unit

The MPD's Public Affairs Officer (PAO) works directly with the Chief of Police on issues that affect the MPD and community. In addition to being a community liaison, the PAO works with the public in providing current information regarding issues effecting Manteca. This is done by working with local news media outlets, issuing information bulletins and conducting neighborhood meetings, and by using the local government channel for a program called StreetBeat. In addition to assisting the Chief of Police, the PAO also coordinates several crime prevention programs to include the Citizen Police Academy, Drug Awareness Education, and various workplace-training programs such as Workplace Violence Prevention. The PAO also coordinates with other city offices special projects and does site plan reviews for new commercial and residential projects using a process called CPTED (Crime Prevention through Environmental Design).

TABLE 3.12-1: MANTECA POLICE DEPARTMENT CRIME STATISTICS (2017-2019)

<i>CATEGORY/CRIME</i>	<i>2017</i>	<i>2018</i>	<i>2019</i>
Total Violent Crimes	256	256	199
Homicide	4	0	3
Rape	18	18	27
Robbery	89	97	66
Assault	145	141	103
Total Property Crimes	2,240	2,288	1,848
Burglary	302	386	239
Motor Vehicle Theft	322	380	282
Larceny	1,616	1,522	1,327
Arson	14	15	18

SOURCE: FBI CRIME STATISTICS; [HTTPS://UCR.FBI.GOV/](https://ucr.fbi.gov/).

As shown in the table, the majority of crimes committed in Manteca consist of property crimes, primarily larceny.

City of Manteca Fire Department

The Manteca Fire Department is responsible for the primary provision of fire service and emergency medical response for the City of Manteca and its residents. The Manteca Fire Department serves approximately 72,000 residents throughout over 17 square miles within the City limits. The Manteca Fire Department operates out of five facilities that are strategically located in the City of Manteca. The Manteca Fire Department is headquartered in Station 242 located at 1154 S. Union Road. This building serves as the Fire Department headquarters and the Fire Prevention Bureau. Fire training and emergency medical services are managed out of Station 241. Apparatus includes three engines, three reserve engines, one ladder truck, one medium rescue unit, one USAR rescue trailer, eight staff vehicles, two pick-up trucks, and a public education trailer.

The Manteca Fire Department maintains a goal for the initial company of three firefighters to arrive on scene for fire and emergency medical service (EMS) incidents within five minutes 90% of the time (Response Effectiveness). In 2016, the Department averaged a response time for Code 3 emergencies such as fires, medical calls or auto accidents at 4:20 minutes City-wide. In 2017, the Department averaged a 4:22 response time City-wide. In 2017, the MFD on an average handled 7,579 emergency calls and 6,737 in 2016. The Department is currently meeting the Response Effectiveness goal.

ISO RATING

The Insurance Services Office (ISO) Public Protection Classification Program currently rates the Fire Department as a 2 on a scale of 1 to 10, with 1 being the highest possible protection rating and 10 being the lowest. The ISO rating measures individual fire protection agencies against a Fire Suppression Rating Schedule, which includes such criteria as facilities and support for handling and dispatching fire alarms, first-alarm response and initial attack, and adequacy of local water supply for fire-suppression purposes. The recent construction and staffing of Fire Station No. 4 and Fire Station No. 5 will have a positive impact on the City's ISO rating. The ISO ratings are used to establish fire insurance premiums. With the completion of Fire Station 5, the City plans to apply for ISO re-classification and the Fire Department will apply for Accreditation through the Commission of Fire Accreditation International (CFAI).

FIRE STATIONS

The Manteca Fire Department currently operates five fire stations within its service area, each are listed below.

- Station 241 - 290 S. Powers Ave. Manteca CA 95336 (operational)
- Station 242 - 1154 S. Union Road Manteca CA 95337 (operational)
- Station 243 - 399 W. Louise Ave. Manteca CA 95336 (operational)
- Station 244 - 1465 W. Lathrop Rd. Manteca CA 95336 (operational)
- Station 245, 1675 E. Woodward Ave. Manteca CA 95337 (operational)

City of Manteca Parks and Recreation Department

The City of Manteca Parks and Recreation Department serves thousands of individuals, including toddlers, youth, teens, and adults throughout the greater Manteca area. The department offers programs and services that foster health, wellness, and human development, strengthen families, and provide recreational opportunities for the purpose of positively affecting the quality of life for all involved. The Department oversees more than 600 acres of neighborhood and community parks, maintenance districts, urban forest, the Tidewater Bikeway, skate park, swimming pool, senior center, library services, and an 18-hole golf course.

Types of Parks

COMMUNITY PARKS

Community parks are generally fifteen (15) to twenty-five (25) acres in size and include areas for active sports as well as space for family and group activities, such as picnicking. Community parks are larger in size than neighborhood parks and serve to fulfill the active and passive recreational needs of multiple neighborhoods. The community park serves the needs of local neighborhoods by providing a close to home site for more active recreation that is not typically suitable or physically possible in a neighborhood park (i.e., formal sports fields and courts with night lighting). Community parks and sports parks are where most organized activities provided by the Parks and Recreation Department and various league sports are intended to occur.

The City of Manteca has six developed Community Parks, totaling approximately seventy-eight (78) acres. The closest community park is the Big League Dreams sports complex located approximately 0.5 miles north of the Project site.

NEIGHBORHOOD PARKS

Neighborhood parks serve as the focal point of neighborhood communities, the hub for both physical and social activities in a recreational setting that should be primarily passive. Appropriately designed neighborhood parks act as “pulse points” within the city. They are spaces that develop a sense of place while at the same time evolve to reflect the neighborhood they represent. Neighborhood parks act as critical building blocks of the city’s image and assist in developing an overall sense of community and security. They also serve as critical nodes and access points in the city-wide green space network. Neighborhood parks are generally five (5) to seven (7) acres. Amenities at neighborhood parks may include ball fields, basketball, volleyball, bocce ball, and tennis courts, small picnic areas, playground equipment, restroom facilities, water play features, and barbeques.

The City of Manteca has fifty (50) Neighborhood Parks, totaling approximately 216 acres. There are four neighborhood parks located within a mile of the Project site. The Dutra Estates park and the Bella Vista Park are located adjacent to the Project site to the northwest. Located approximately a mile east of the Project site are the Palmer Park and Dutra Southeast Park.

SPECIAL USE PARKS

The Special Use Parks allow for flexibility in providing recreational resources throughout the city-wide park space network. This classification is intended to accommodate special circumstances, unique site characteristics, etc. in park, trail, and recreation resources. These types of resources add diversity to the park network and accommodate a variety of non-traditional recreation amenities beyond the standard neighborhood, and community, park classifications.

The City of Manteca has ten (10) Special Use Parks/Facilities totaling approximately ninety-one (91) acres, including a major multi-use recreation trail that covers over 3.5 miles of terrain.

City Parks

The City currently manages more than 483 acres of parks, facilities, trails and recreation lands, including 405 acres of community, neighborhood, and special use parks and the 101-acre Manteca Park Golf Course. Table 3.12-2 summarizes the City's park facilities by category.

TABLE 3.12-2: SUMMARY OF PARKS AND RECREATION FACILITIES

<i>PARK TYPE</i>	<i>NUMBER</i>	<i>ACREAGE</i>	<i>GOAL (ACRES PER 1,000 RESIDENTS)</i>	<i>CURRENT RATIO (ACRES PER 1,000 RESIDENTS)</i>
Neighborhood Parks	50 sites	235.96	3	2.79
Community Parks	6 sites	78.46	1	1.03
Special Use Facilities	10 sites	90.94	1	1.19
TOTAL	66 sites	405.36	5	5.01

SOURCE: CITY OF MANTECA PARKS AND RECREATION MASTER PLAN, 2016

When the acreage is broken down into functional categories, the City currently has 235.96 acres of Neighborhood Park land which exceeds the City's goal of 3 acres per 1,000 population. In the category of Community Park acreage, the current quantity of 78.46 acres exceeds the city's goal of one acre per 1,000 population. In the category of Special Use Facility/Parks, the City's 90.94 acres of park lands for special uses exceeds the City's goal of one acre per 1,000 population.

In addition, the City's Parks and Recreation Master Plan identified additional facility needs required by year 2035. A cumulative total of approximately 130 acres of Neighborhood Park land development would be required, as well as a total of approximately 38.5 acres of Community Park land, and 26 acres of Special Use Facility/Park lands. This amount is approximate and could be met by a combination of utilizing existing undeveloped parkland and acquiring new parkland to develop.

Parks and Recreation amenities include several baseball and softball diamonds, sports fields, picnic areas, barbecues, playgrounds and tot lots, over 3 miles of Class 1 bike and pedestrian path, lighted tennis courts, a BMX bicycle track, a skate park, an 18-hole municipal golf course, and a public swimming pool (with tot pool).

Existing rental facilities include:

- Northgate: Full Picnic Shelter; Half Picnic Shelter

3.12 PUBLIC SERVICES AND RECREATION

- Lincoln Picnic Shelter
- Woodward: Full Picnic Shelter; Half Picnic Shelter
- Library Park Gazebo
- Lincoln Pool
- Sports Fields

On a regional scale, the City is located in the Sacramento-San Joaquin Delta (Delta), which contains several recreational areas and facilities, primarily for water-based recreation. Regional County parks near the City include the 9.85-acre Dos Reis Regional Park and the 3.7-acre Mossdale Crossing Regional Park, both located along the San Joaquin River. Mossdale Crossing Park is located on the west side of Interstate 5. Each of these parks includes boat launch ramps, picnic/barbeque areas, and children’s play areas. Dos Reis Regional Park also has camping facilities. Also in the vicinity is the Haven Acres Marina, a private marina located on the San Joaquin River north of Dos Reis Regional Park. This facility provides river access to the San Joaquin River and includes parking areas, a boat ramp, and 10 boat berths.

OTHER AGENCY SERVICES

Manteca Unified School District

The Project site is located within the service boundaries of the Manteca Unified School District (MUSD). MUSD provides school services for grades K through 12 within the communities of Manteca, Lathrop, Stockton, and French Camp. The District is approximately 113 square miles and serves more than 23,000 students. MUSD operates 14 elementary and middle schools (grades K-8), four high schools (grades 9-12), one community day school (grades 7-12), and one vocational academy (grades 11-12). See Table 3.12-3 for the Manteca school inventory.

TABLE 3.12-3: PUBLIC SCHOOLS SERVING MANTECA

<i>SCHOOL</i>	<i>GRADES SERVED</i>	<i>ADDRESS</i>	<i>ENROLLMENT 2019-2020 SCHOOL YEAR</i>
<i>ELEMENTARY AND MIDDLE SCHOOLS</i>			
George McParland Elementary School	K-8	1601 Northgate Dr	1,163
Stella Brockman Elementary School	K-8	763 Silverado Dr	813
Brock Elliott Elementary School	K-8	1110 Stonum Ln	838
French Camp Elementary	K-8	241 4th Street	584
Golden West Elementary School	K-8	1031 North Main St	536
Joshua Cowell Elementary School	K-8	740 Pestana Ave	651
Lincoln Elementary School	K-8	750 E Yosemite Ave	651
Manteca Community Day	K-6	737 W Yosemite Ave	15
Neil Hafley Elementary School	K-8	849 Northgate Dr	752
New Haven Elementary School	K-8	14600 Austin Rd	535
Nile Garden Elementary School	K-8	5700 E Nile Rd	726
Sequoia Elementary School	K-8	710 Martha St	815

<i>SCHOOL</i>	<i>GRADES SERVED</i>	<i>ADDRESS</i>	<i>ENROLLMENT 2019-2020 SCHOOL YEAR</i>
Shasta Elementary School	K-8	751 E Edison St	772
Veritas Elementary School	K-8	1600 Pagola Ave	932
Walter Woodward Elementary School	K-8	575 Tannehill Dr	910
<i>HIGH SCHOOLS</i>			
Calla High School	9-12	130 S Austin Rd	162
East Union High School	9-12	1700 N Union Rd	1,614
Manteca Community Day School	7-12	737 W Yosemite Ave	50
Manteca High School	9-12	450 E Yosemite Ave	1,686
Sierra High School	9-12	1700 Thomas St	1,471
Manteca Unified Vocational Academy (be.tech)	11-12	2271 W. Louise Ave	127

SOURCE: CALIFORNIA DEPARTMENT OF EDUCATION EDUCATIONAL DEMOGRAPHICS UNIT ENROLLMENT FOR 2019-20.

As shown in Table 3.12-4, the schools serving the City had a total enrollment of approximately 15,803 students, of which 10,693 were enrolled in elementary and middle school (grades K – 8) and 5,110 were enrolled in high school (grades 9 – 12).

District-wide MUSD Schools have a total enrollment of 23,834 students for the 2019-2020 school year. Table 3.12-4 provides a summary of the public-school enrollment by grade within Manteca.

TABLE 3.12-4: ENROLLMENT BY GRADE MUSD (2019-2020)

<i>MANTECA UNIFIED</i>	<i>GRADE LEVEL</i>													<i>TOTAL 2019-2020</i>
	<i>K</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	
Total	1,931	1,645	1,692	1,740	1,740	1,716	1,811	1,883	2,002	2,002	1,859	1,907	1,931	23,834

SOURCE: CALIFORNIA DEPARTMENT OF EDUCATION EDUCATIONAL DEMOGRAPHICS UNIT ENROLLMENT FOR 2019-2020.

Library Services

The Manteca Branch Library, a branch library of the Stockton - San Joaquin County Library system, is located at 320 West Center Street. The library offers a circulating collection of books, magazines, CDs, and DVDs in both English and Spanish, and carries a number of local regional and national newspapers.

Computer workstations are available for general and Internet use. Free Wi-Fi is also available for patrons with laptops and mobile devices. The library offers black & white and color printing, as well as a copy machine and typewriter. A microfilm reader/printer is available, which includes an extensive collection of archives from the Manteca Bulletin. A non-circulating collection of reference materials is also available for help with research.

The Manteca Branch Library offers two weekly story time programs beginning at 10:30 AM. On Tuesdays, a program geared for children aged 6 months to 2 years and on Thursdays the library has preschool storytime, primarily for children aged 2 to 4 years.

Manteca Senior Center

The Manteca Senior Center located at 295 Cherry Lane is a 10,000-plus square-foot, multi-purpose Senior Center serving and involving adults and seniors age 50 and above throughout the greater Manteca area. There are no membership fees to participate at the center; however, some classes and activities have nominal fees.

Manteca Hospital and Medical Facilities

Health care facilities within Manteca encompass Doctor's Hospital of Manteca, Kaiser Permanente Manteca Medical Center, residential care facilities, as well as private physicians and other medical practitioners.

Doctor's Hospital of Manteca, provides acute care service for Manteca and the surrounding community. The hospital is located at 1205 east North Street in the City of Manteca. Doctor's Hospital of Manteca offers comprehensive diagnostic and surgical services, intensive care unit, breast healthcare, including mammography, behavioral health care, a 67-bed adult inpatient psychiatric treatment center, expanded imaging services, hip and knee surgery, back pain treatment and surgery, bariatric (weight-loss) surgery. Kaiser Permanente Manteca Medical Center also provides acute care service for Manteca and the surrounding community. The hospital is located at 1777 West Yosemite Avenue. Residents typically travel to other facilities, for certain specialized services including severe trauma and psychiatric care.

The San Joaquin County Public Health Services provides maternal and child health care programming, California Children's Services, child health and disability programs, vaccinations and general public health nursing to the community. Alcohol & drug programs are also organized under the County Health Services and provide residential treatment, out-patient counseling, perinatal programs and community education and information.

3.12.2 REGULATORY SETTING

STATE

Police Protection

There are no federal or state regulations related to police protection services applicable to the proposed Project.

Fire Protection and Emergency Response

CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

In accordance with California Code of Regulations Title 8 Sections 1270 "Fire Prevention" and 6773 "Fire Protection and Fire Equipment" the California Occupational Safety and Health Administration (Cal/OSHA) has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials, fire hose sizing requirements, restrictions on the use of compressed air,

access roads, and the testing, maintenance, and use of all firefighting and emergency medical equipment.

EMERGENCY RESPONSE/EVACUATION PLANS

The State passed legislation authorizing the Office of Emergency Services (OES) to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with SEMS could result in the State withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster.

FIRE PROTECTION

The California Fire Code contains regulations relating to construction and maintenance of buildings and the use of premises. Topics addressed in the Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions to protect and assist first responders, industrial processes, and many other general and specialized fire safety requirements for new existing buildings and premises.

CALIFORNIA FIRE CODE

The 2019 California Fire Code contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the California Fire Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The Fire Code contains specialized technical regulations related to fire and life safety.

CALIFORNIA HEALTH AND SAFETY CODE

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code. This includes regulations for building standards (as also set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

NFPA 1710

The National Fire Protection Association (NFPA) 1710 Standards are applicable to urban areas and where staffing is comprised of career firefighters. According to these guidelines, a career fire department needs to respond within six minutes, 90 percent of the time with a response time measured from the 911 call to the time of arrival of the first responder.

The standards are divided as follows:

- Dispatch time of one minute or less for at least 90 percent of the alarms;
- Turnout time of one minute or less for EMS calls (80 seconds for fire and special operations response);

3.12 PUBLIC SERVICES AND RECREATION

- Fire response travel time of four minutes or less for the arrival of the first arriving engine company at a fire incident and eight minutes or less travel time for the deployment of an initial full alarm assignment at a fire incident;
- Eight minutes or less travel time for the arrival of an advanced life support (ALS) (4 minutes or less if provided by the fire department).

Parks/Recreation

QUIMBY ACT

The Quimby Act (California Government Code Section 66477) states that “the legislative body of a city or county may, by ordinance, require the dedication of land or impose a requirement of the payment of fees in lieu thereof, or a combination of both, for park or recreational purposes as a condition to the approval of a tentative or parcel map.” Requirements of the Quimby Act apply only to the acquisition of new parkland and do not apply to the physical development of new park facilities or associated operations and maintenance costs. The Quimby Act seeks to preserve open space needed to develop parkland and recreational facilities; however, the actual development of parks and other recreational facilities is subject to discretionary approval and is evaluated on a case-by-case basis with new residential development. The City collects fees imposed by the park and recreation districts impact fees. The impact fees are collected at the time of building permit and include both capital impacts and land acquisition.

Schools

CALIFORNIA CODE OF REGULATIONS

The California Code of Regulations, Chapter 4.9, Payment of Fees, Charges, Dedications, or Other Requirements Against a Development Project. *Section 65995-65998 (h)* The payment or satisfaction of a fee, charge, or other requirement levied or imposed pursuant to Section 17620 of the Education Code in the amount specified in Section 65995 and, if applicable, any amounts specified in Section 65995.5 or 65995.7 are hereby deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization as defined in Section 56021 or 56073, on the provision of adequate school facilities.

CALIFORNIA DEPARTMENT OF EDUCATION

The California Department of Education (CDE) School Facilities Planning Division (SFPD) prepared a School Site Selection and Approval Guide that provides criteria for locating appropriate school sites in the State of California. School site and size recommendations were changed by the CDE in 2000 to reflect various changes in educational conditions, such as lowering of class sizes and use of advanced technology. The expanded use of school buildings and grounds for community and agency joint use and concern for the safety of the students and staff members also influenced the modification of the CDE recommendations.

Specific recommendations for school size are provided in the School Site Analysis and Development Guide. This document suggests a ratio of 1:2 between buildings and land. CDE is aware that in a number of cases, primarily in urban settings, smaller sites cannot accommodate this ratio. In such

cases, the SFPD may approve an amount of acreage less than the recommended gross site size and building-to-ground ratio.

Certain health and safety requirements for school site selection are governed by state regulations and the policies of the SFPD relating to:

- Proximity to airports, high-voltage power transmission lines, railroads, and major roadways;
- Presence of toxic and hazardous substances;
- Hazardous facilities and hazardous air emissions within one-quarter mile;
- Proximity to high-pressure natural gas lines, propane storage facilities, gasoline lines, pressurized sewer lines, or high-pressure water pipelines;
- Noise;
- Results of geological studies or soil analyses; and
- Traffic and school bus safety issues.

*THE KINDERGARTEN-COMMUNITY COLLEGE PUBLIC EDUCATION FACILITIES BOND ACT OF 2016
(PROP 51)*

The Kindergarten-Community College Public Education Facilities Bond Act of 2016 was the first education-related bond measure to appear on the ballot since 2006. This act was approved by California voters in November 2016 and provided for a bond issued of \$9 billion with \$7.0 billion earmarked for K-12 school facilities and \$2 billion earmarked for community college facilities. The \$7.0 billion for K-12 school facilities was allocated as follows: \$3 billion for the construction of new school facilities, \$500 million for providing school facilities for charter schools, \$3 billion for the modernization of school facilities, and \$500 million for providing facilities for career technical education programs. The \$2 billion allocated to community college facilities was for acquiring, constructing, renovating, and equipping community college facilities.

LEROY F. GREENE SCHOOL FACILITIES ACT OF 1998 (SB 50)

The “Leroy F. Greene School Facilities Act of 1998,” also known as Senate Bill 50 or SB 50 (Chapter 407, Statutes of 1998), governs a school district’s authority to levy school impact fees. This comprehensive legislation, together with the \$9.2 billion education bond act approved by the voters in November 1998 known as “Proposition 1A”, reformed methods of school construction financing in California. SB 50 instituted a new school facility program by which school districts can apply for state construction and modernization funds. It imposed limitations on the power of cities and counties to require mitigation of school facilities impacts as a condition of approving new development and provided the authority for school districts to levy fees at three different levels:

- Level I fees are the current statutory fees allowed under Education Code 17620. This code section provides the basic authority for school districts to levy a fee against residential and commercial construction for the purpose of funding school construction or reconstruction of facilities. These fees vary by district for residential construction and commercial construction and are increased biannually.

3.12 PUBLIC SERVICES AND RECREATION

- Level II fees are outlined in Government Code Section 65995.5, allowing school districts to impose a higher fee on residential construction if certain conditions are met. These conditions include having a substantial percentage of students on multi-track year-round scheduling, having an assumed debt equal to 15–30 percent of the district’s bonding capacity (percentage is based on revenue sources for repayment), having at least 20 percent of the district’s teaching stations housed in relocatable classrooms, and having placed a local bond on the ballot in the past four years which received at least 50 percent plus one of the votes cast. A Facility Needs Assessment must demonstrate the need for new school facilities for unhoused pupils is attributable to projected enrollment growth from the construction of new residential units over the next five years.

Level III fees are outlined in Government Code Section 65995.7. If State funding becomes unavailable, this code section authorizes a school district that has been approved to collect Level II fees to collect a higher fee on residential construction. This fee is equal to twice the amount of Level II fees. However, if a district eventually receives State funding, this excess fee may be reimbursed to the developers or subtracted from the amount of state funding.

LOCAL

City of Manteca Municipal Code

The City of Manteca Municipal Code, Fee Schedule VI *Development Fee* includes development impact fees to fund public facilities, including the San Joaquin County Facilities Fee to fund police services.

Manteca Parks and Recreation Master Plan

The City of Manteca adopted a Parks and Recreation Master Plan in 2016. The Master Plan evaluates the parks and recreation needs of the community and develops strategies, policies, and actions that reflect those needs to create better places to recreate within Manteca. This document provides the City’s Parks and Recreation Department with precise direction and serves as a realistic guide for the next ten to twenty years.

City of Manteca General Plan

The General Plan includes several policies relevant to public services. 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 2023 General Plan policies and proposed General Plan Update policies applicable to the Project are identified below:

2023 GENERAL PLAN (EXISTING)

Policies: Public Facilities and Services Element

- PF-P-39. The City shall endeavor through adequate staffing and patrol arrangements to maintain the minimum feasible police response times for police calls.
- PF-P-40. The City shall provide police services to serve the existing and projected population.

- PF-P-41. The City will establish the criteria for determining the circumstances under which police service will be enhanced.
- PF-P-42. The City shall endeavor to maintain an overall fire insurance (ISO) rating of 4 or better.
- PF-P-43. The City shall endeavor through adequate staffing and station locations to maintain the minimum feasible response time for fire and emergency calls.
- PF-P-44. The City shall provide fire services to serve the existing and projected population.
- PF-P-45. The City will establish the criteria for determining the circumstances under which fire service will be enhanced.
- PF-P-46. The City shall expand the community and neighborhood park system with the goal of providing neighborhood park facilities within reasonable walking distance of all city residential areas.
- PF-P-47. The City shall use joint development of park and drainage detention basins in the development of neighborhood parks.
- PF-P-49. City park acquisition and development efforts shall be based on a goal of 5 acres of developed neighborhood and community parkland per 1,000 residents within the city limits. The distribution of land between neighborhood and community parks shall be determined within the Parks and Recreation Master Plan.
- PF-P-50. Neighborhood parks shall conform to the following general guidelines (specific details and standards to be determined within the Parks and Recreation Master Plan):
 - The typical minimum size shall be set to support active and passive recreation activities.
 - The typical service area for a neighborhood park is approximately ¼ mile walking distance.
 - Neighborhood parks shall include a turf area above the basin flood line of sufficient area to be used for playgrounds, sports, picnic areas, and other recreational facilities.
- PF-P-52. The City shall endeavor to identify, acquire, and develop one or more community parks as defined in the Parks and Recreation Master Plan.
- PF-P-53. All new residential development will be required to pay a park acquisition and improvement fee, based on providing 5 acres per 1,000 residents, to fund system-wide improvements.
- PF-P-54. The City shall require the provision of private open space and recreational facilities as part of new residential developments.
- PF-P-34. The City shall cooperate with the Manteca Unified School District in their collection of school facility development fees from new development.
- PF-P-35. Financing of new school facilities will be planned concurrent with new development.

3.12 PUBLIC SERVICES AND RECREATION

GENERAL PLAN UPDATE

Policies: Community Facilities Element

- CF-1.1. Encourage the implementation of new techniques and technologies to provide the best available level of community services in a cost-effective manner.
- CF-1.2. Ensure that new growth and development participates in the provision and expansion of essential community services and facilities, including parks, fire and police facilities, schools, utilities, roads, and other needed infrastructure, does not exceed the City's ability to provide services, and does not place an economic burden on existing residents.
- CF-1.3. Require new development to demonstrate that the City's existing or planned community services and facilities can accommodate the increased demand for said services and facilities prior to or at completion of the project.
- CF-1.4. Require new development to offset or mitigate impacts to community services and facilities, including fair share contribution of all costs of required public infrastructure and services, to ensure that service levels for existing users are not degraded or impaired.
- CF-1.5. Require public improvements and facilities to enhance, rather than degrade, the natural environment.
- CF-1.6. Encourage comprehensive development of public facilities and services rather than incremental, single projects.
- CF-1.7. Plan and develop public services and facilities to support economic development and residential growth.
- CF-1.8. Make use of the public right-of-way as a tool for facilitating quality design and development.
- CF-2.1. Prioritize public safety through ensuring adequate staffing, implementing best available technologies, capital investments in public safety, and organizing and utilizing community volunteers.
- CF-2.2. Ensure that the Police Department has adequate funding, staff, and equipment to accommodate existing and future growth in Manteca.
- CF-2.3. Strive to provide a police force level of a minimum of 1.00 officers per 1,000 population.
- CF-2.4. Endeavor through adequate staffing and patrol arrangements to maintain the minimum feasible police response times for police calls.
- CF-2.5. Periodically review and, if necessary, amend the criteria for determining the circumstances under which police service will be enhanced.
- CF-2.6. Promote and support community-based crime prevention programs, as an important augmentation to the provision of professional police services.
- CF-2.7. Emphasize the use of physical site planning as an effective means of preventing crime. Open spaces, landscaping, parking lots, parks, play areas, and other public spaces should be designed with maximum feasible visual and aural exposure to community residents.

- CF-2.8. Promote coordination between land use planning and urban design through consultation and coordination with the Police Department during the review of new development applications.
- CF-3.1. Through adequate staffing and station locations, maintain a maximum five-minute travel response time 90% of the time for fire and emergency calls and an overall fire insurance (ISO) rating of 3 or better for all developed areas within the City.
- CF-3.2. Provide fire services to serve the existing and projected population.
- CF-3.3. Periodically review, and if necessary amend, the criteria for determining the circumstances under which fire service will be enhanced.
- CF-3.4. Design and maintain roadways in such a way so as to maintain acceptable emergency vehicle response times.
- CF-3.5. Ensure that new development is designed, constructed, and equipped consistent with the requirements of the California Fire Code in order to minimize the risk of fire.
- CF-3.6. Ensure that new development is served with adequate water volumes and water pressure for fire protection.
- CF-4.1. Ensure the provision of sufficient parks, trails, and recreation facilities that are well distributed and interconnected throughout the community.
- CF-4.2. Expand, renovate, and maintain high quality parks, trails, and recreation facilities, programs, and services to accommodate existing and future needs that address traditional and non-traditional recreation, active and passive recreation, wellness, historical, cultural arts, environmental education, conservation, accessibility, inclusion, diversity, safety, and new technology.
- CF-4.3. Uphold design, construction, implementation, and maintenance standards to ensure high quality parks, trails, and recreation facilities, programs, and services, now and into the future.
- CF-5.1. Continue to work cooperatively with the local school districts to encourage the maintenance of high quality schools and to order to ensure that superior educational facilities and opportunities for all students are provided in a timely manner in accordance with the pace of residential development.

Implementation: Community Facilities Element

- CF-1a. Periodically review the fee schedules for water and sewer connections, city facilities and major equipment, and development impact fees and revise fees as necessary.
- CF-1b. Cooperate with other jurisdictions, agencies, and utility providers where appropriate to achieve timely and cost-effective provision of public facilities and services.
- CF-3a. Continuously monitor response times and provide the City Council with an annual report on the results of the monitoring.
- CF-3b. Continue to enforce the California Building Code and the California Fire Code to ensure that all construction implements fire-safe techniques, including fire resistant materials, where required.

3.12 PUBLIC SERVICES AND RECREATION

- CF-3c. As part of the City's existing development review process for new projects, the Fire Department will continue to make determinations on projects' potential impacts on fire protection services. Requirements will be added as conditions of project approval, if appropriate.
- CF-3d. The Planning Commission and City Engineer will review proposed residential street patterns to evaluate the accessibility for fire engines and emergency response.
- CF-2a. Continue to require preparation of an annual Police Department Performance Report, as amended periodically.
- CF-2b. In conjunction with the annual Police Department Performance Report, further develop and refine best practices to assess, monitor, and maintain the Police Department's organizational performance goals and monitor police staffing levels. The assessment categories related to adequate police staffing could include but are not limited to:
 - Crime rates;
 - Response times;
 - Clearance rates;
 - Police department workload;
 - Financial resources; and
 - Performance standards.
- CF-2c. As part of the development review process, consult with the Police Department in order to ensure that the project design facilitates adequate police services and that the project addresses its impacts on police services.
- CF-2d. Continue to implement community-based police outreach services and programs, including but not limited to, neighborhood watch, volunteers in police service (VIPS), and crime and safety needs of seniors (TRIAD).
- CF-4a. Continuously monitor the condition of parks, trails, and recreation facilities throughout the community and prioritize the rehabilitation of existing facilities that serve the greatest number of residents.
- CF-4b. Periodically review the City's Parks and Recreation Master Plan to ensure that parks and recreation needs are adequately identified and prioritized, to update cost estimates for park acquisition and development and remaining development potential based on the General Plan and to ensure that the City maintains a minimum overall ratio of 5 acres of parkland for every 1,000 residents.
- CF-4c. As part of the next Parks and Recreation Master Plan Update, consider the community needs identified during the General Plan process, including a community park and a combined or separate facility to accommodate community-wide events, a nature-based park, bicycle and pedestrian improvements necessary to improve access to park and recreation facilities, methods to increase physical activity opportunities in the community, and increased joint use of facilities with the school districts.
- CF-4d. Investigate and pursue a diverse range of funding opportunities for parks, trails, and recreation facilities, including but not limited to, grants, joint use/management strategies, user fees, private sector funding, assessment districts, homeowners' associations, non-

profit organizations, funding mechanisms for the maintenance of older parks, and management assistance through Federal, State, and regional partnerships.

- CF-4e. Periodically review, and if necessary update, the Parks and Recreation development impact fees in order to ensure that the City's parks and recreation needs are adequately identified and prioritized and that new development continues to provide a fair-share contribution towards parks, trails, and recreation facilities.
- CF-4f. Implement a wide range of public outreach programs, including the City's website, newsletters, and other emerging communications technologies to keep the public informed about available parks, trails, and recreation facilities, programs, and services.
- CF-4g. Continue to pursue joint-use of schools and detention facilities to supplement the parks, trails, and recreation needs of the community.
- CF-4h. Through conditions of approval and/or development agreements, ensure that new development provides for its fair-share of park and recreation facilities, including connections to adjacent facilities, and that the development of new parks, trails, and recreation facilities occurs during the infrastructure construction phase of new development projects so that they are open and available to the public prior to completion of the project.

3.12.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact on public services if it would 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:
 - Fire Protection;
 - Police Protection;
 - Schools;
 - Parks; and
 - Other public facilities.
- An increase in 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; or
- If it includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

IMPACTS AND MITIGATION MEASURES

Impact 3.12-1: The proposed Project has the potential to require the construction of police department facilities which may cause substantial adverse physical environmental impacts. (Less than Significant)

The proposed Project would introduce new residential uses and residents to the City in addition to existing residential uses that will be annexed as part of the proposed Project. This will create an increased demand for police protection services compared to existing conditions. The City's Existing General Plan designated the Development Area as LDR and Park and therefore anticipated development and potential annexation into the City. Specifically, the proposed Project includes 827 residential units. According to the most recent U.S. Census (2019) and Department of Finance (2020) estimates, the average number of persons residing in a dwelling unit in the City of Manteca is 3.18; therefore, the Project is estimated to increase the population by 2,630 residents (based on 3.18 persons per household). With the addition of 2,630 residents and a projected population of 78,877, that equates to a staffing level of approximately 79 officers per 1000 residents. The City has anticipated additional officers would be hired as the City population grows. The City continuously monitors response times and reports annually on the results to ensure adequate police protection service levels are provided.

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, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the proposed Project, would fund capital and labor costs associated with police services.

Based on the current adequacy of existing response times and the ability of the MPD to serve the City, it is anticipated that the existing police department facilities are sufficient to serve the proposed Project and the construction of new or expanded police department facilities would not be required. Consequently, any impacts would be **less than significant**.

Impact 3.12-2: The proposed Project has the potential to require the construction of fire department facilities which may cause substantial adverse physical environmental impacts. (Less than Significant)

The Manteca Fire Department maintains a goal for the initial company of three firefighters to arrive on scene for fire and emergency medical service (EMS) incidents within five minutes 90% of the time (Response Effectiveness). In 2016, the Department averaged a response time for Code 3 emergencies such as fires, medical calls or auto accidents at 4:20 minutes City-wide. In 2017, the Department averaged a 4:22 response time City-wide. In 2017, the MFD on an average handled 7,579 emergency calls and 6,737 in 2016. The Department is currently meeting the Response Effectiveness goal.

The proposed Project would introduce new residential uses to the city in addition to existing residential uses that will be annexed as part of the proposed Project. This will create an increased demand for fire services compared to existing conditions. The City's Existing General Plan designated the Development Area as LDR and Park and therefore anticipated development and potential annexation into the City.

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, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the proposed Project, would fund capital and labor costs associated with fire protection services. Therefore, the impact of the proposed Project on the need for additional fire services facilities is **less than significant** and would not require the construction of additional fire department facilities.

Impact 3.12-3: The proposed Project has the potential to require the construction of school facilities which may cause substantial adverse physical environmental impacts. (Less than Significant)

The proposed Project is located within the service boundaries of the MUSD. Specifically, the Project site is within the attendance boundaries of the Brock Elementary School located approximately a mile northeast of the Project site, the Nile Garden Elementary School located approximately 1.64 miles southeast of the Project site, and the Sierra High School located approximately 1.02 mile northeast of the Project site.

The proposed Project would include the development of 827 dwelling units, which would directly cause population growth, including school-aged children that would attend the schools that serve the Project site and surrounding area. Utilizing the student generation rates provided by the MUSD in the School Mitigation Fee Justification Calculation of Cost per Student for School Facilities (dated March 2017), the proposed Project would be expected to generate roughly 523 new students¹, broken down by grades as follows:

- K-8: 352 students
- 9-12: 171 students

¹ Calculations based on the Manteca Unified School District, School Mitigation Fee Justification Study Final Draft Report, July 2020, which identifies grade K-6 student generation rate of 0.33 students per Single family unit, grade 7-8 student generation rate of 0.096 students per Single family unit and grade 9-12 student generation rate of 0.207 students per Single family unit.

3.12 PUBLIC SERVICES AND RECREATION

MUSD has previously indicated that there is a need for a new elementary and a new high school in the city and MUSD has purchased a 17-acre school site² Until new school facilities are developed, students within the Project site would most likely attend Nile Garden School and Veritas Elementary School, and Sierra High School, subject to MUSD's determination.

The MUSD collects impact fees from new developments under the provisions of SB 50. Payment of the applicable impact fees by the Project applicant, and ongoing revenues that would come from taxes, would fund capital and labor costs associated with school services. The adequacy of 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, sales taxes, and other revenues generated by the proposed Project, would fund improvements associated with school services. According to Government Code Section 65996, the development fees authorized by SB 50 (1998) are deemed to be "full and complete school facilities mitigation" for any demands or impacts on school facilities caused by new development. It is noted that the Applicant has agreed to enter into a Mitigation Agreement with MUSD which allows them to annex into the District's Community Facilities District (CFD). This provides the MUSD with a longer term stream of revenue paid through annual property taxes, and reduced impact fee in the near term. Therefore, the impact of the proposed Project on the need for additional school facilities is **less than significant**.

Impact 3.12-4: The proposed Project has the potential to have effects on other public facilities. (Less than Significant)

The proposed Project will bring residents to the area which may require the use of other public services such as libraries, etc. The City collects impact fees from new development based upon projected impacts from each development, including impacts on other public services as required by Chapter VI Development Fees of the City's Municipal Code. The City also reviews the adequacy of impact fees on an annual basis to ensure that the fee is commensurate with services provided. Payment of the applicable impact fees by the Project applicant, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the proposed Project, would fund capital and labor costs associated with these other public services.

The proposed Project does not trigger the need for new facilities associated with other public services. Consequently, new facilities for other public services are not proposed at this time. The proposed Project would not result in the need for new facilities for other public services, thus it will have a **less than significant** impact relative to this topic.

² Manteca Unified School District, Facilities Need Analysis, July 21, 2020.

Impact 3.12-5: The proposed Project has the potential to require the construction of park and recreational facilities which may cause substantial adverse physical environmental impacts. (Less than Significant)

The proposed Project directly increases the number of persons in the area as a result of new residential development. The proposed Project includes 827 residential units. According to the most recent U.S. Census (2019) and Department of Finance (2020) estimates, the average number of persons residing in a dwelling unit in the City of Manteca is 3.18; therefore, the Project is estimated to increase the population by 2,630 residents (based on 3.18 persons per household).

The City's General Plan identifies a park standard based on a goal of five acres of developed parkland per 1,000 residents within the city limits. However, Manteca Municipal Code Chapter 3.20.080, Neighborhood parks, requires in all new subdivisions, the developer to build and dedicate a neighborhood park that meets the required three acres per 1,000 people per the adopted park acquisition and improvement fee. Based on 2,630 residents, the Project would require approximately 7.89 acres of parkland. The Project proposes approximately 12.15 acres of park land, which would provide the park land needed to meet the three acres per 1,000 people. Municipal Code Chapter 3.20, Park Acquisition and Improvement Fees, allows the parks and recreation director to determine whether or not a development would be required to build and dedicate a neighborhood park or pay the neighborhood park in-lieu fee. In accordance with the Municipal Code, fees are deposited in specific funds that shall be used solely for the acquisition, improvement and expansion of public parks and recreation facilities as outlined in the park acquisition and improvement fee update. Thus, upon provision and dedication of the proposed parkland and/or payment of required fees in accordance with the Manteca Municipal Code Chapter 3.20, the proposed Project will result in a **less than significant** impact.

Impact 3.12-6: The proposed Project has the potential to 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. (Less than Significant)

As stated previously, the proposed Project will directly increase the number of persons in the area. It is not anticipated that the proposed Project would result in a significant increase in the use of existing neighborhood and regional parks or other recreational facilities because the Project includes extensive new recreational facilities for the community and residents within the Project site.

The proposed Project would not significantly increase the use of an existing park, or other recreational facility. Therefore, it is not anticipated that any substantial physical deterioration of existing facilities would occur or be accelerated. As such, the proposed Project would have a **less than significant** impact relative to this topic.

This page left intentionally blank.

This section of the EIR analyzes the potential impacts of the proposed Project on the surrounding transportation system including roadways, bicycle/pedestrian facilities, rail, and transit facilities/services. This section identifies the significant impacts of the proposed Project and recommends mitigation measures to lessen their significance. An evaluation of vehicular access to the proposed Project is also provided. All technical calculations are in the Appendix F of Appendix F.

3.13.1 INTRODUCTION

PROJECT LOCATION

The Project site is located in the southwestern portion of the City of Manteca, immediately south of the city limit lines. The Project site is immediately southwest of the intersection of Airport Way and Woodward Avenue. The Project site is bounded on the north by Woodward Avenue and an existing single-family residential subdivision, on the east by Airport Way, on the south by an existing Reclamation District #2094 (RD2094) dry levee and existing agricultural fields, and on the west by an existing single-family residential subdivision, currently under construction. Figures 2.0-1 and 2.0-2 show the proposed Project's regional location and vicinity. Figure 2.0-3 illustrates the proposed Project location on the USGS Lathrop, California, 7.5-minute series quadrangle map.

PROJECT SITE DEFINED

The Project site encompasses 183.46 acres located on the west side of the Airport Way/Woodward Avenue intersection. The Project site includes several distinct planning boundaries which are cumulatively described as the "Annexation Area". The specific planning boundaries that make up the Annexation Area are described below:

- Project Site (or Annexation Area) – includes the whole of the project, including the proposed 161.19-acre Development Area, 19.11-acre Non-development Area on 15 inhabited residential lots, and 3.16 acres of existing right-of-way.
- Development Area – includes a 161.19-acre parcel intended for the development of up to 827 single family residential units, two parks, and public infrastructure;
- Non-development Area 1 – includes six 1.0-acre parcels with existing residential homes. Access to these homes is provided by Woodward Avenue;
- Non-development Area 2 – includes nine parcels ranging in size from 1.3 to 1.8 acres totaling 13.11 acres with existing residential homes. Access to three homes is provided by Woodward Avenue, access to five homes is provided by Airport Way, and access to one home is provided by both Woodward Avenue and Airport Way.
- Right-of-Way Annexation Area – includes 3.16 acres of remaining right-of-way outside areas of dedication owned by San Joaquin County.

3.13 TRANSPORTATION AND CIRCULATION

Figure 3.13-1 shows the location of the Project site and the distinct planning boundaries. Although the Project site includes non-development areas and existing right-of-way, this section only analyzes impacts of the proposed Development Area, as no development is currently proposed in the Non-Development Areas or the right-of-way annexation area.

DEVELOPMENT AREA DESCRIPTION

The Development Area is located on an approximately 161-acre parcel southwest of the Airport Way/Woodward Avenue intersection and proposes to construct 827 single family residential units. Primary access to the development would be provided by one full access intersection on Woodward Avenue (Woodward Avenue/Bella Terra Drive) and two full access intersections on Airport Way (Airport Way/Street MM and Airport Way/Peach Road).

STUDY AREA

The study area was selected based on the development project's location, site access, and expected trip distribution and assignment. The analysis considers traffic operations at the following intersections, which are displayed on Figure 3.13-1.

Study Intersections

Seven existing intersections and two future intersections, were selected for study. The study intersections include:

1. Airport Way/Daniels Street
2. Airport Way/SR 120 WB Ramps
3. Airport Way/SR 120 EB Ramps
4. Airport Way/W Atherton Drive
5. Airport Way/Woodward Avenue
6. Airport Way/Peach Road
7. Woodward Avenue/Bella Terra Drive
8. Airport Way/Street MM (future intersection)
9. Woodward Avenue/South McKinley Avenue (future intersection)

STUDY SCENARIOS

The study intersections were evaluated for the following four scenarios:

Existing Conditions – Analyzes operations as they exist today.

Existing Plus Project Conditions – Analyzes existing operations with the addition of trips generated from the Development Area.

Cumulative No Project Conditions – Analyzes cumulative year (2042) volumes based on the City of Manteca / San Joaquin Council of Governments Travel Demand Forecasting (TDF) Model, assuming the Development Area remains in its current undeveloped state.

Cumulative Plus Project Conditions – Analyzes cumulative year volumes with the addition of trips generated from the Development Area.

3.13.2 ANALYSIS METHODOLOGY

DATA COLLECTION

Figure 3.13-2 displays the existing intersection turning movement counts at the study intersections. Traffic count data collected in 2019 was used for the Airport Way/Daniels Street, Airport Way/SR 120 WB Ramps, Airport Way/SR 120 EB Ramps, and Airport Way/Woodward Avenue intersections. Traffic count data collected in February 2020 (pre-COVID-19) was used for the Airport Way/W Atherton Drive intersection.

Intersection turning movement counts were conducted during the AM (7:00 to 9:00) and PM (4:00 to 6:00) peak periods. Historical count data was unavailable at the Airport Way/Peach Road and Woodward Avenue/Bella Terra Drive intersections and due to the COVID-19 pandemic, new counts were not collected for this study. Instead, trips to/from Bella Terra Avenue and Peach Road were estimated based on existing land uses using trip rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual 10th Edition* and distributed based on existing travel patterns and intersection turning movement counts at Airport Way/Woodward Avenue.

TRAVEL DEMAND FORECASTING

The City of Manteca is currently in the process of updating their General Plan, which included development of a new City of Manteca Travel Demand Model. However, the General Plan has not been adopted and the Cumulative Year model has not yet been finalized. Therefore, the existing City of Manteca model was used to develop project travel characteristics (i.e. trip distribution) and Cumulative (2042) No Project intersection turning movement forecasts.

The travel demand model is a modified version of the SJCOG sub-area Travel Demand Forecasting (TDF) Model and incorporates the current RTP / Air Quality Model, build-out of the current City of Manteca General Plan, and General Plans for the surrounding communities of Lathrop, Ripon, San Joaquin County, and Stockton. The TDF Model also includes projects identified in the City's Public Facilities Implementation Plan (PFIP) and the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Project List for:

- Mainline Highway Improvements (Table 6-1 from SJCOG RTP);
- Interchange Improvements (Table 6-1 from SJCOG RTP); and
- Regional Roadway Improvements (Table 6-3 from SJCOG RTP).

The General Plan Update does not propose any changes to the General Plan land use designation for Non-development Area 1; however, the General Plan Update does include changes to the land use designation for Non-development Area 2. These changes include modifying one parcel currently designated as Neighborhood Commercial to Commercial and modifying five parcels designated as

3.13 TRANSPORTATION AND CIRCULATION

Commercial Mixed Use to Commercial. Two parcels are currently designated and will remain designated as Commercial Mixed Use. The Cumulative No Project TDF model was updated to incorporate the proposed General Plan land use designations for consistency with the General Plan Update. Additionally, the model was updated to reflect anticipated land uses for the commercial development located northwest and southwest of the Airport Way/W Atherton Drive intersection, based on direction from the City of Manteca.

The traffic forecasting adjustment procedure known as the “difference method” was used to develop Cumulative Year (2042) AM and PM Peak Hour traffic forecasts. For a given intersection, this forecasting procedure is calculated as follows for every movement at the study intersections:

$$\text{Cumulative Year Forecast} = \text{Existing Volume} + (\text{Cumulative Year TDF Model} - \text{Base Year TDF Model})$$

In addition to developing intersection turning movement forecasts, the Base Year and Cumulative Year travel demand models were used to develop trip distribution for Existing Plus Project and Cumulative Plus Project conditions.

VMT ANALYSIS METHODOLOGY

As previously described, VMT is used as the primary metric for significant transportation impacts. Residential development that would generate vehicle travel exceeding 15 percent below the established baseline VMT may indicate a significant transportation impact. The following sections describe the methodology used for the Baseline and Cumulative Vehicle Miles Traveled (VMT) Analysis.

BASELINE (EXISTING) MANTECA MODEL

The Base Year Travel Demand Forecasting (TDF) Model developed for the General Plan Update was used to develop Baseline Average Weekday Daily VMT per single family household and to develop trip distribution under Existing Plus Project conditions. The Base Year model represents 2019/2020 Pre-COVID AM peak hour, PM peak hour, and Average Daily Traffic conditions. Baseline VMT was calculated by taking the total VMT generated by all single-family residential households in the City of Manteca and dividing it by the total number of single-family residential households in the City of Manteca. The established baseline for single family homes is 103.8 VMT per single family home.

INTERIM GENERAL PLAN YEAR 2040 MODEL

Fehr & Peers recently developed an Interim General Plan Year 2040 TDF Model for the City of Manteca, City of Lathrop, City of Ripon and surrounding unincorporated areas of San Joaquin County. The TDF model was used to estimate the Development Area’s Cumulative Average Weekday Daily VMT and considers several factors that affect frequency and distance of vehicle travel, including availability and locations of complimentary land use, transportation network, distances traveled to and from areas external to the model area, and availability of high-capacity commuter rail / transit services.

The proposed Project was added to the Cumulative Year 2040 model. Based on the Interim Model, the Development Area would generate a total 63,266 daily VMT, resulting in a VMT of 76.5 per household.

INTERSECTION ANALYSIS

Study intersections were analyzed using procedures and methodologies contained in the *Highway Capacity Manual – 6th Edition* (Transportation Research Board, 2016). These methodologies were applied using Synchro 10 software which considers traffic volumes, lane configurations, signal timings, signal coordination, and other pertinent parameters of intersection operations.

Level of Service (LOS)

The operational performance of the roadway network is commonly described with the term Level of Service (LOS). LOS is a qualitative measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. In general, LOS A represents free-flow conditions with no congestion, and LOS F represents severe congestion and delay under stop-and-go conditions. For signalized intersections, roundabouts and all way stop control intersections, LOS is based on the average delay experienced by all vehicles passing through the intersection.

For side-street stop-controlled intersections, the delay and LOS for the overall intersection is reported along with the delay for the worst-case movement. **Table 3.13-1** displays the delay range associated with each LOS category for signalized and unsignalized intersections

TABLE 3.13-1: INTERSECTION LOS CRITERIA

LEVEL OF SERVICE	DESCRIPTION (FOR SIGNALIZED INTERSECTIONS)	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)	
		SIGNALIZED INTERSECTIONS	UNSIGNALIZED INTERSECTIONS
A	Operations with very low delay occurring with favorable traffic signal progression and/or short cycle lengths.	≤ 10.0	≤ 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10.0 to 20.0	> 10.0 to 15.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 to 35.0	> 15.0 to 25.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 to 55.0	> 25.0 to 35.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	> 55.0 to 80.0	> 35.0 to 50.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80.0	> 50.0

SOURCE: LOS = LEVEL OF SERVICE, V/C RATIO = RATIO-TO-CAPACITY RATIO

SOURCE: TRANSPORTATION RESEARCH BOARD 2016

3.13 TRANSPORTATION AND CIRCULATION

Although LOS cannot be used as a CEQA metric to identify significant transportation impacts, intersection operations were analyzed for the proposed Project and are discussed in section 3.13.6, Impact Analysis.

3.13.3 EXISTING CONDITIONS

This subsection presents the existing bicycle, pedestrian, and transit facilities as well as intersection operations under Existing Conditions.

EXISTING PEDESTRIAN AND BICYCLE FACILITIES

The City of Manteca Active Transportation Plan (adopted September 1, 2020) defines the following bicycle facility types:

CLASS I BIKEWAY: BIKE PATH

Bike paths, often referred to as shared-use paths or trails, are off-street facilities that provide exclusive use for non-motorized travel, including bicyclists and pedestrians. Bike paths have minimal cross flow with motorists and are typically located along landscaped corridors.

CLASS II BIKEWAY: BIKE LANE

Class II bike lanes are on-street facilities that use striping, stencils, and signage to denote preferential or exclusive use by bicyclists. On-street bike lanes are located adjacent to motor vehicle traffic.

CLASS III BIKEWAY: BIKE ROUTE

Class III bike routes are streets with signage and optional pavement markings where bicyclists travel on the shoulder or share a lane with motor vehicles. Class III bike routes are utilized on low-speed and low volume streets to connect bike lanes or paths along corridors that do not provide enough space for dedicated lanes.

CLASS III BIKEWAY: BICYCLE BOULEVARD

Class III bicycle boulevards are similar to Class III bike routes, in that they are primarily utilized on low speed and low-volume streets, and can close important gaps in the bicycle network where there may be insufficient space for dedicated lanes. Bicycle boulevards provide further enhancements to bike routes to encourage slow speeds and discourage non-local vehicle traffic via traffic diverters, chicanes, traffic circles, and/or speed tables.

CLASS IV BIKEWAY: SEPARATED BIKEWAY

Class IV separated bikeways, commonly known as cycle tracks, are physically separated bicycle facilities that are distinct from the sidewalk and designed for exclusive use by bicyclists. They are located within the street right-of-way, but provide comfort similar to Class I bike paths.

Figure 3.13-3 presents the existing bicycle and pedestrian network in the study area. As displayed, sidewalks are present along portions of Woodward Avenue adjacent to residential subdivisions and

along internal roadways within those subdivisions. Class II bike lanes are also present along segments of Woodward Avenue.

TRANSIT SERVICE

Figure 3.13-4 presents the existing transit network in the study area. Manteca Transit operates a fixed-route and Dial-a-Ride bus service with stops throughout the city. Route 4 provides weekday fixed route service to the study area. The nearest stop is less than one half mile from the proposed Project and is located on Airport Way north of Peregrine Street. In addition to Manteca Transit, the San Joaquin Regional Transportation District provides both weekday and weekend service to the city.

RAIL

Currently, there are no Union Pacific Railroad (UPRR) tracks within the study area. There are UPRR tracks in the City of Manteca and, at certain locations, the tracks have at-grade crossings with streets serving vehicular traffic.

EXISTING INTERSECTION OPERATIONS

Existing operations were analyzed for the weekday AM and PM peak hours at the study intersections. Table 3.13-2 displays the existing AM and PM peak hour operations at the study intersections. Traffic associated with the existing residential properties located in Non-development Areas 1 and 2 are included in the existing traffic counts and corresponding existing conditions analysis. In the future, Non-development Area 2 is designated for commercial land uses, rather than residential. Therefore, the cumulative year analysis reflects this change in land use designation. However, the existing conditions analysis does not, as the intent of the existing intersection operations analysis is to reflect conditions with the residential development that exists today. Technical calculations are displayed in Appendix E of Appendix F.

TABLE 3.13-2: INTERSECTION OPERATIONS – EXISTING CONDITIONS

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		DELAY	LOS	DELAY	LOS
1. Airport Way/ Daniels St	Traffic Signal	47.4	D	39.9	D
2. Airport Way/ SR 120 WB Ramps	Traffic Signal	8.1	A	14.0	B
3. Airport Way/ SR 120 EB Ramps	Traffic Signal	13.2	B	16.7	B
4. Airport Way/ W Atherton Dr	All-Way Stop	26.0	D	16.7	C
5. Airport Way/ Woodward Ave	All-Way Stop	11.7	B	14.8	B
6. Airport Way/ E Peach Rd	Side-Street Stop	1.0 (9.7)	A (B)	1.0 (9.9)	A (A)
7. Woodward Ave/ Bella Terra Dr	Side-Street Stop	1.3 (10.3)	A (B)	1.0 (9.9)	A (A)

NOTE: FOR SIGNALIZED INTERSECTIONS AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES. FOR SIDE STREET STOP-CONTROLLED INTERSECTIONS, INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR THE OVERALL INTERSECTION AND (WORST-CASE) MOVEMENT. INTERSECTION DELAY IS CALCULATED BASED ON THE PROCEDURES AND METHODOLOGY CONTAINED IN THE HIGHWAY CAPACITY MANUAL 6TH EDITION (TRANSPORTATION RESEARCH BOARD, 2016).

SOURCE: FEHR & PEERS, 2021.

3.13 TRANSPORTATION AND CIRCULATION

As displayed, all intersections operate acceptably during both the AM and PM peak hour. Most intersections operate at LOS A or B during the peak hours; however, Airport Way/Daniels Street operates at LOS D during the AM and PM peak hour and Airport Way/W Atherton Drive operates at LOS D during the AM peak hour and LOS C during the PM peak hour.

3.13.4 EXISTING PLUS PROJECT CONDITIONS

PROJECT TRIP GENERATION

Proposed Project trips generated by the Development Area were estimated using trip rates published in the *Trip Generation Manual 10th Edition* (Institute of Transportation Engineers, 2017). Table 3.13-3 displays the estimated number of daily, AM peak hour, and PM peak hour vehicle trips for the proposed development project.

TABLE 3.13-3: PROJECT TRIP GENERATION

LAND USE	TRAFFIC CONTROL	DAILY	AM PEAK HOUR			PM PEAK HOUR		
			IN	OUT	TOTAL	IN	OUT	TOTAL
Single-Family Residential Detached Housing (ITE 210)	827 DU	7,807	153	459	612	516	303	819

NOTES: TRIP GENERATION IS BASED ON TRIP RATES PUBLISHED IN TRIP GENERATION MANUAL 10TH EDITION (INSTITUTE OF TRANSPORTATION ENGINEERS, 2017).

SOURCE: FEHR & PEERS, 2021

PROJECT TRIP DISTRIBUTION

Project trips were distributed throughout the study area based the location of project access roads, existing directional patterns and output from the base year Manteca Travel Demand Model. Figure 3.13-5 presents the trip distribution under Existing Plus Project conditions. Figure 3.13-6 displays the traffic volumes under Existing Plus Project conditions.

EXISTING PLUS PROJECT INTERSECTION OPERATIONS

Primary access to the proposed Project would be provided by three (3) full access intersections located at Woodward Avenue/Bella Terra Drive, Airport Way/Street MM, and Airport Way/Peach Road, as displayed on Figure 3.13-7. The following improvements were assumed under Existing Plus Project conditions based on the Tentative Subdivision Map Plans dated January 22, 2021.

- **Woodward Avenue/Bella Terra Drive** – The existing side-street stop controlled intersection would be modified to include a single lane roundabout with a shared left/through/right turn lane on each approach.
- **Airport Way/Woodward Avenue** – The eastbound and part of the northbound approaches for the intersection would be modified for consistency with the future lane configurations identified in the City of Manteca PFIP. The eastbound approach would be

modified to include one left turn pocket, one through lane, and one right turn pocket. The northbound approach would include one left turn pocket and one shared through/right turn lane. No modifications to the southbound or westbound approaches are proposed.

- **Airport Way/Street MM** – The intersection would be constructed as a roundabout with two lanes in the southbound direction and one lane in the northbound direction.
- **Airport Way/Peach Road** – The existing side-street stop controlled intersection would be modified to include a shared eastbound left/through/right turn lane, one southbound shared left turn/through lane and one shared through/right turn lane, and a northbound left turn pocket. No other modifications are proposed.

Table 3.13-4 displays the AM and PM peak hour intersection operations under Existing Plus Project conditions. Technical calculations are displayed in Appendix E of Appendix F.

TABLE 3.13-4: INTERSECTION OPERATIONS – EXISTING PLUS PROJECT CONDITIONS

INTERSECTION	TRAFFIC CONTROL	PEAK HOUR	EXISTING		EXISTING + PROJECT	
			DELAY	LOS	DELAY ¹	LOS
1. Airport Way/ Daniels St	Signal	AM	47.4	D	42.0	D
		PM	39.9	D	39.4	D
2. Airport Way/ SR 120 WB Ramps	Signal	AM	8.1	A	12.3	B
		PM	14.0	B	29.9	C
3. Airport Way/ SR 120 EB Ramps	Signal	AM	13.2	B	45.6	D
		PM	16.7	B	25.8	C
4. Airport Way/ W Atherton Dr	AWSC	AM	26.0	D	256.8	F
		PM	16.7	C	191.1	F
5. Airport Way/ Woodward Ave	AWSC	AM	11.7	B	45.1	E
		PM	14.8	B	130.6	F
6. Airport Way/ E Peach Rd	SSSC	AM	1.0 (9.7)	A (A)	3.4 (13.4)	A (B)
		PM	1.9 (9.9)	A (A)	2.3 (16.0)	A ©
7. Woodward Ave/ Bella Terra Dr	SSSC/Roundabout ²	AM	1.3 (10.3)	A (B)	4.5	A
		PM	1.0 (9.9)	A (A)	4.9	A
8. Airport Way/ Street MM	Roundabout	AM	N/A	N/A	4.9	A
		PM			4.9	A

NOTES: AWSC = ALL WAY STOP CONTROLLED; SSSC = SIDE STREET STOP CONTROL.

1. FOR SIGNALIZED AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES. FOR SIDE-STREET STOP CONTROLLED INTERSECTIONS, THE DELAY AND LOS FOR THE MOST-DELAYED INDIVIDUAL MOVEMENT IS SHOWN IN PARENTHESES NEXT TO THE AVERAGE INTERSECTION DELAY AND LOS. ALL RESULTS ARE ROUNDED TO THE NEAREST SECOND.
2. INTERSECTION WAS ANALYZED AS A SSSC UNDER EXISTING CONDITIONS AND A ROUNDABOUT UNDER EXISTING PLUS PROJECT CONDITIONS.

BOLD INDICATES UNACCEPTABLE OPERATIONS.

SOURCE: FEHR & PEERS, 2021.

As displayed in table 3.13-4, the Airport Way/W Atherton Drive and Airport Way/Woodward Avenue intersection would operate unacceptably during both the AM and PM peak hours with the addition of project trips. In the near-term, the majority of trips are anticipated to use Airport Way

3.13 TRANSPORTATION AND CIRCULATION

to access SR 120 or continue north into Manteca, resulting in a large increase in trips at both intersections as a result of the proposed project.

The City of Manteca PFIP identifies traffic signals at both intersections; therefore, an AM and PM peak hour signal warrant analysis was completed to determine if traffic volumes under Existing Plus Project conditions satisfy the warrant for installation of a traffic signal. Results of this analysis indicate that both the Airport Way/W Atherton Drive and Airport Way/Woodward Avenue intersections satisfy the AM and PM peak hour warrant for installation of a traffic signal under Existing Plus Project conditions. Technical calculations are provided in Appendix F of Appendix F.

A traffic signal at both intersections was analyzed using Synchro 10. The PFIP includes modifications to lane configurations in addition to the installation of a traffic signal. Full PFIP improvements were not included in the Existing Plus Project analysis and no lane configuration changes were assumed for this scenario (aside from those already being proposed with the project). This is due to the fact that the full improvements identified in the PFIP would accommodate cumulative year traffic volumes, which would include development on the northwest, northeast, and southwest properties adjacent to the Airport Way/West Atherton Road intersection and the northeast, northwest, and southeast properties adjacent to the Woodward Avenue/Airport Way intersection. These parcels are not currently developed the intersections were evaluated to determine if they would operate acceptably with just the proposed Project improvements and installation of the traffic signal, rather than the full PFIP improvements.

Full PFIP improvements are analyzed under Cumulative No Project conditions and discussed later in this EIR.

Table 3.13-5 displays the AM and PM peak hour intersection operations at both intersections with installation of a traffic signal. As shown, both intersections would operate acceptably. Technical calculations are displayed in Appendix E of Appendix F.

TABLE 3.13-5: INTERSECTION OPERATIONS – EXISTING PLUS PROJECT CONDITIONS MITIGATION

INTERSECTION	CONTROL TYPE ²	PEAK HOUR	EXISTING + PROJECT		EXISTING + PROJECT MITIGATION	
			DELAY ¹	LOS	DELAY ¹	LOS
4. Airport Way/ W Atherton Dr	AWSC/Signal	AM	256.8	F	39.8	D
		PM	191.1	F	15.5	B
5. Airport Way/ Woodward Ave	AWSC/Signal	AM	45.1	E	45.1	B
		PM	130.6	F	130.6	B

NOTES: AWSC = ALL WAY STOP CONTROLLED; SSSC = SIDE STREET STOP CONTROL.

1. FOR SIGNALIZED INTERSECTIONS AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES. INTERSECTION DELAY IS CALCULATED BASED ON THE PROCEDURES AND METHODOLOGY CONTAINED IN THE HIGHWAY CAPACITY MANUAL 6TH EDITION (TRANSPORTATION RESEARCH BOARD, 2016).
2. INTERSECTION WAS ANALYZED AS AWSC UNDER EPP CONDITIONS AND WITH A TRAFFIC SIGNAL UNDER EPP MITIGATION.

BOLD INDICATES UNACCEPTABLE OPERATIONS.

SOURCE: FEHR & PEERS, 2021.

To determine appropriate timing for the traffic signals, the proposed Project was evaluated to determine how much additional traffic would cause the Airport Way/W Atherton intersection to degrade from acceptable to unacceptable level of service. With completion of Phase 1 of the development (which includes 193 units on the northwest side of the parcel), the Airport Way/W Atherton Drive intersection would degrade to unacceptable conditions and would satisfy the warrant for installation of a traffic signal under AM peak hour conditions.

With completion of Phase 2 (which includes 239 single family homes on the northeast side of the parcel), Airport Way/Woodward Avenue would degrade to unacceptable conditions and would satisfy the warrant for installation of a traffic signal under PM peak hour conditions. Therefore, it is recommended that the following be included in the Conditions of Approval for the proposed project.

- **Traffic COA #1** - The developer shall install a traffic signal at Airport Way/W Atherton Drive prior to issuance of the 193rd building permit, unless an alternative installation plan is agreed to by the Director of Public Works or City Engineer. The design of the traffic signal and associated intersection improvements shall be reviewed and approved by the Director of Public Works or City Engineer. The developer shall pay for the total cost for the design and installation of the traffic signal but will be reimbursed by the City of Manteca for the cost less their fair share. The project contributes to approximately 12 percent of volumes at this intersection; therefore, the project's fair share would be 12 percent.
- **Traffic COA #2** - The developer shall install a traffic signal at Airport Way/Woodward Avenue prior to issuance of the 432nd building permit, unless an alternative installation plan is agreed to by the Director of Public Works or City Engineer. The design of the traffic signal and associated intersection improvements shall be reviewed and approved by the Director of Public Works or City Engineer. The developer shall pay for the total cost for the design and installation of the traffic signal but will be reimbursed by the City of Manteca for the cost less their fair share. The project contributes to approximately 22 percent of volumes at this intersection; therefore, the project's fair share would be 22 percent.

3.13.5 CUMULATIVE CONDITIONS ANALYSIS

A Cumulative Conditions analysis was performed to identify potential impacts of the Project under Cumulative AM and PM peak hour conditions. The analysis reflects long-term development in the City of Manteca and other nearby jurisdictions using the original Manteca TDF model previously described.

The Cumulative Year analysis assumes the following improvements:

- **Construction of the McKinley Interchange:** The McKinley Interchange is assumed to be fully constructed. Construction of the interchange is anticipated to modify project trip distribution and therefore, McKinley Avenue/Woodward Avenue is added as a new study intersection under Cumulative Conditions. The McKinley Interchange ramps are not

3.13 TRANSPORTATION AND CIRCULATION

included as study intersections as development consistent with the proposed development project was assumed as part of that project analysis.

- **PFIP Improvements:** Intersection Lane configurations and traffic controls identified in the City of Manteca PFIP were assumed to be constructed. This results in modifications to the following intersections:
 - Airport Way/Daniels Way
 - Airport Way/W Atherton Drive
 - Airport Way/Woodward Avenue
 - Airport Way/E Peach Street

It is noted that the PFIP indicates a roundabout at the Airport Way/E Peach Street. However, since adoption of the PFIP, it has been determined that the roundabout would result in significant impacts to the existing residential homes adjacent to the intersection and is no longer the preferred control option. For this reason, Airport Way/E Peach Street is analyzed as a side-street stop controlled intersection under Cumulative Conditions.

- **SR 120 / Airport Way Interchange:** Appendix F of the SJCOG Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) indicates reconstruction of the SR 120/Airport Way Interchange. The design has not been formalized; therefore, we assumed the reconstruction would result in a configuration similar to the McKinley Interchange, which will be constructed as a partial cloverleaf interchange.

CUMULATIVE NO PROJECT INTERSECTION OPERATIONS

The original Manteca model was used to develop Cumulative No Project forecasts. As previously noted, land uses in Non-development Area 2 were updated for consistency with the Commercial Mixed Use and Commercial land use designations identified in the General Plan Update.

The Commercial Mixed Use designation allows for a combination of high-density residential, employment centers, retail commercial, and professional office uses. The Commercial designation allows for neighborhood, community, and regional-serving retail and service uses; offices; restaurants; service stations; high-way oriented and visitor commercial and lodging, and more. Figure 3.13-8 displays AM and PM peak hour turning movements and lane configurations at the study intersections. Table 3.13-6 displays the AM and PM peak hour intersection operations. Technical calculations are displayed in Appendix E of Appendix F.

TABLE 3.13-6: INTERSECTION OPERATIONS – CUMULATIVE NO PROJECT CONDITIONS

INTERSECTION	TRAFFIC CONTROL	PEAK HOUR	EXISTING CONDITIONS		CUMULATIVE NO PROJECT	
			DELAY ¹ (SEC/VEH)	LOS	DELAY ¹ (SEC/VEH)	LOS
1. Airport Way/ Daniels St	Signal	AM	47.4	D	33.1	C
		PM	39.9	D	67.4	E
2. Airport Way/ SR 120 WB Ramps	Signal	AM	8.1	A	9.3	A
		PM	14.0	B	9.6	A
3. Airport Way/ SR 120 EB Ramps	Signal	AM	13.2	B	6.8	A
		PM	16.7	B	9.7	A
4. Airport Way/ W Atherton Dr	AWSC/Signal ²	AM	26.0	D	81.5	F
		PM	16.7	C	62.8	E
5. Airport Way/ Woodward Ave	AWSC/Signal ²	AM	11.7	B	19.8	B
		PM	14.8	B	22.7	B
6. Airport Way/ E Peach Rd	SSSC	AM	1.0 (9.7)	A (A)	1.7 (10.5)	A (B)
		PM	1.0 (9.9)	A (A)	1.4 (10.2)	A (B)
7. Woodward Ave/ Bella Terra Dr	SSSC	AM	1.3 (10.3)	A (B)	4.5 (21.9)	A (C)
		PM	1.0 (9.9)	A (B)	2.4 (24.4)	A (C)
8. Woodward Ave/McKinley Ave ³	Roundabout	AM	N/A	N/A	15.7	C
		PM			30.2	D

NOTES: AWSC = ALL WAY STOP CONTROLLED; SSSC = SIDE STREET STOP CONTROL.

BOLD INDICATES UNACCEPTABLE OPERATIONS.

¹ FOR SIGNALIZED INTERSECTIONS, ROUNDABOUTS, AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES. FOR SIDE STREET STOP-CONTROLLED INTERSECTIONS, INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR THE OVERALL INTERSECTION AND (WORST-CASE) MOVEMENT. INTERSECTION DELAY IS CALCULATED BASED ON THE PROCEDURES AND METHODOLOGY CONTAINED IN THE HIGHWAY CAPACITY MANUAL 6TH EDITION (TRANSPORTATION RESEARCH BOARD, 2016).

² INTERSECTION WAS ANALYZED AS AWSC UNDER EXISTING CONDITIONS AND WITH A TRAFFIC SIGNAL UNDER CUMULATIVE NO PROJECT CONDITIONS.

³ INTERSECTION 8 – AIRPORT WAY/STREET MM DOES NOT EXIST UNDER CUMULATIVE NO PROJECT CONDITIONS

SOURCE: FEHR & PEERS, 2021

As displayed, Airport Way/Daniels Street would operate unacceptably at LOS E with 67 seconds of delay during the PM peak hour. Airport Way/W Atherton Drive would operate unacceptably at LOS F with 82 seconds of delay during the AM peak hour and LOS E with 63 seconds of delay during the PM peak hour.

CUMULATIVE PLUS PROJECT INTERSECTION OPERATIONS

As previously noted, construction of the McKinley Interchange would result in modifications to the development project’s trip distribution. The original Manteca TDF model was used to determine Cumulative Plus Project trip distribution. Cumulative Plus Project trip distribution is displayed in Figure 3.13-9.

Project trips were added to Cumulative No Project volumes to develop Cumulative Plus Project turning movements. Figure 3.13-10 displays the intersection turning movements under Cumulative

3.13 TRANSPORTATION AND CIRCULATION

Plus Project conditions. Table 3.13-7 presents the results of the Cumulative Plus Project intersection operations analysis.

TABLE 3.13-7: INTERSECTION OPERATIONS – CUMULATIVE PLUS PROJECT CONDITIONS

INTERSECTION	TRAFFIC CONTROL	PEAK HOUR	CUMULATIVE NO PROJECT		CUMULATIVE + PROJECT	
			DELAY ¹ (SEC/VEH)	LOS	DELAY ¹ (SEC/VEH)	LOS
1. Airport Way/ Daniels St	Signal	AM	33.1	C	30.2	C
		PM	67.4	E	73.0	E
2. Airport Way/ SR 120 WB Ramps	Signal	AM	9.3	A	10.1	B
		PM	9.6	A	14.9	B
3. Airport Way/ SR 120 EB Ramps	Signal	AM	6.8	A	8.6	A
		PM	9.7	A	13.5	B
4. Airport Way/ W Atherton Dr	Signal	AM	81.5	F	104.8	F
		PM	62.8	E	73.1	E
5. Airport Way/ Woodward Ave	AWSC/Signal	AM	19.8	B	28.6	C
		PM	22.7	C	33.3	C
6. Airport Way/ E Peach Rd	AWSC/Signal	AM	1.7 (10.5)	A (B)	3.6 (16.8)	A (C)
		PM	1.4 (10.2)	A (B)	3.1 (28.7)	A (D)
7. Woodward Ave/ Bella Terra Dr	SSSC/Roundabout ²	AM	4.5 (21.9)	A (C)	9.4	A
		PM	2.4 (24.4)	A (C)	18.7	C
8. Airport Way/ Street MM	Roundabout	AM	N/A	N/A	6.1	A
		PM			6.9	A
9. Woodward Ave/McKinley Ave	Roundabout	AM	15.7	C	24.3	C
		PM	30.2	D	42.3	E

NOTES: AWSC = ALL WAY STOP CONTROLLED; SSSC = SIDE STREET STOP CONTROL.

BOLD INDICATES UNACCEPTABLE OPERATIONS.

¹ FOR SIGNALIZED INTERSECTIONS AND ROUNDABOUTS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES. FOR SIDE STREET STOP-CONTROLLED INTERSECTIONS, INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR THE OVERALL INTERSECTION AND (WORST-CASE) MOVEMENT. INTERSECTION DELAY IS CALCULATED BASED ON THE PROCEDURES AND METHODOLOGY CONTAINED IN THE HIGHWAY CAPACITY MANUAL 6TH EDITION (TRANSPORTATION RESEARCH BOARD, 2016).

² INTERSECTION WAS ANALYZED AS A SSSC INTERSECTION UNDER CUMULATIVE NO PROJECT CONDITIONS AND A ROUNDABOUT UNDER CUMULATIVE PLUS PROJECT CONDITIONS.

SOURCE: FEHR & PEERS, 2021

As displayed, Airport Way/Daniels Street and Airport Way/W Atherton Drive would continue to operate unacceptably with the addition of project trips. Delay at Airport Way/Daniels Street would increase by approximately six seconds during the PM peak hour. Delay at Airport Way/W Atherton Drive would increase by approximately 23 seconds during the AM peak hour and 10 seconds during the PM peak hour.

Because these intersections operate unacceptably under both Cumulative Year scenarios, the following improvements were analyzed under Cumulative No Project Conditions and Cumulative Plus Project Conditions:

- **Airport Way/Daniels Street** – The eastbound approach was modified to include two right turn pockets due to the high eastbound right turn volume in the PM peak hour. It is important to note, adding dual right turn pockets can increase safety risks for pedestrians. If dual right turns are constructed, careful safety considerations should be considered for the sidewalk on the south leg of the intersection to ensure pedestrian safety is prioritized. This intersection will be further evaluated as part of the PFIP update that is anticipated to be completed by the end of 2021.
- **Airport Way/W Atherton Drive** – The eastbound approach was modified to include dual lefts and a shared through/right turn lane. The signal phasing for the westbound approach was modified to include an overlap phase for the westbound right turn. With this phasing plan, southbound U-turns would be prohibited.

Table 3.13-8 presents the results of this analysis. As displayed, both intersections would operate acceptably at LOS D or better with the improvements during both peak hours.

TABLE 3.13-8: INTERSECTION OPERATIONS –CUMULATIVE PLUS PROJECT CONDITIONS WITH IMPROVEMENTS

INTERSECTION	CONTROL TYPE ²	PEAK HOUR	EXISTING		EXISTING + PROJECT	
			DELAY ¹	LOS	DELAY ¹	LOS
1. Airport Way/ Daniels St	Signal	AM	28.9	C	27.5	C
		PM	50.6	D	53.2	D
4. Airport Way/ W Atherton Dr	Signal	AM	41.1	D	54.8	D
		PM	33.5	C	40.9	D

NOTES: AWSC = ALL WAY STOP CONTROLLED; SSSC = SIDE STREEP STOP CONTROL.

LOS = LEVEL OF SERVICE

¹ FOR SIGNALIZED INTERSECTIONS, ROUNDABOUTS, AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES. INTERSECTION DELAY IS CALCULATED BASED ON THE PROCEDURES AND METHODOLOGY CONTAINED IN THE HIGHWAY CAPACITY MANUAL 6TH EDITION (TRANSPORTATION RESEARCH BOARD, 2016).

SOURCE: FEHR & PEERS, 2021

With the addition of project trips, LOS at Woodward Avenue/McKinley Avenue, LOS would worsen from LOS D to LOS E during the PM peak hour.

To improve intersection operations the eastbound approach at Woodward Avenue/McKinley was modified to include a left turn lane and a through/right turn lane

Tables 3.13-9 presents the results of this analysis.

TABLE 3.13-9: INTERSECTION OPERATIONS – WOODWARD AVENUE/ BELLA TERRA DRIVE CUMULATIVE PLUS PROJECT CONDITIONS WITH IMPROVEMENTS

INTERSECTION	CONTROL TYPE ²	PEAK HOUR	EXISTING		EXISTING + PROJECT	
			DELAY ¹	LOS	DELAY ¹	LOS
9. Woodward Ave/McKinley Ave	Roundabout	AM	24.3	C	22.9	C
		PM	42.3	E	15.9	C

NOTES: AWSC = ALL WAY STOP CONTROLLED; SSSC = SIDE STREEP STOP CONTROL.

LOS = LEVEL OF SERVICE

3.13 TRANSPORTATION AND CIRCULATION

¹ FOR ROUNDABOUTS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES. INTERSECTION DELAY IS CALCULATED BASED ON THE PROCEDURES AND METHODOLOGY CONTAINED IN THE HIGHWAY CAPACITY MANUAL 6TH EDITION (TRANSPORTATION RESEARCH BOARD, 2016).

SOURCE: FEHR & PEERS, 2021

As displayed in tables 3.13-8 and table 3.13-9, the intersection would operate acceptably with the recommended intersection improvements. It is recommended that the improvements at the three intersections listed in tables 3.13-8 and 3.13-9 be constructed at the following times:

- **Intersection 1: Airport Way/Daniels Street** – This intersection would operate unacceptably with and without the proposed project under Cumulative Conditions. Therefore, the additional right turn lane should be constructed when the intersection is widened to include improvements identified in the PFIP, or if a new project is developed on the west side of the Airport Way/Daniels Street intersection. The proposed project would add traffic to this intersection and should pay their fair share of three percent (3%) for the improvements listed in the PFIP.
- **Intersection 4: Airport Way/W Atherton Drive** - This intersection would operate unacceptably with and without the proposed project under Cumulative Conditions. However, the project would install the traffic signal as described in Chapter 5, although all of the PFIP improvements identified for this intersection would not be necessary at that time. It is recommended that the eastbound approach striping and signal phasing be modified when development occurs on the northwest, northeast, or southwest parcels adjacent to the intersection. The project should not be required to fund these additional improvements, as the project is already constructing the traffic signal and the additional modifications would be necessary as a result of traffic associated with future developments on the west and east sides of the Airport Way/W Atherton Drive intersection.
- **Intersection 9: Woodward Avenue/McKinley Avenue** – The intersection would degrade from acceptable to unacceptable level of service under Cumulative Conditions with the addition of project trips. It is recommended that this intersection be constructed with an eastbound left turn lane and shared through/right turn lane when the roundabout is constructed. The project should pay their fair share of six percent (6%) for this improvement.

It is recommended that the following be incorporated into the Conditions of Approval for the proposed project:

- **Traffic COA #3** – Woodward Avenue/Bella Terra Drive shall be constructed as a roundabout concurrent with the first phase of development. The developer shall be fully responsible for this improvement.
- **Traffic COA #4** – The developer shall pay their fair share for improvements identified in the PFIP at the Airport Way/Daniels Street and Woodward Avenue/McKinley Avenue intersections. The project's fair share at Airport Way/Daniels Street would be three percent (3%) and the project's fair share at Woodward Avenue/McKinley Avenue would be six

percent (6%). This condition will be satisfied when the developer pays the PFIP fee, which is collected upon issuance of each home's building permit

3.13.6 REGULATORY SETTING

Existing transportation polices, laws, and regulations that would apply to the proposed Project are summarized below. This information provides a context for the impact discussion related to the Project's consistency with applicable regulatory conditions and development of significance criteria for evaluating Project impacts.

STATE

Senate Bill 743

Senate Bill (SB) 743 was signed into law in 2013 and is leading to substantial changes in the way transportation impact analyses are being prepared. Notably, it precludes the use of level of service (LOS) to identify significant transportation impacts in CEQA documents for land use projects, recommending instead that VMT be used as the preferred metric. On December 28, 2018, the CEQA Guidelines were amended to add Section 15064.3, Determining the Significance of Transportation Impacts, which states that generally, VMT is the most appropriate measure of transportation impacts. According to 15064.3(a), "Except as provided in subdivision (b)(2) (regarding roadway capacity), a project's effect on automobile delay shall not constitute a significant environmental impact." Beginning on July 1, 2020, the provisions of 15064.3 applied statewide.

To aid in SB 743 implementation, OPR released a *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Advisory) in December 2018. The Technical Advisory provides advice and recommendations to CEQA lead agencies on how to implement the SB 743 changes. This includes technical recommendations regarding the assessment of VMT, thresholds of significance, VMT mitigation measures, and screening thresholds for certain land use projects. Lead agencies may consider and use these recommendations at their discretion and with the provision of substantial evidence to support alternative approaches.

The Technical Advisory identifies "screening thresholds" to quickly identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study. The Technical Advisory suggests that projects meeting one or more of the following criteria should be expected to have a less-than-significant impact on VMT:

- **Small projects** – projects consistent with a SCS and local general plan that generate or attract fewer than 110 trips per day.
- **Projects near major transit stops** – certain projects (residential, retail, office, or a mix of these uses) proposed within ½ mile of an existing major transit stop or an existing stop along a high-quality transit corridor.

3.13 TRANSPORTATION AND CIRCULATION

- **Affordable residential development** – a project consisting of a high percentage of affordable housing may be a basis to find a less-than-significant impact on VMT.
- **Local-serving retail** – local-serving retail development tends to shorten trips and reduce VMT. The Technical Advisory encourages lead agencies to decide when a project will likely be local-serving, but generally acknowledges that retail development including stores larger than 50,000 square feet might be considered regional-serving. The Technical Advisory suggests lead agencies analyze whether regional-serving retail would increase or decrease VMT (i.e., not presume a less-than-significant).
- **Projects in low VMT areas** – residential and office projects that incorporate similar features (i.e., density, mix of uses, transit accessibility) as existing development in areas with low VMT will tend to exhibit similarly low VMT.

The Technical Advisory also identifies recommended numeric VMT thresholds for residential, office, and retail projects. The residential threshold is described below.

- Residential development that would generate vehicle travel exceeding 15 percent below existing (baseline) residential VMT per capita may indicate a significant transportation impact. Existing VMT per capita may be measured as a regional VMT per capita or as city VMT per capita.

The Travel Demand Forecasting model developed for the City of Manteca General Plan Update was used to develop baseline (2019) VMT per single family residential household. The established baseline VMT per single family household is 103.8. Therefore, single family residential projects that exceed 88.2 VMT per household would be considered to have a significant transportation impact. Projects that generate less than 88.2 VMT per household would be considered to have a less than significant transportation impact.

LEVEL OF SERVICE (LOS)

As previously noted, LOS may no longer be used to identify significant transportation impacts in CEQA documents for land use projects. However, this analysis includes a LOS analysis to determine if the proposed Project would result in unacceptable intersection operations per the City of Manteca standards. Policy C-P-2 of the 2023 General Plan strives for LOS D or better while LOS E or worse is considered unacceptable.

LOCAL

City of Manteca General Plan

The City of Manteca General Plan 2023 includes several policies that are relevant to an evaluation of the visual quality of the Project site. However, as previously stated, the city is undergoing an Update to the General Plan. Both existing 2023 General Plan policies and proposed General Plan Update policies applicable to the Project are identified below:

2023 GENERAL PLAN (EXISTING)

Policies: Level of Service

- C-P-1. The City shall strive to balance levels of service (LOS) for all modes (vehicle, transit, bicycle, and pedestrian) to maintain a high level of access and mobility, while developing a complete and efficient circulation system. The impact of new development and land use proposals on LOS and accessibility for all modes should be considered in the review process.
- C-P-2. To the extent feasible, the City shall strive for a vehicular LOS of D or better at all streets and intersections, except in the Downtown area where right-of-way is limited, pedestrian, bicycle, and transit mobility are most important and vehicular LOS is not a consideration. See Figure 4.1 for a map defining the Downtown area. While vehicular LOS is not a consideration in the Downtown area, traffic studies shall disclose whether any proposed transportation or land use action will substantially increase traffic at intersections and roadways within this area of the City.
- C-P-3. At the discretion of City staff, certain locations may be allowed to fall below the City’s LOS standard under the following circumstances:
 - Where constructing facilities with enough capacity to provide LOS D is found to be unreasonably expensive. This applies to facilities, for example, on which it would cost significantly more per dwelling unit equivalent (DUE) to provide LOS D than is deemed reasonable by City staff.
 - Where it is difficult or impossible to maintain LOS D because surrounding facilities in other jurisdictions operate at LOS E or worse.
 - Where maintaining LOS D will be a disincentive to use of existing alternative modes or to the implementation of new transportation modes that would reduce vehicle travel. Examples include roadway or intersection widening areas with substantial pedestrian activity or near major transit centers.
 - In the Downtown area the city cannot maintain the vehicular LOS D standard because of the historic nature of development and limited street right-of-way. However, it is the City’s goal to maintain high quality access and mobility in the area with a priority toward non-auto modes. Therefore, the City shall require that new discretionary land use action within the Downtown area, which generate net new PM peak hour auto trips, to participate in enhancing access and mobility for transit, bicycle, and pedestrian modes. These enhancements may include but are not limited to:
 - Enhancing sidewalks to create a high quality pedestrian environment, including wider sidewalks and improved crosswalks, landscaping, buffers between sidewalks and vehicle travel lanes, enhanced pedestrian lighting, increased availability of benches, provisions for café-style seating, and usage of monument elements and other public art.
 - Improving bicycle facilities to include attractive and secure bicycle parking, installation of bike lockers in appropriate locations, and provision of bicycle lanes along appropriate roadways.
 - Enhancing transit stops through high quality, well maintained shelters, and provision of wayfinding signage and transit timetables.

3.13 TRANSPORTATION AND CIRCULATION

- Providing off-street parking with high quality access to Downtown businesses, and which is well-maintained and provides amenities like shade streets, canopies, adequate lighting, and wayfinding signage.
- Supporting the development of a Downtown Business Improvement District or similar mechanism to help fund ongoing maintenance of the streetscape enhancements.

Policies: Street System

- C-P-5. Major circulation improvements shall be completed as abutting lands develop or redevelop, with dedication of right-of-way and construction of improvements, or participation in construction of such improvements, required as a condition of approval.
- C-P-6. New development shall pay a fair share of the costs of street and other transportation improvements based on impacts to LOS and other modes in conformance with the goals and policies established in this Circulation Element and the PFF program.

Policies: Bikeways and Pedestrian Facilities

- C-P-29. Through regular updates to the City's Bicycle Master Plan, the City shall establish a safe and convenient network of identified bicycle routes connecting residential areas with recreation, shopping, and employment areas within the city. The City shall also strive to develop connections with existing and planned regional routes shown in the San Joaquin County Bicycle Master Plan.
- C-P-30. Provide adequate bicycle parking facilities at commercial, business / professional and light industrial users.
- C-P-36. City shall strive to provide a sidewalk system that serves all members of the community and meets the latest guidelines related to the Americans with Disabilities Act (ADA).
- C-P-40. Provide sidewalks along all new streets in the city.

MANTECA GENERAL PLAN UPDATE (PROPOSED)

Policies: Multimodal Accessibility

- C-1-1. Strive to balance levels of service (LOS) for all modes (vehicle, transit, bicycle, and pedestrian) to maintain a high level of access and mobility, while developing a safe, complete, and efficient circulation system. The impact of new development and land use proposals on VMT, LOS, and accessibility for all modes should be considered in the review process.
- C-1.2. To the extent feasible, strive for a vehicular LOS of D or better during weekday AM and PM peak hours at all streets and intersections, except in the Downtown area or in accordance with Policy C-1.3.
- C-1.3. At the discretion of the City Council or Planning Commission, certain locations may be allowed to fall below the City's LOS standard established by C-1.2 under the following circumstances:
 - Where constructing facilities with enough capacity to provide LOS D is found to be unreasonably expensive.

- Where conditions are worse than LOS D and caused primarily by traffic from adjacent jurisdictions.
- Where maintaining LOS D will be a disincentive to use transit and active transportation modes (i.e., walking and bicycling) or to the implementation of transportation or land use improvements that would reduce vehicle travel. Examples include roadway or intersection widening in areas with substantial pedestrian activity or near major transit centers.

Policies: Major Streets Master Plan

- C-2.3. Require new development to pay a fair share of the costs of street and other transportation improvements based on impacts in conformance with the goals and policies established in this Circulation Element and the Public Facilities Implementation Program (PFIP).
- C-2.4. Design street improvements to provide multiple, direct, and convenient routes for all modes.
- C-2.5. Include sound attenuation walls in the frontage improvements associated with Arterial roadways in accordance with City adopted Street Standards and Specifications, as amended.
- C-2.6. Align residential and collector street intersections with collector and arterial streets with other residential and collector streets, where feasible, to maintain a high degree of connectivity between neighborhoods, minimize circuitous travel, and to allow bicyclists and pedestrians to travel conveniently and safely from one neighborhood to another without using major streets.
- 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-2.9. Where traffic congestion, pedestrian travel, collision history, or other factors warrant the installation of a traffic signal, the feasibility of a roundabout shall also be evaluated on a whole life cycle cost basis. In general, a roundabout should be installed at these locations unless right of way, cost, operational concerns, design limitations, or other issues preclude the installation of a roundabout.
- C-2.13. Require development projects to arrange streets in an interconnected block pattern, so that pedestrians, bicyclists, and drivers are not forced onto arterial streets for inter- or intra-neighborhood travel. This approach will also ensure safe and efficient movement of emergency responders and ensure that vehicle miles traveled are minimized within the community. The street pattern shall include measures to provide a high level of connectivity and decrease vehicle miles traveled.
- C-2.14. Residential subdivisions with lots fronting on an existing arterial street shall provide for separate roadway access to the maximum extent feasible, with access to residential lots

3.13 TRANSPORTATION AND CIRCULATION

provided from residential or collector streets. For those properties that currently front arterial streets, consideration should be given to providing separate roadway access as a condition of approval for any redevelopment or subdivision of the property.

- 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).

Policies: Bikeway and Pedestrian Systems

- 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-4.8. 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.

Policies: Public Transit

- 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.

City of Manteca Active Transportation Plan

The Manteca Active Transportation Plan (ATP) is a comprehensive guide that creates a vision for a network of trails, bike lanes, sidewalks, and other elements aimed at supporting safe walking and bicycling throughout the city and providing connections to nearby destinations.

San Joaquin County Regional Transportation Plan

In June 2014, SJCOG adopted the *2014 Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS)*. This document outlines countywide transportation expenditures based on funding from sources like the federal government, the State of California, and locally collected funds. The RTP contains several proposed improvements that would benefit the regional roadway network within the study area.

San Joaquin County Congestion Management Plan

SJCOG operates a Regional Congestion Management Program (RCMP), which monitors cumulative transportation impacts of growth on the regional roadway system, identifies deficient roadways, and develops plans to mitigate the deficiencies. The RCMP considers LOS E or F operations to be deficient and includes segments of SR 120 and Airport Way (north of SR 120) as CMP facilities.

San Joaquin County Regional Traffic Impact Fee (RTIF)

SJCOG has implemented a regional traffic impact fee that is assessed on new developments throughout San Joaquin County. The RTIF capital project list provides funding for various freeway

and local road widening (project list found at: <http://www.sjcog.org/DocumentCenter/View/495>). The RTIF capital project began in 2005, and has generated millions in funding for project delivery.

Measure K

Measure K is the half-cent sales tax dedicated to transportation projects in San Joaquin County. Measure K was passed in November 1990, and began collecting funds for a system of improved highways and local streets, new passenger rail service, regional and inter-regional bus routes, park-and-ride lots, new bicycle facilities, and railroad crossings. On November 7, 2006, San Joaquin County voters decided to extend Measure K for an additional 30 years. The renewal of Measure K is estimated to generate \$2.552 billion for the transportation programs identified in the Measure K Expenditure Plan.

City of Manteca Public Facilities Implementation Plan

The City of Manteca is in the midst of updating the Public Facilities Implementation Plan (PFIP). The PFIP is a fee program which collects fees from new development to finance capacity expansion of public facilities (i.e., water, sewer collection, drainage, and transportation) necessary to accommodate the new demands. The City's draft PFIP includes a variety of roadway widenings or extensions such as Airport Way, Atherton Drive, McKinley Avenue, and other roadways within the city. The plan also includes various intersection improvements.

3.13.7 THRESHOLDS OF SIGNIFICANCE

This section describes the thresholds or criteria that determine whether the Project causes a significant impact on the roadway, bicycle, pedestrian, rail, and/or transit systems. These thresholds are based California Environmental Quality Act (CEQA), policies from the General Plans for the City of Manteca and San Joaquin County, and Caltrans policies. For the purposes of this Draft EIR, the Project would cause a significant impact if it would result in any of the following listed criteria:

- Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities;
- Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b);
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); and/or
- Result in inadequate emergency access.

Appendix G of the CEQA Guidelines indicates that impacts may be significant if a project conflicts with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. The proposed Project would have a significant impact on transit, bicycles, or pedestrians if it would conflict with adopted policies, plans, or programs regarding these systems, or create or exacerbate disruptions to the performance or safety of these systems.

3.13 TRANSPORTATION AND CIRCULATION

Appendix G of the CEQA Guidelines indicates that impacts may be significant if a project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). Impacts may also be significant if a project results in inadequate emergency access. The proposed Project would have a significant impact on the transportation system if it would increase hazards due to a design feature, incompatible uses, or inadequate emergency access.

The existing General Plan includes a policy within the Transportation Element which requires maintenance of a level of service (LOS) D standard on City roadways, with some exceptions. Because LOS is no longer a CEQA significance metric, an analysis of LOS is provided for the purposes of policy consistency analysis.

3.13.8 IMPACTS AND MITIGATION MEASURES

Impact 3.13-1: Project implementation would not result in VMT increases that are greater than 85 percent of Baseline conditions (Less than Significant)

The proposed development was evaluated against the screening criteria in OPR's Technical Advisory. The following criteria is applicable to residential developments.

- Small projects – projects consistent with a Sustainable Communities Strategy and local general plan that generate or attract fewer than 110 trips per day.
- Projects near major transit stops – certain projects (residential, retail, office, or a mix of these uses) proposed within ½ mile of an existing major transit stop or an existing stop along a high-quality transit corridor.
- Affordable residential development – a project consisting of a high percentage of affordable housing may be a basis to find a less-than-significant impact on VMT.
- Projects in low VMT areas – residential and office projects that incorporate similar features (i.e., density, mix of uses, transit accessibility) as existing development in areas with low VMT will tend to exhibit similarly low VMT.

The proposed development does not constitute a small project, is not located within ½ mile of an existing major transit stop, and does not include a high percentage of affordable housing units; therefore, the development is not eligible to be screened out based on these criteria. The City of Manteca has not developed low VMT areas so this criterion is not applicable at this time.

Therefore, a detailed VMT analysis was conducted using methodology discussed in Chapter 2 of this report. The proposed development would result in a significant impact if it were to generate vehicle travel exceeding 15 percent below the established Baseline VMT of 103.8.

Table 3.13-10 presents the established Baseline Citywide VMT per single family residential household and the Cumulative Development Project VMT per household.

TABLE 3.13-10: PROJECT VEHICLE MILES TRAVELED ANALYSIS

<i>BASELINE VMT PER SINGLE FAMILY HOUSEHOLD</i>	<i>CUMULATIVE DEVELOPMENT PROJECT VMT PER SINGLE FAMILY HOUSEHOLD</i>	<i>VMT REDUCTION</i>	<i>PERCENTAGE REDUCTION</i>
103.8	76.5	-27.3	-26.3%

SOURCE: CITY OF MANTECA TRAVEL DEMAND MODEL, FEHR & PEERS, 2021.

The proposed development would generate an estimated average of 76.5 VMT per single family household, resulting in a total daily project VMT of 63,266. The development is anticipated to generate a total of 7,807 daily trips, indicating the average trip length would be approximately 8.1 miles. This is due to the fact that in the Cumulative Year, the number of jobs and the amount of commercial, retail, and recreational development in the city is anticipated to increase and residents would be able to travel shorter distances to access these types of land uses.

The Cumulative Development Project daily VMT of 76.5 represents an approximately 26 percent decrease from Baseline conditions. Because the development would not generate vehicle travel exceeding 15 percent below the established baseline, this is a **less than significant** transportation impact.

Impact 3.13-2: Project implementation may conflict with a program, plan, policy or ordinance addressing the circulation system, including transit, bicycle, and pedestrian facilities (Less than Significant)

ACTIVE TRANSPORTATION PLAN (ATP)

The ATP identifies planned sidewalks and a future Class II bike lane on Woodward Avenue and Class III bike route on Airport Way. The proposed development project is consistent with the ATP and will construct a separated sidewalk and Class II bike lanes on Woodward Avenue. Additionally, sidewalks are proposed on Airport Way and on internal streets, providing adequate connections to and throughout the site for pedestrians.

The ATP indicates lighting may be needed on Woodward Avenue. Detailed project plans have not been provided; therefore, it is unclear if lighting is proposed at this time. However, it is recommended that lighting be provided along the project frontages to increase visibility and help prevent bicycle and pedestrian collisions.

MANTECA GENERAL PLAN 2023 GENERAL PLAN 2023

The proposed development project’s General Plan land use designation is Low Density Residential (LDR), which allows 2.1 to 8 dwelling units per acre. The development project proposes 5.3 dwelling units/acre and is therefore, consistent with the General Plan land use designation. Additionally, the project is consistent with goals and policies identified in the Circulation Element of the City of Manteca General Plan 2023, as described below:

3.13 TRANSPORTATION AND CIRCULATION

Goals

- Goal C-2. Provide complete streets designed to serve a broad spectrum of travel modes, including automobiles, public transit, walking, and bicycling.
- Goal C-9. Provide a safe, secure, and convenient bicycle route system that connects to retail, employment centers, public facilities, and parks
- Goal C-10. Provide for safe and convenient pedestrian circulation.

The proposed Project includes bicycle and pedestrian improvements consistent with those required in the ATP. Additionally, the proposed Project includes bus turnouts on Woodward Avenue and Airport Way. Each of these improvements help create complete streets and are consistent with the goals described above.

Policies

- C-P-2: To the extent feasible, the City shall strive for a vehicular LOS of D or better at all streets and intersections, except in the Downtown area where right-of-way is limited, pedestrian, bicycle, and transit mobility are most important and vehicular LOS is not a consideration.
- C-P-9: Residential and collector street intersections with collector and arterial streets shall be aligned with other residential and collector streets, where feasible, to maintain a high degree of connectivity between neighborhoods, minimize circuitous travel, and to allow bicyclists and pedestrians to travel conveniently and safely from one neighborhood to another without using major streets.

Although LOS cannot be used as a CEQA metric to identify significant transportation impacts, intersection operations were analyzed for the proposed project and are discussed in Chapters 4, 5, and 6. With recommended improvements described in those chapters, all intersections would operate at LOS D or better with the addition of project trips. Additionally, the project has been designed so residential streets align with existing intersections, including Woodward Avenue/Bella Terra Drive, Airport Way/Peach Street, and internal streets that connect to the residential development to the west.

The City's PFIP is also developed and periodically updated to provide funding for local roadway expansion and improvements, which include bicycle and pedestrian facilities.

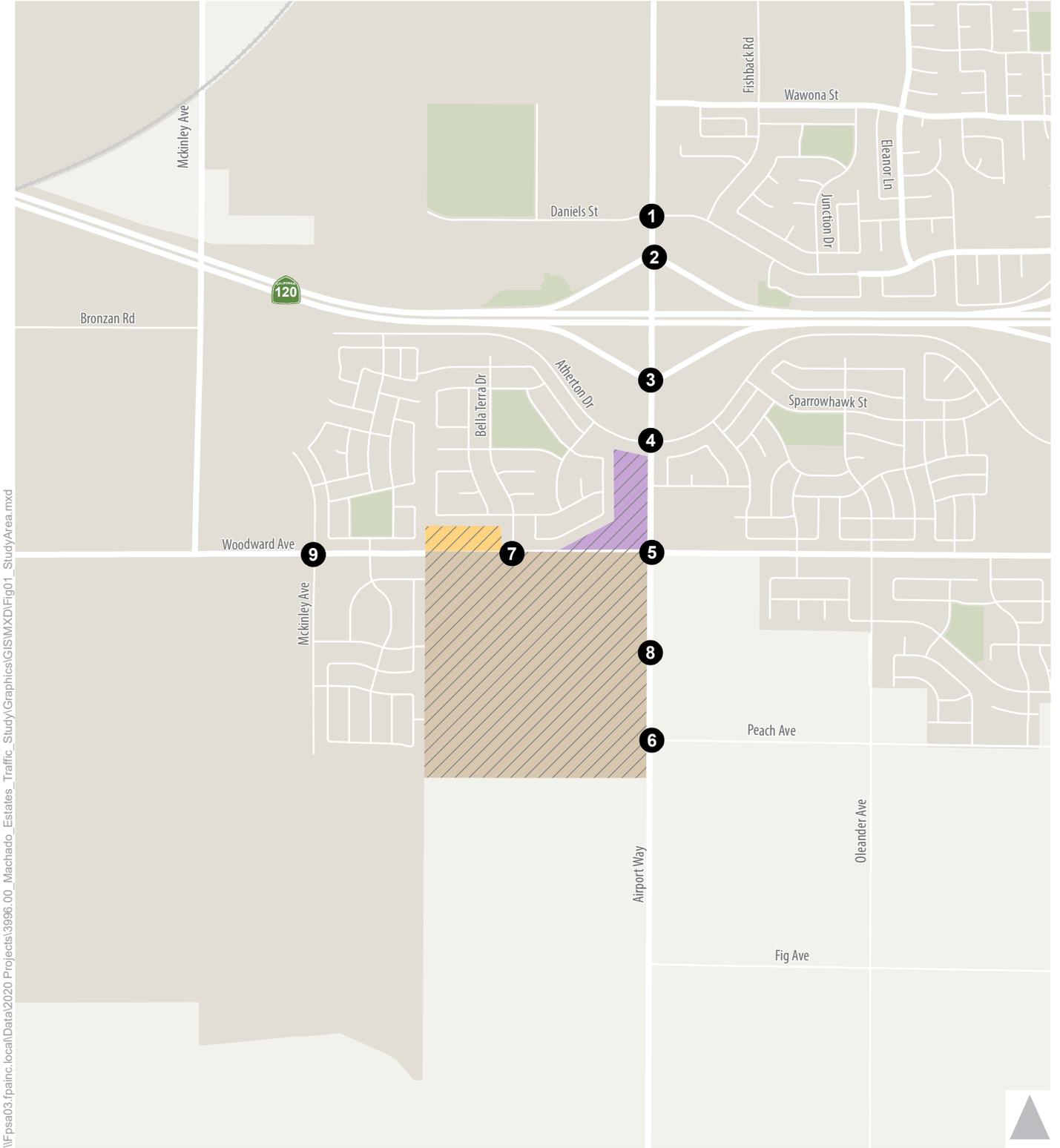
Implementation of the proposed Project would not result in a conflict with an existing or planned pedestrian facility, bicycle facility, or transit service/facility. Because the proposed Project would not conflict with adopted programs, plans, policies, or ordinances that address the circulation system, including transit, bicycle, and pedestrian facilities; this impact is considered **less than significant**.

Impact 3.13-3: Project implementation may increase hazards due to a design feature, incompatible uses, or inadequate emergency access (Less than Significant)

As described in section 3.13-1, Environmental Setting and displayed in Figure 3.13-7, primary access for the proposed development project would be at Woodward Avenue/Bella Terra Drive, Airport Way/Street MM, and Airport Way/Peach Road. Access would also be provided internally by Blue Sledge Street, Diablo View Drive, and Sage Street, which connect to the subdivision to the west. The preliminary site plan indicates adequate emergency access would be provided and there do not appear to be any geometric hazards. However, all intersections and street sections should be reviewed by the City of Manteca and designed to comply with typical City standards. The project proposes side-street stop control at the Airport Way/Peach Road intersection and a roundabout at the Woodward Avenue/Bella Terra Drive and Airport Way/Street MM intersections. Both the Woodward Avenue/Bella Terra Drive and Airport Way/Street MM roundabouts should be carefully designed to ensure they can accommodate emergency vehicles.

Additionally, the proposed development project would not conflict with any program, plan, ordinance, or policy addressing the circulation system, substantially increase hazards due to a geometric feature, or result in inadequate emergency access. Implementation of the proposed Project would be **less than significant** relative to this topic.

This page intentionally left blank.



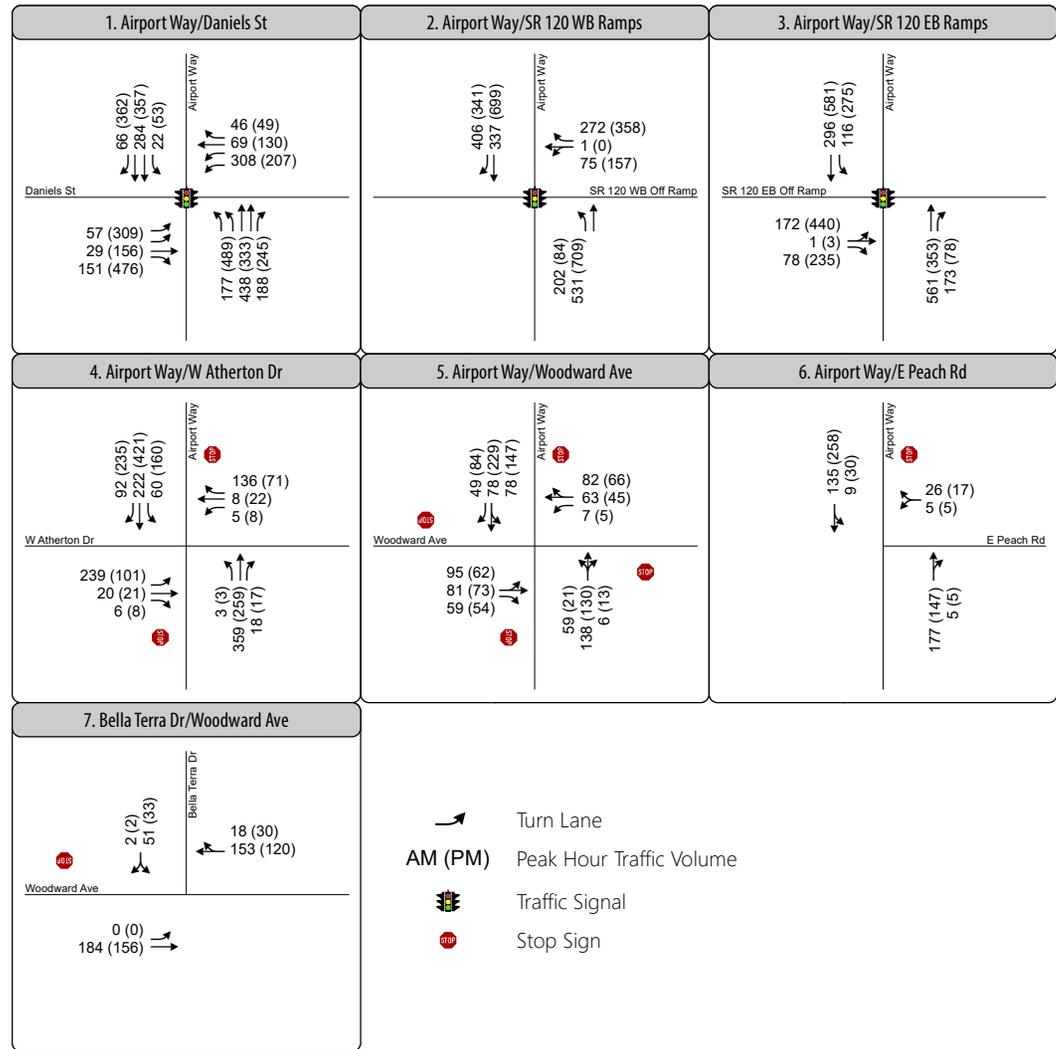
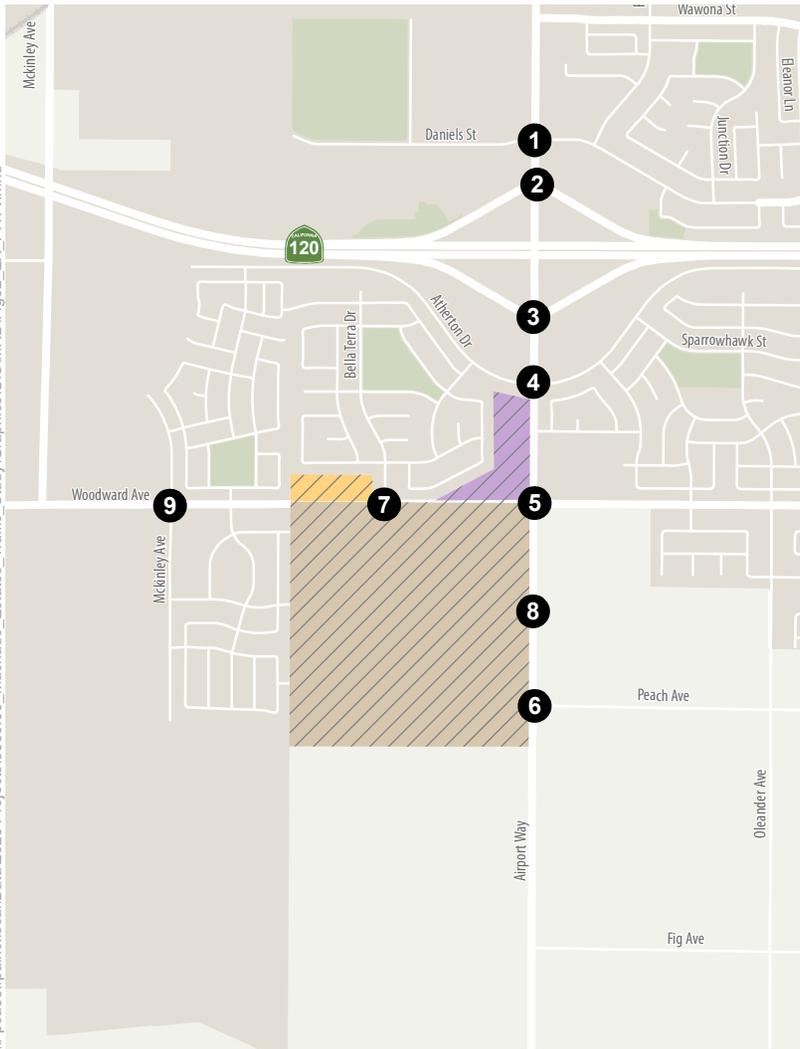
\\Fpsa03.fpsainc.local\Data\2020 Projects\33966.00_Machado_Estates_Traffic_Study\Graphics\GISMXD\Fig01_StudyArea.mxd

- 1 Study Intersection
- Non-Development Area 1
- Annexation Area
- Non-Development Area 2
- Development Area
- Manteca City Limits



Figure 3.13-1
Project Location

This page intentionally left blank.



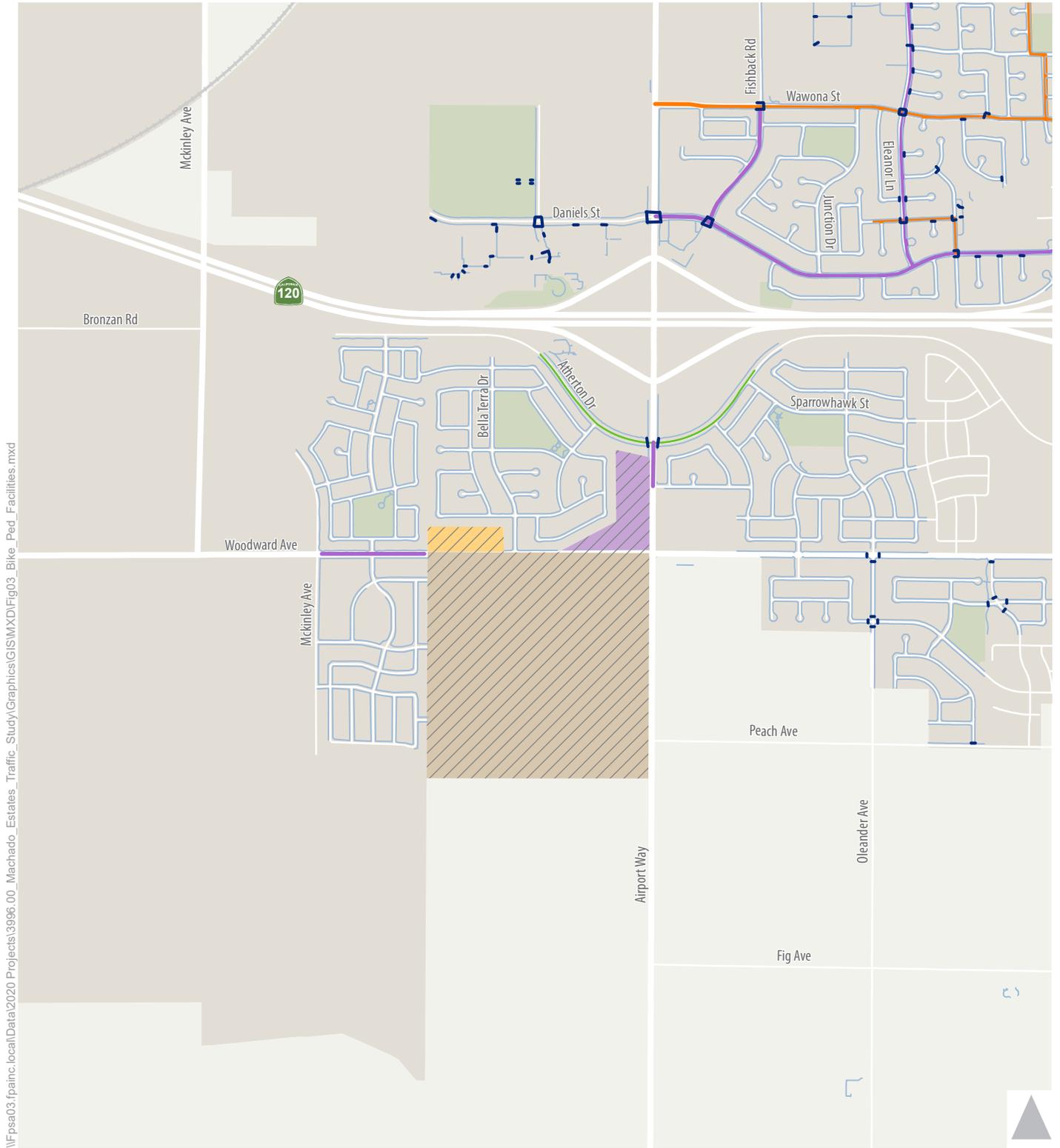
- 1 Study Intersection
- Non-Development Area 1
- Non-Development Area 2
- Annexation Area
- Development Area
- Manteca City Limits



Figure 3.13-2

Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions

This page intentionally left blank.



\\Fpsa03.fpsainc.local\lData\2020 Projects\3396.00_Machado_Estates_Traffic_Study\Graphics\GISMXD\Fig03_Bike_Ped_Facilities.mxd

- Class I Shared-use Path
- Class II Bike Lane
- Class III Bike Route
- Crosswalk
- Sidewalk
- Annexation Area
- Development Area
- Non-Development Area 1
- Non-Development Area 2
- Manteca City Limits

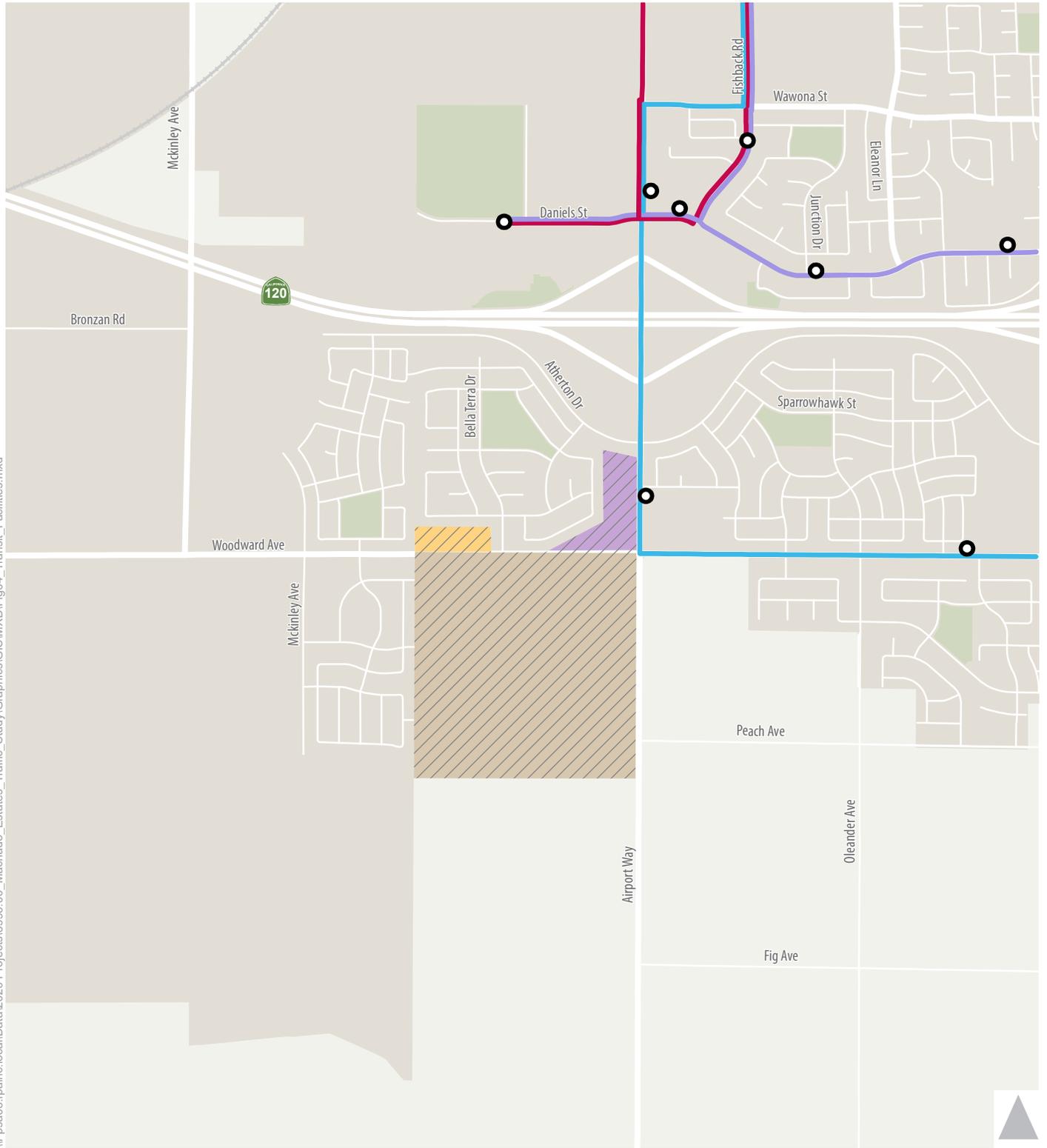


Figure 3.13-3

Existing Bicycle and Pedestrian Facilities

This page intentionally left blank.

\\Fpsa03.fpa\nc.local\lData\2020 Projects\3396.00_Machado_Estates_Traffic_Study\Graphics\GISMXD\Fig04_Transit_Facilities.mxd

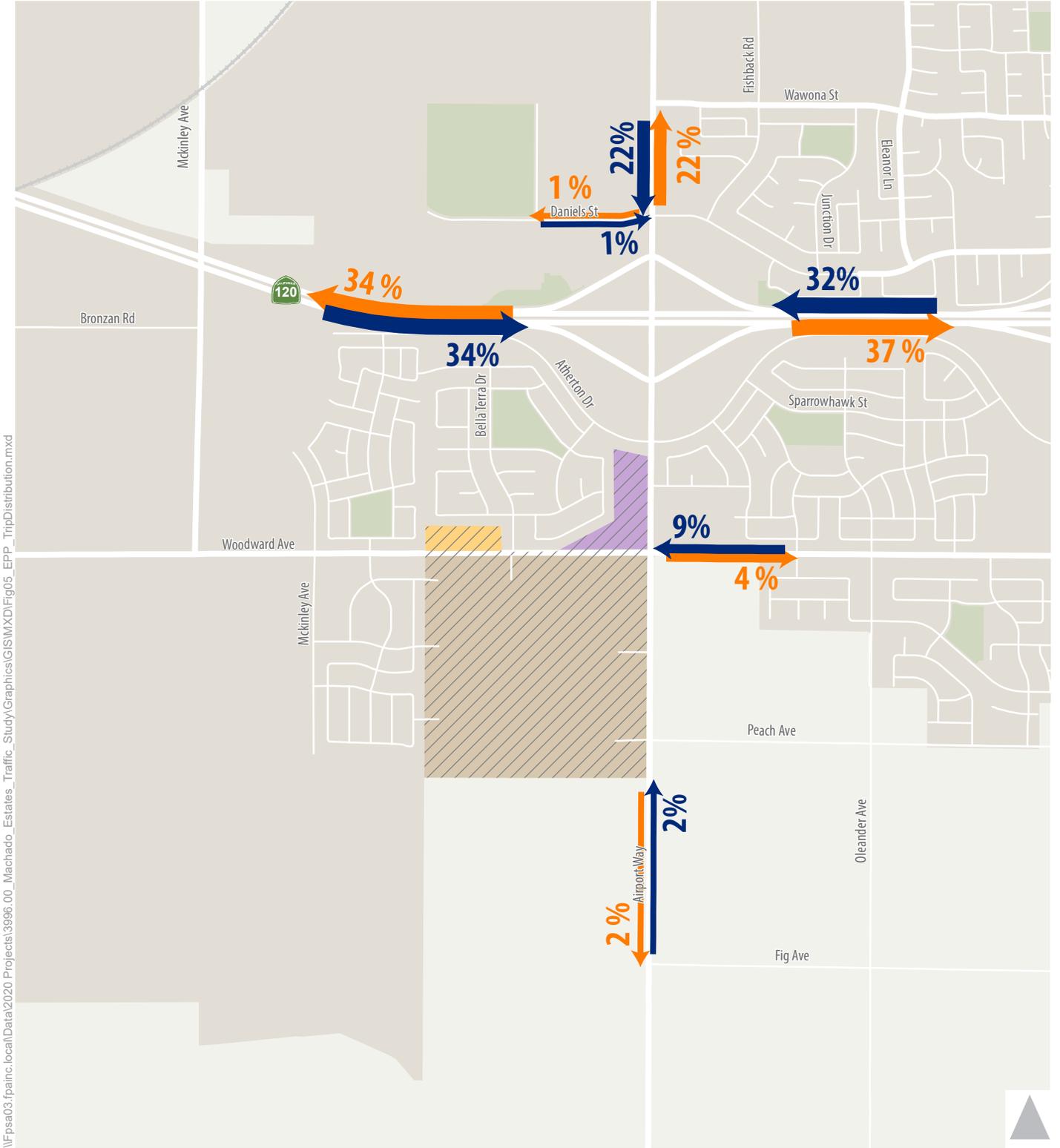


- Bus Stop
- Manteca Transit
- Route 1
- Route 2
- Route 4
- /// Annexation Area
- Development Area
- Non-Development Area 1
- Non-Development Area 2
- Manteca City Limits



Figure 313-4
Existing Transit Facilities

This page intentionally left blank.



\\Fpsa03.fpa\inc.local\lData\2020 Projects\3996.00_Machado_Estates_Traffic_Study\Graphics\GISMXD\Fig05_EPP_TripDistribution.mxd

- AM & PM Inbound Trip Distribution Percentage
- AM & PM Outbound Trip Distribution Percentage

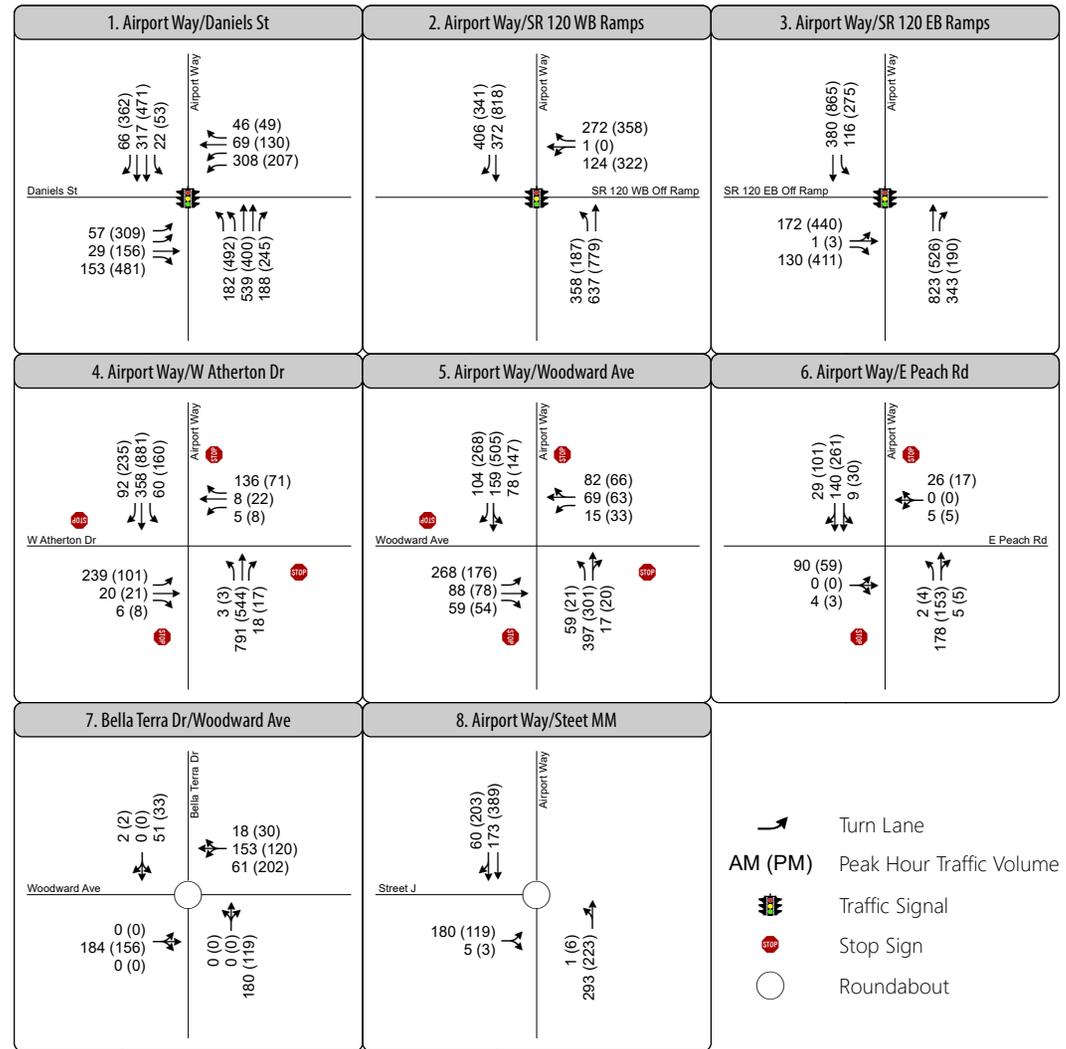
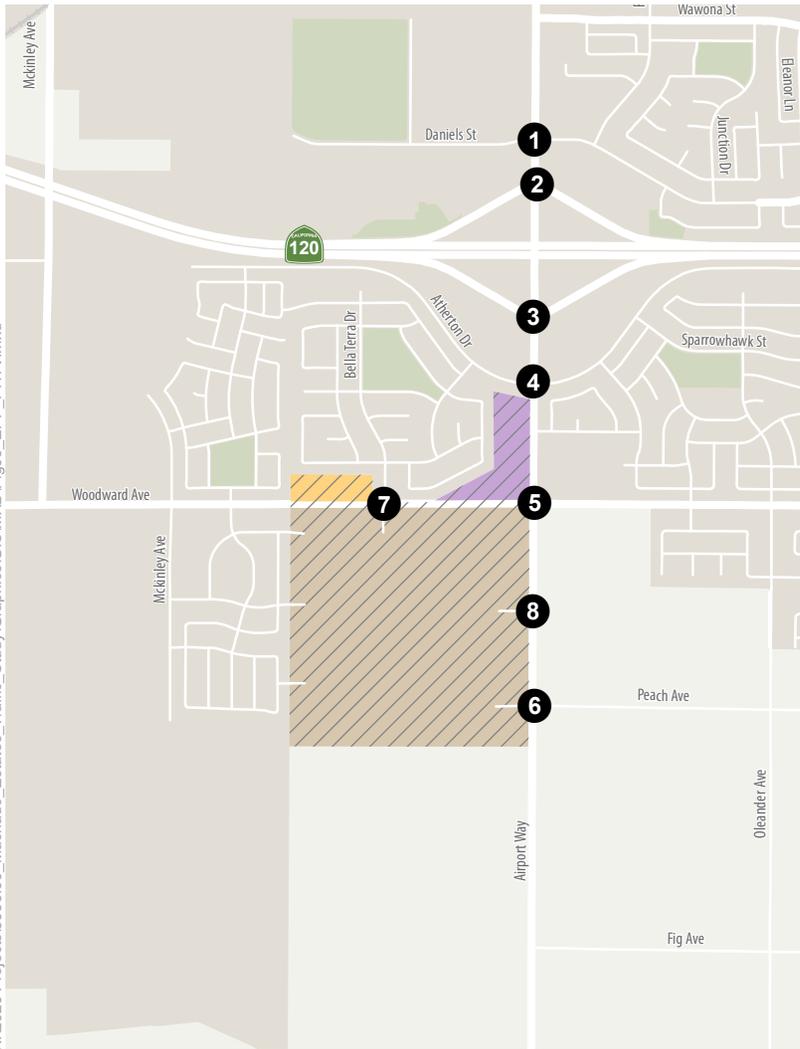
- Annexation Area
- Development Area
- Non-Development Area 1

- Non-Development Area 2
- Manteca City Limits



Figure 3-13-5
Existing Plus Project Trip Distribution

This page intentionally left blank.



- 1 Study Intersection
- Non-Development Area 1
- Annexation Area
- Non-Development Area 2
- Development Area
- Manteca City Limits

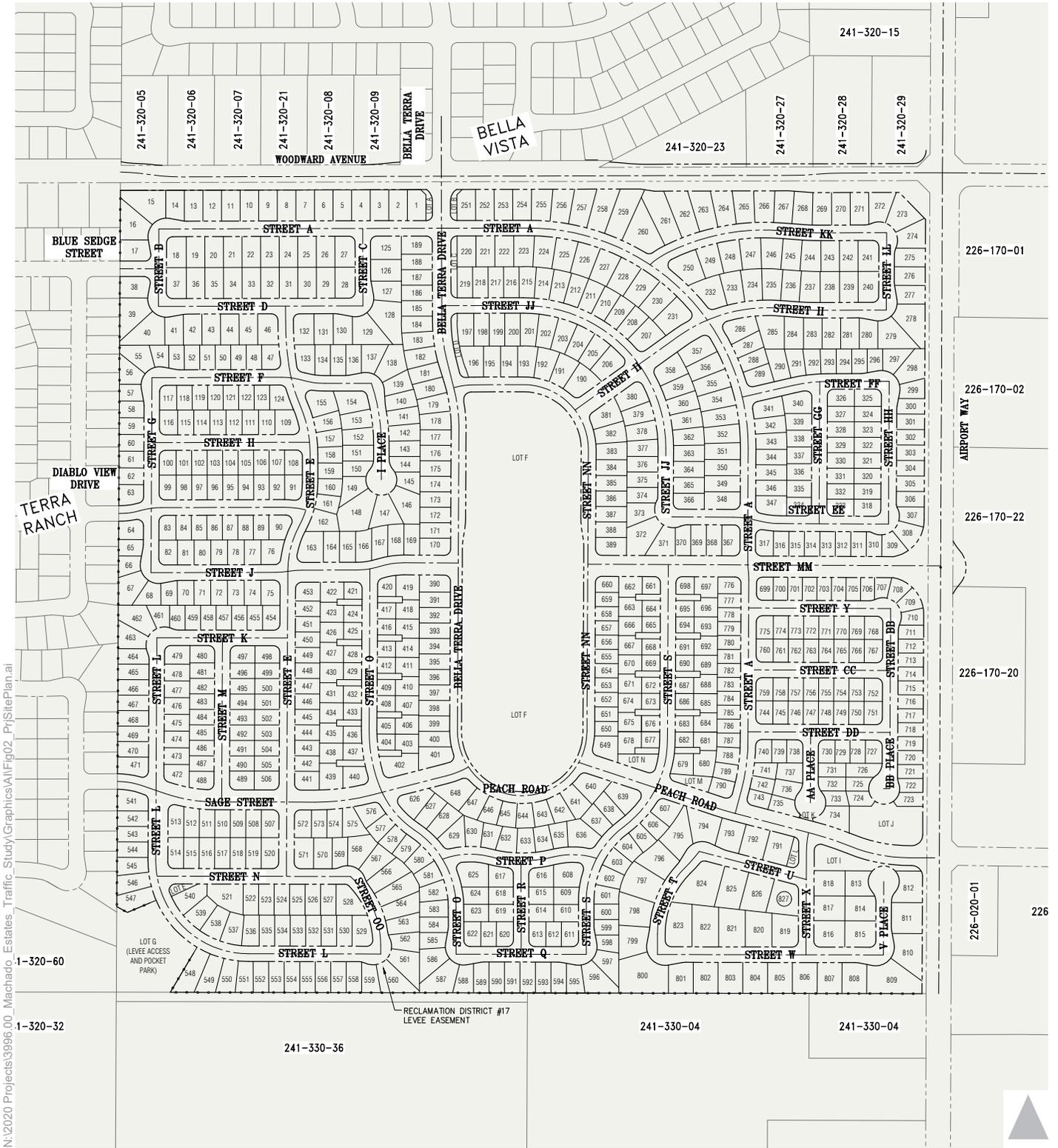
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Traffic Signal
- Stop Sign
- Roundabout

Figure 3.13-6

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions



This page intentionally left blank.

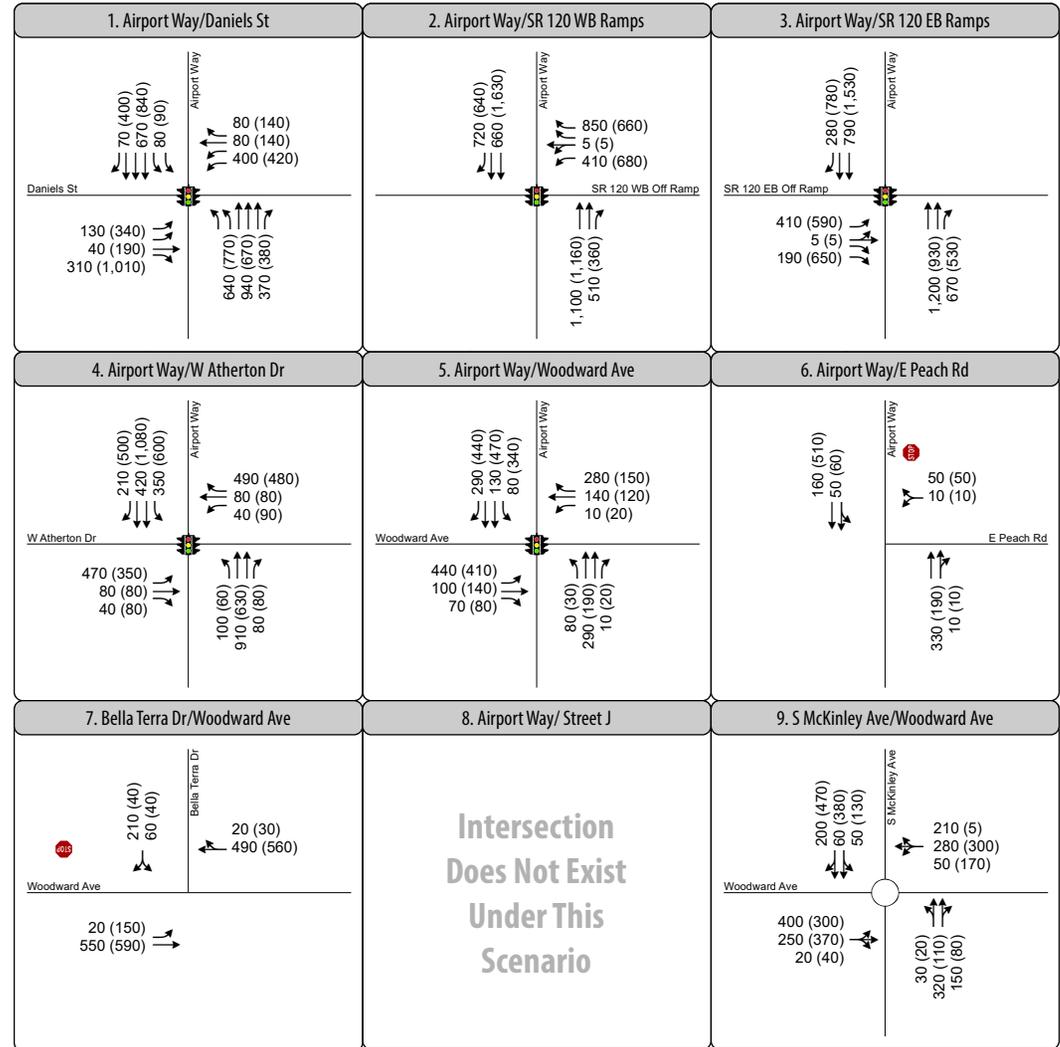
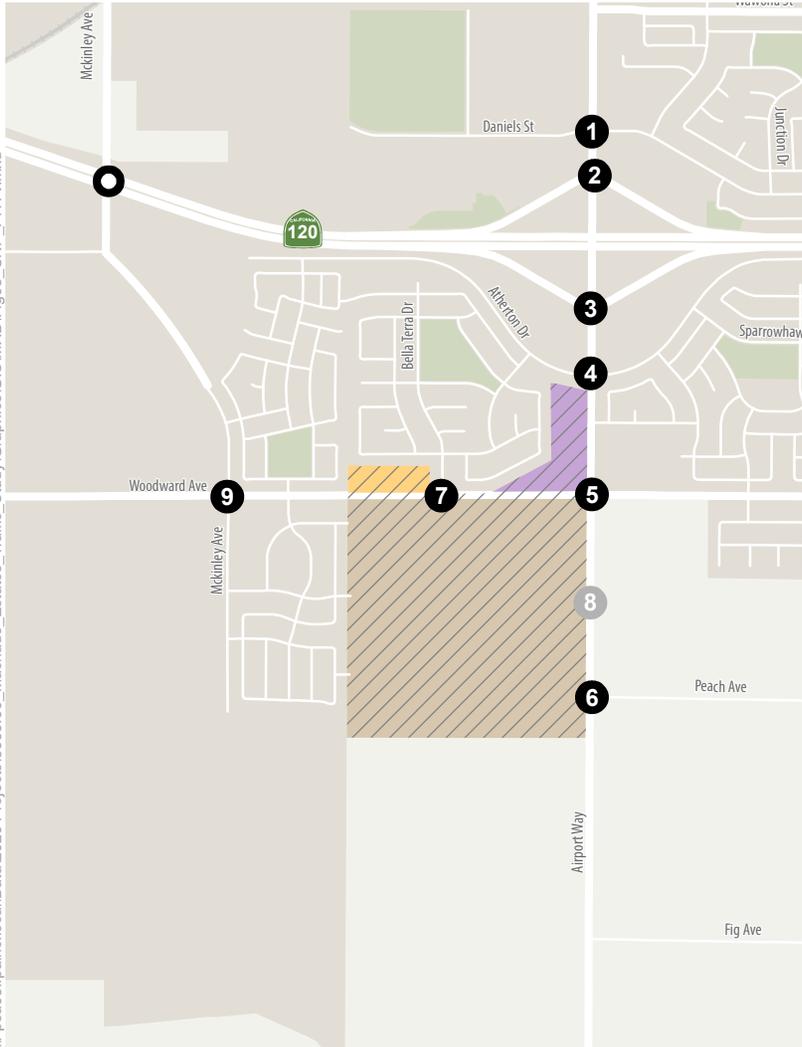


N:\2020 Projects\3996.00 Machado Estates Traffic Study\Graphics\A\Fig02_PriSitePlan.ai



Figure 3.13-7
Project Site Plan

This page intentionally left blank.



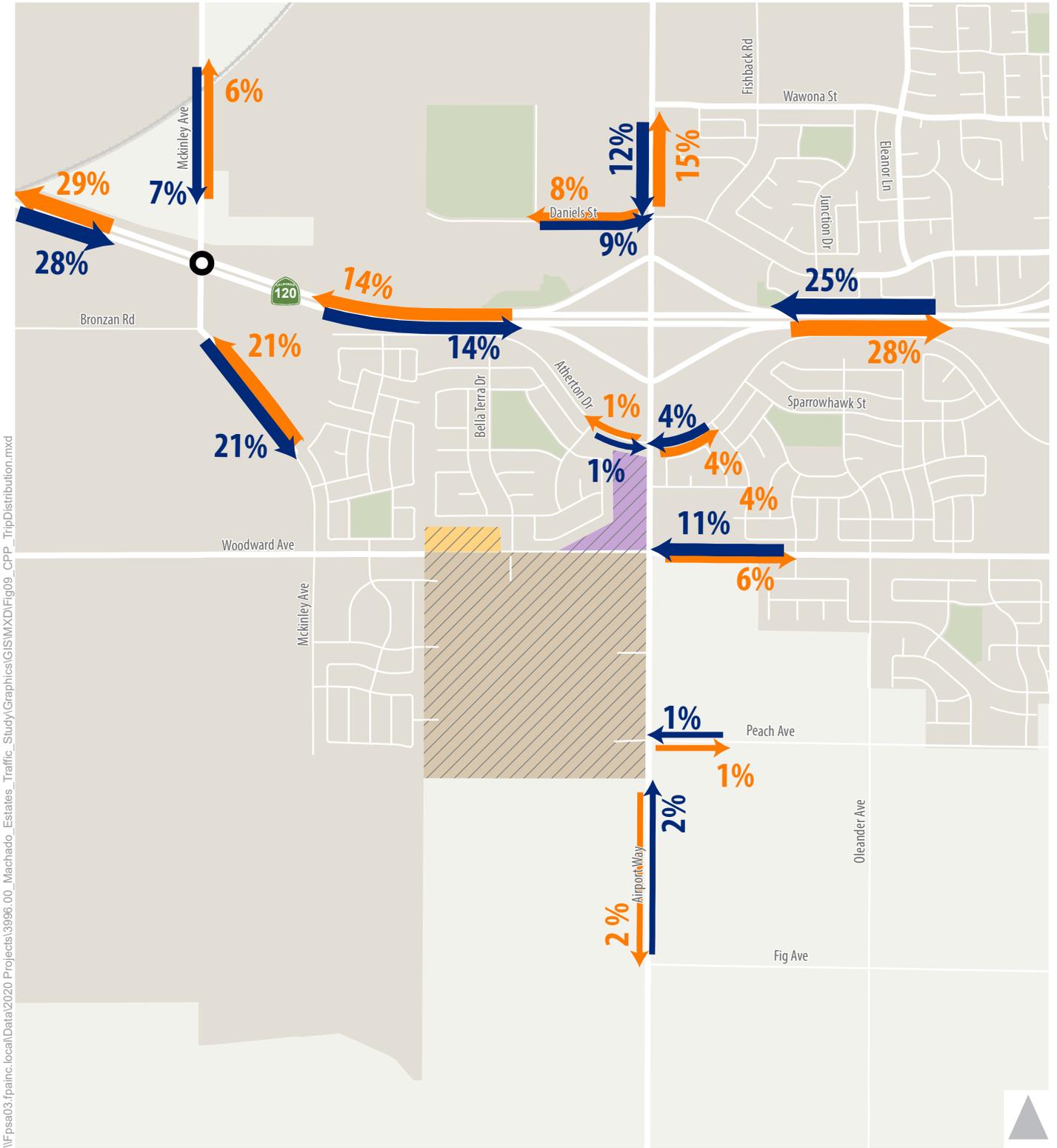
- 1 Study Intersection
 8 Study Intersection (Not Analyzed)
- Future Interchange
 ◌ Roundabout
- Non-Development Area 1
 Non-Development Area 2
- Annexation Area
 Manteca City Limits
- Development Area
- Turn Lane
 AM (PM) Peak Hour Traffic Volume
 Traffic Signal

Figure 3.13-8

Peak Hour Traffic Volumes and Lane Configurations - Cumulative No Project Conditions



This page intentionally left blank.



\\Fpsa03.fpa\inc.local\lData\2020 Projects\33966.00_Machado_Estates_Traffic_Study\Graphics\GIS\MXD\Fig09_CPP_TripDistribution.mxd

- AM & PM Inbound Trip Distribution Percentage
- AM & PM Outbound Trip Distribution Percentage

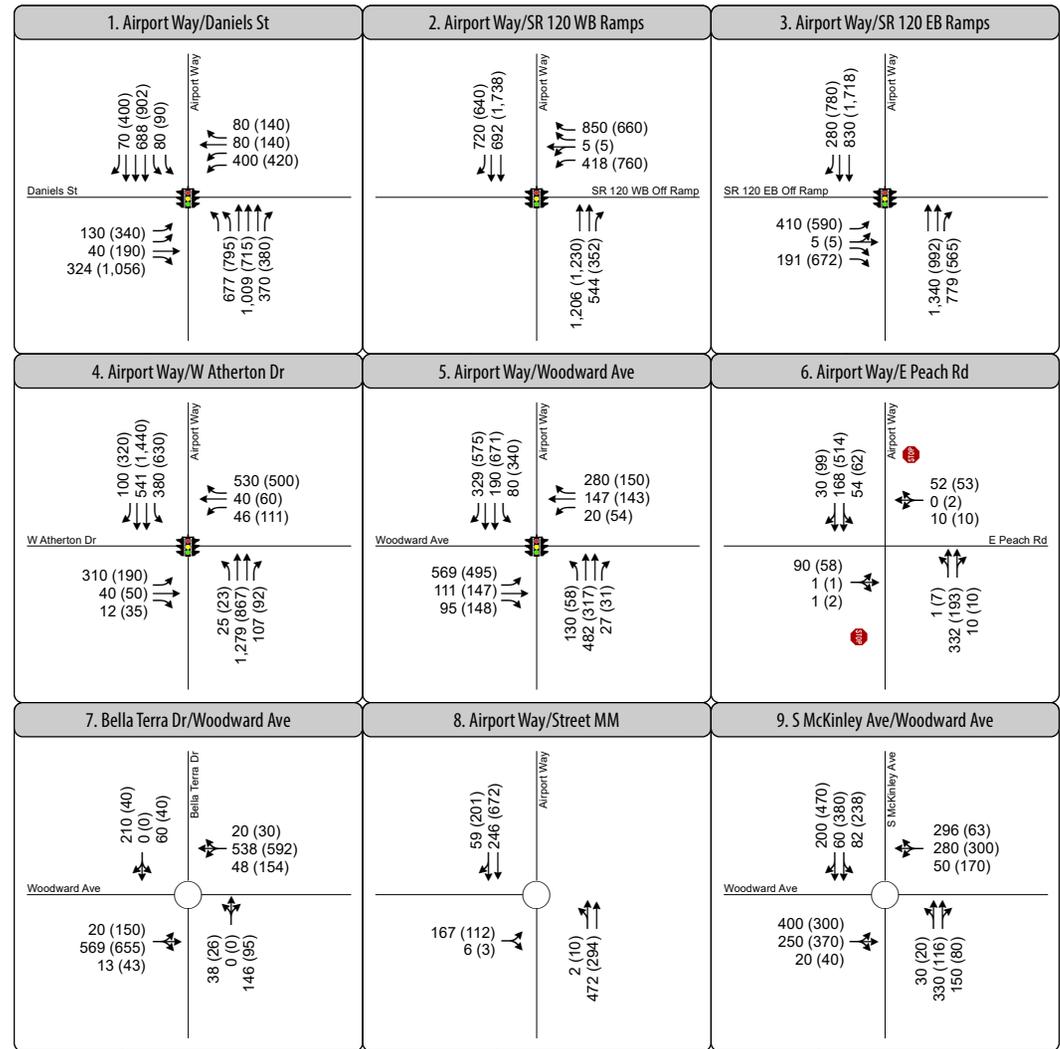
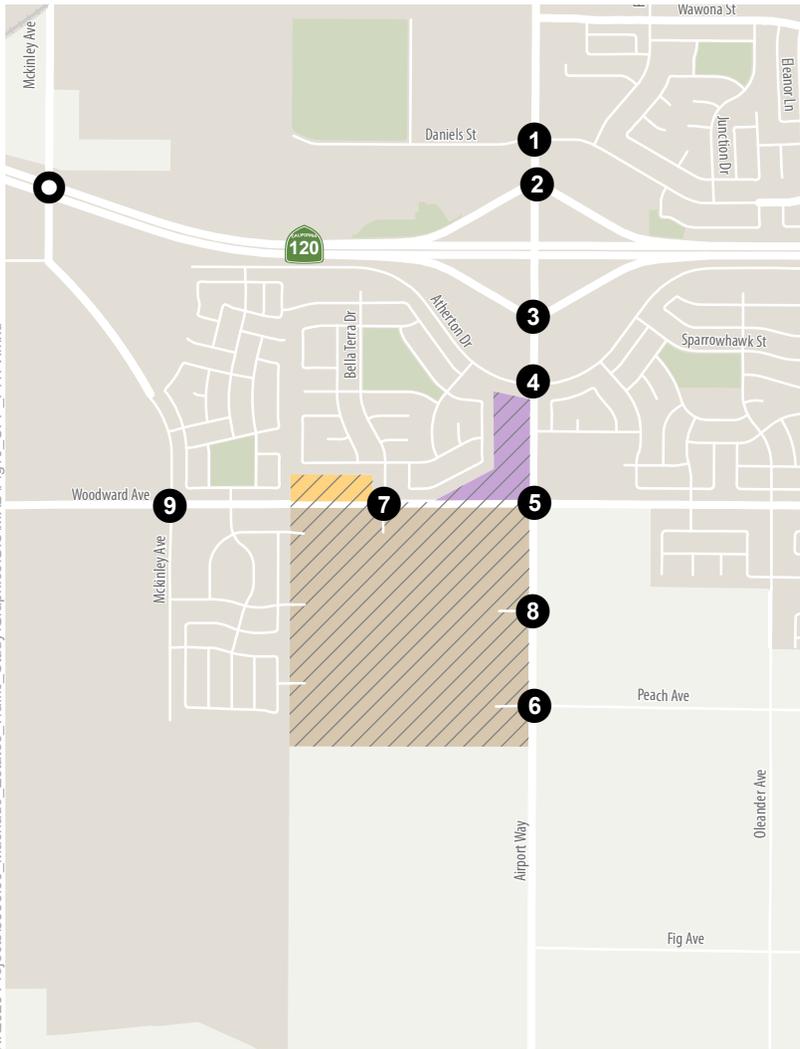
- Future Interchange
- Annexation Area
- Development Area
- Non-Development Area 1
- Non-Development Area 2
- Manteca City Limits



Figure 3.13-9
Cumulative Plus Project Conditions

This page intentionally left blank.

N:\2020 Projects\3996.00_Machado_Estates_Traffic_Study\Graphics\GIS\MXD\Fig10_CPP_PHTV.mxd



- Study Intersection
- Future Interchange
- Annexion Area
- Non-Development Area 1
- Development Area
- Non-Development Area 2
- Manteca City Limits
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Traffic Signal
- Roundabout
- Stop Sign

Figure 3.13-10

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project Conditions



This page intentionally left blank.

This section describes the regulatory setting, impacts associated with wastewater services, water services, storm drainage, and solid waste disposal that are likely to result from Project implementation, and measures to reduce potential impacts to wastewater, water supplies, storm drainage, and solid waste facilities. Information in this section is derived primarily from:

- *California's Groundwater, CalRecycle Solid Waste Information System, CalRecycle Jurisdiction Diversion/Disposal Rate Summary, Manteca Municipal Services Review (City of Manteca, 2008);*
- *City of Manteca General Plan Update (De Novo Planning Group, 2021)*
- *City of Manteca Urban Water Management Plan (Manteca, 2015);*
- *Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan (ESJCGA, 2019),*
- *San Joaquin Groundwater Basin Groundwater Management Plan, South County Surface Water Supply Project EIR (South San Joaquin Irrigation District [SSJID], 1999);*
- *South San Joaquin Irrigation District 2020 UWMP (SSJID, 2020)*
- *Water Master Plan (Manteca, 2005), Storm Drain Master Plan (Manteca, 2013) Wastewater Collection System Master Plan (Manteca, 2012);*
- *Wastewater Quality Control Facility Master Plan Update (Manteca, 2006), Draft Sewer Rate Study (Manteca, 2008); and*
- *Lumina Ranch Water Supply Assessment (West Yost, 2021).*

One comment was received during the public review period for the Notice of Preparation from the Central Valley Regional Water Quality Control Board (February 22, 2021).

3.14.1 WASTEWATER SERVICES

ENVIRONMENTAL SETTING

Wastewater service is provided by the City of Manteca via their network of collection infrastructure and the Wastewater Quality Control Facility (WQCF), which is located north of the Project site at 2450 West Yosemite Avenue. The WQCF provides services to the City of Manteca, City of Lathrop, and Raymus Village in San Joaquin County. The WQCF has a maximum average dry weather capacity of 9.87 million gallons per day (mgd).

Wastewater Conveyance

The City's sewer service area is contiguous with City limits, and is divided into north, south and central sewer sheds. The municipal wastewater collection system includes 242 miles of sewer mains and 19 pump stations (City of Manteca, 2017). The collection system includes gravity flow pipes ranging from 6-inch to 60-inch diameter, and force mains from 6-inch to 24-inch diameter.

The existing collection system generally serves the developed portions of the City, with major trunk sewers located in the core of the City (the central sewer shed), approximately bounded by State Route 120 to the south, Austin Road to the east, Lathrop Road to the north, and Airport Way to the west.

Wastewater Treatment

The WQCF is located southwest of downtown Manteca on 22-acres owned by the City. The WQCF treats municipal wastewater from the City of Manteca and the City of Lathrop, and seasonally accepts industrial food processing waste effluent from Eckert Cold Storage (Nolte, 2007). Per contractual agreement, 8.42 mgd of plant capacity is allocated to the City of Manteca and 1.45 mgd is allocated to the City of Lathrop (EDAW, 2007). The WQCF treats an average dry weather flow (ADWF) of about 7.2 mgd and had an original average dry weather design capacity of 9.87 mgd. However, historic water use reductions in the community combined with population growth have drastically increased the concentration of biological oxygen demand (BOD) and total Kjeldahl nitrogen (TKN) in the influent wastewater. This essentially makes the incoming wastewater higher strength and makes the overall biological and nitrogen loading on the plant higher even with lower wastewater flows. As a result of these changes, the actual plant capacity is limited by biological and nitrogen loading and equates to an influent flow capacity substantially less than 9.87 mgd. Since wastewater loading to the WQCF is directly related to the population served, independent of actual water flow, the total population planned to be served by the original Phase III expansion is unchanged due to the sewer strength issue. Development that occurred up through 2021 has used the Phase III capacity. In order to provide WQCF capacity for the growing population until the Phase IV expansion is completed, interim improvements are currently underway to improve plant operations which will provide temporary additional capacity. The facility's current NPDES permit is currently shared between the City and Dutra Farms, Inc. and is effective until April 2026 (CA RWQCB, 2021). The anticipated buildout ADWF within areas served by the WQCF was originally 27 mgd (EDAW, 2007) but may be adjusted downward in future wastewater master plans to account for higher sewer strength.

The City has been aware of historical reductions in water usage combined with population growth increasing the biological and nitrogen load at the WQCF since 2014 and has been working with engineers to monitor and plan for capacity needs under these changed conditions. Interim projects such as the Aeration Basin Efficiency projects completed in 2015 for the North Plant and 2019 for the South plant have improved the City's ability to treat the higher loadings in a reliable and more efficient manner. Other interim projects needed to treat the higher loadings until the Phase IV plant expansion is completed are currently being planned and developed. The City is starting the planning process for the Phase IV expansion and a new wastewater master plan in 2021. These proactive efforts ensure the City will be able to reliably treat the wastewater as the community expands its population up to and through the next plant expansion. The WQCF is an activated sludge tertiary treatment plant. The facility includes an influent pump station, and primary, secondary and tertiary treatment facilities. Primary treatment at the WQCF consists of aerated grit removal and primary sedimentation. Secondary treatment at the facility consists of nitrification and denitrification in activated sludge aeration basins and subsequent secondary sedimentation. Undisinfected secondary effluent is either stored for agricultural use in a 15-million-gallon pond or blended with food processing waste and applied directly on the agricultural fields owned by the City (126 acres) (CA RWQCB, 2021).

Secondary effluent not used for crop demands undergoes tertiary treatment, including rapid mixing, flocculation, cloth media filtration, and ultraviolet light (UV) disinfection. Treated tertiary effluent is either pumped to a truck fill station for construction vehicles to receive recycled water for construction purposes or discharged year-round through a 36-inch diameter pipe into the San Joaquin River (CA RWQCB, 2021). As the practice of discharging to fields is gradually phased out due to land development, effluent will increasingly be diverted to the River (City of Manteca, 2016).

The City is planning to expand the facility from the currently permitted 9.87 mgd to 27 mgd by buildout. The various WQCF facilities are designed to be expanded in phases, based on future growth. Proposed treatment improvements identified in the 2006 WQCF Master Plan Update include expansion of the primary, secondary, and tertiary treatment facilities, expansion of the solids handling systems and expansion of the co-generation system to generate electricity from methane produced during the treatment process (EDAW, 2007). Methane generation is no longer used to produce electricity and has now been converted to fueling City garbage trucks.

The WQCF recently completed expansions to the solids handling streams to provide increased capacity to meet permitted requirements and new State regulations. Improvements include new facilities for receiving Fats, Oils, and Greases (FOGs), and receiving food waste separated from the solid waste streams. The separation of these materials is required by State regulations and is anticipated to provide transportation fuel for City garbage trucks (City of Manteca, 2016). Because of high nitrogen loadings at the WQCF the City has paused directing food waste to the WQCF until sufficient nitrogen treatment capacity is in place at the WQCF.

Current and Projected Wastewater Flows

Historically, wastewater flows to the Manteca WQCF have increased as the population and commercial and industrial activity has grown. ADWF was 4 mgd in 1991, 5.81 mgd in 2003, and 6 mgd in December 2005 (EDAW, 2007). Since 2007, average daily influent flow to the WQCF has remained relatively constant, ranging from a low of 6.1 mgd (2008) to a high of 6.3 mgd (2011) (City of Manteca, 2017b). In 2020, the average annual wastewater flow was 7.2 mgd.

The 2006 WQCF Master Plan Update reported wastewater flow projections for the City of Manteca of 19.5 mgd by 2023 and 23 mgd by buildout (Nolte Associates, 2006). Projections were based on wastewater generation factors developed from historical studies, and developed based on different household densities for different residential land use categories. Assuming a similar level of development as anticipated in the 2006 WQCF Master Plan Update, future wastewater projections are anticipated to be lower than those estimated in the 2006 WQCF Master Plan Update because of existing and pending water use efficiency regulations that will reduce indoor water use and wastewater flows. This lower water usage effect has already been experienced by the City as noted above. According to the City's NPDES permit, current permitted average dry weather flow at the WQCF is 9.87 million gallons per day (MGD). Once the Phase IV expansion and other projects at the facility are completed, the average dry weather flow at the WQCF is permitted to be 17.5 MGD.

REGULATORY SETTING

Clean Water Act (CWA) / National Pollutant Discharge Elimination System (NPDES) Permits

The CWA is the cornerstone of water quality protection in the United States. The statute employs a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. These tools are employed to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water."

The CWA regulates discharges from "non-point source" and traditional "point source" facilities, such as municipal sewage plants and industrial facilities. Section 402 of the Act creates the NPDES regulatory program which makes it illegal to discharge pollutants from a point source to the waters of the United States without a permit. Point sources must obtain a discharge permit from the proper authority (usually a state, sometimes EPA, a tribe, or a territory). NPDES permits cover industrial and municipal discharges, discharges from storm sewer systems in larger cities, stormwater associated with numerous kinds of industrial activity, runoff from construction sites disturbing more than one acre, mining operations, and animal feedlots and aquaculture facilities above certain thresholds.

Permit requirements for treatment are expressed as end-of-pipe conditions. This set of numbers reflects levels of five key parameters: (1) biochemical oxygen demand (BOD), (2) total suspended solids (TSS), (3) pH acid/base balance, (4) Ammonia, and (5) Nitrate. These levels can be achieved by well-operated sewage plants employing "secondary" treatment with denitrification. Primary treatment involves screening and settling, while secondary treatment uses biological treatment in the form of "activated sludge." Denitrification uses the activated sludge process to remove nitrogen from the wastewater.

All so-called "indirect" dischargers are not required to obtain NPDES permits. An indirect discharger is one that sends its wastewater into a city sewer system, so it eventually goes to a sewage treatment plant. Although not regulated under NPDES, "indirect" discharges are covered by another CWA program called pretreatment. "Indirect" dischargers send their wastewater into a city sewer system, which carries it to the municipal sewage treatment plant, through which it passes before entering surface water.

The City's current NPDES Permit, which regulates the wastewater effluent quantity and quality upon discharge, was issued by the Central Valley Regional Water Quality Control Board and is Order R5-2021-0003 NPDES No. CA0081558.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act is California's statutory authority for the protection of water quality. Under the Porter-Cologne Act, the State is required to adopt policies, plans, and objectives that will protect the State's waters for the use by and enjoyment of Californians. In California, the State Water Resources Control Board (SWRCB) has the authority and responsibility

for establishing policy related to the State's water quality. Regional authority is delegated by the SWRCB to a Regional Water Quality Control Board (RWQCB). The Porter-Cologne Act authorizes the SWRCB and RWQCB to issue NPDES permits.

Under the Central Valley Regional Water Quality Control Board (CVRWQCB) NPDES permit system, all existing and future municipal and industrial discharges to surface water within the city would be subject to regulation. NPDES permits are required for operators of municipal separate storm sewer systems, construction projects, and industrial facilities. These permits contain limits on the amount of pollutants that can be contained in each facility's discharge.

City of Manteca General Plan

2023 GENERAL PLAN (EXISTING)

Policies: Sewer

- PF-P-18. Ensure wastewater collection and treatment for all development in the City and the safe disposal of wastes.
- PF-P-19. The City will maintain capacity to process combined residential, commercial, and industrial flow.
- PF-P-20. The City shall develop new sewage treatment and trunk line capacity as necessary to serve new development.
- PF-P-21. City sewer services will not be extended to unincorporated areas, except in extraordinary circumstances. Existing commitments for sewer service outside the city limits shall continue to be honored.
- PF-P-22. Development of individual septic systems may be allowed only where the City makes a finding that it cannot feasibly provide public sewer service, and such systems shall only be used until such time as City sewer service becomes available. Such systems shall meet the minimum standards of the San Joaquin County Health Department.
- PF-P-23. The City shall establish and maintain a growth management plan to ensure the development of a balanced mix of residential, commercial, industrial, and public land uses.
- PF-P-24. Ensure that all new development provides for and funds a fair share of the costs for adequate sewer distribution, including line extensions, easements, and plant expansions.
- PF-P-25. The City will maintain the ability to handle peak discharge flow while meeting State Regional Water Quality Control Board Standards as established in the current NPDES Permit.

Implementation: Sewer

- PF-I-8. The City shall update the Public Facilities Implementation Plan regarding wastewater collection and treatment every five years. The update shall be reviewed annually for adequacy and consistency with the General Plan.
- PF-I-9. The City will require all sewage generators within its service area to connect to the City's system, except those areas where on-site treatment and disposal facilities are deemed appropriate.

3.14 UTILITIES

- PF-I-11. The City will investigate methods of improving the quality of the effluent from the City plant and will investigate options for reuse of treated wastewater. The recycled wastewater will be used for irrigation of public recreation lands, restoration of wetland areas, and irrigation of landscaped areas.
- PF-I-12. The City will promote reduced wastewater system demand through efficient water use by:
 - requiring water conserving design and equipment in new construction,
 - encouraging retrofitting with water conserving devices,
 - designing wastewater systems to minimize inflow and infiltration to the extent economically feasible; and
 - maintaining a Citywide map of all sewer collection system components and monitoring the condition of the system on a regular basis.

Policies: Water Conservation

- RC-P-1. The City shall continue to implement water conservation standards for all commercial and industrial development, and for all existing and new residential development.
- RC-P-2. The City shall explore potential uses of treated wastewater when such opportunities become available.
- RC-P-3. The City shall protect the quantity of Manteca's groundwater.
- RC-P-4. The City shall require water conservation in both City operations and private development to minimize the need for the development of new water sources.

Implementation: Water Conservation

- RC-I-1. Continue to implement standards for water conserving landscape practices, including the use of drought tolerant plants, for both public and private projects.
- RC-I-2. Continue efforts to increase public participation in water conservation.
- RC-I-4. Cooperate with other agencies and jurisdictions to expand water conservation programs, and to develop methods of water reuse.
- RC-I-5. Actively pursue the use of treated wastewater in irrigation and industrial applications, including development of appropriate infrastructure.

GENERAL PLAN UPDATE (PROPOSED)

Policies: Community Facilities Element

- CF-7.1. Ensure adequate wastewater collection and treatment infrastructure to serve existing and future development and the safe disposal of wastes.
- CF-7.2. Develop new sewage treatment and trunk line capacity as necessary to serve new development. The City shall incorporate current technologies into the design and operation of these facilities.
- CF-7.3. Only extend sewer services to unincorporated areas under extraordinary circumstances. Existing commitments for sewer service outside the city limits shall continue to be honored.

- CF-7.5. Maintain the ability to handle peak discharge flow while meeting State Regional Water Quality Control Board Standards as established in the current NPDES Permit.
- CF-7.6. Maintain the existing wastewater system on a regular basis to increase the lifespan of the system and ensure public safety.

Implementation: Community Facilities Element

- CF-7a. Update the Public Facilities Implementation Plan regarding wastewater collection and treatment every five years. The update shall be reviewed annually for adequacy and consistency with the General Plan.
- CF-7b. Require new development to provide for and fund a fair share of the costs for adequate sewer distribution, including line extensions, easements, and plant expansions.
- CF-7c. Require all sewage generators within the City's service area to connect to the City's system, except those areas where on-site treatment and disposal facilities are deemed appropriate.
- CF-7e. Investigate methods of improving the quality of the effluent from the City wastewater treatment plant and options for reuse of treated wastewater. The recycled wastewater will be used for irrigation of public recreation lands, restoration of wetland areas, irrigation of landscaped areas, dust control, fire protection, and soil compaction.
- CF-7f. Promote reduced wastewater system demand through efficient water use by:
 - Requiring water conserving design and equipment in new construction,
 - Encouraging retrofitting with water conserving devices,
 - Designing wastewater systems to minimize inflow and infiltration to the extent economically feasible; and
 - Maintaining a Citywide map of all sewer collection system components and monitoring the condition of the system on a regular basis.

City of Manteca Municipal Code

The City of Manteca Municipal Code, Title 13 (Public Services) Chapter 13.12 (Sewer Connection Charges), Chapter 13.14 (Sewer Capacity Charges), and Chapter 13.16 (Sewer Service Charges) contain regulations associated with sewer management.

Title 13 (Public Services), Chapter 13.38 (Public Facilities Implementation Program Fees), Section 13.38.050 (Establishment of a Sewer Fee) requires developers of property to pay a sewer facility development fee.

Utility Master Plans

The City of Manteca maintains a variety of Master Plan documents that guide the design, development, and maintenance of the utilities within the city limits. These include: *Urban Water Management Plan* (2015), *Water Master Plan* (2005), *Storm Drain Master Plan* (2013) *Wastewater Collection System Master Plan* (2012), *Wastewater Quality Control Facility (WQCF) Master Plan Update* (2006), *Draft Sewer Rate Study* (2008). This City is planning to start the next WQCF and Sewer Master Plan and Rate Study in 2021.

Order R5-2021-0003 NPDES NO. CA0081558

The NPDES permit program addresses water pollution by regulating point sources that discharge pollutants to waters of the United States. Created in 1972 by the Clean Water Act, the NPDES permit program is authorized to state governments by the EPA to perform many permitting, administrative, and enforcement aspects of the program. The City of Manteca WQCF is subject to waste discharge requirements under Order R5-2021-0003 NPDES NO. CA0081558 by the Regional Water Quality Control Board.

THRESHOLDS OF SIGNIFICANCE

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

- Require or result in the relocation or construction of new or expanded wastewater facilities, the construction or relocation of which could cause significant environmental effects; and/or
- Result in a determination by the wastewater treatment provider which serves or may serve the Project that it does not have adequate capacity to serve the project's projected demand in addition to the providers existing commitments.

IMPACTS AND MITIGATION MEASURES

Impact 3.14-1: The proposed Project would not result in a determination by the wastewater treatment provider which serves or may serve the Project that it does not have adequate capacity to serve the project's projected demand in addition to the providers existing commitments (Less than Significant)

WASTE DISCHARGE REQUIREMENTS (WDRs) BOARD ORDER NUMBER No R5-2021-0003 (NPDES PERMIT No. CA0081558).

The City of Manteca owns and operates a wastewater collection, treatment, and disposal system, and provides sanitary sewerage service to the City of Manteca and a portion of the City of Lathrop. On February 18, 2021, the RWQCB adopted Waste Discharge Requirements Order No. R5-2021-0003 NPDES NO. CA0081558, prescribing waste discharge requirements for the City of Manteca WQCF and allowing expansion of the plant up to 17.5 mgd.

The Manteca WQCF is an activated sludge plant with denitrification. The WQCF consists of an influent pump station, aerated grit tanks, primary sedimentation basins, fine-bubble activated sludge aeration basins, secondary clarifiers, secondary effluent equalization pond, tertiary filters, UV disinfection and effluent pumping station. Secondary effluent is land applied during the spring and summer. Tertiary filtered and UV disinfected water is discharged to the San Joaquin River during the winter.

The 2006 Wastewater Master Plan Update projected a capacity requirement of 27 mgd ADWF at buildout for the WQCF at buildout. Expansion of the WQCF to buildout would occur in multiple phases, which would increase the ADWF capacity to 17.5 mgd, then to 27 mgd. The Wastewater Master Plan projected a potential reclaimed water use of 3.28 mgd. The 2005 Urban Water Management Plan projected a reclaimed water usage of 2 mgd by 2030. All of these flows may be adjusted based on historical reductions in water usage as part of a new Wastewater Master Plan which will start in 2021 and finish in 2023.

According to the City’s 2012 Wastewater Collection System Master Plan Update, Low Density Residential uses are estimated to generate 1,338 gallons per acre per day or 160 gallons per day per equivalent dwelling unit (edu). The Project site includes 827 Residential Lots of Low Density Residential. Using this rate, the proposed Low Density Residential uses would generate approximately 132,320 gallons per day of wastewater. The Project does not propose to develop the non-development area of the project site; however, the Project will provide sewer points of connection for the 14 non-development parcels which will generate approximately 16,109 gallons per day (gpd) for a total sewer discharge of 148,429 gpd. The following list provides the anticipate sewer discharge from the respective non-development parcels based and the proposed land uses:

- Project Site (827 edu) – LDR – Generation Factor 160 gpd/edu = 132,320 gpd
- 241-320-05 (1.00 ac) – LDR – Generation Factor 265 gpd/edu = 265 gpd
- 241-320-06 (1.00 ac) – LDR – Generation Factor 265 gpd/edu = 265 gpd
- 241-320-07 (1.00 ac) – LDR – Generation Factor 265 gpd/edu = 265 gpd
- 241-320-21 (1.00 ac) – LDR – Generation Factor 265 gpd/edu = 265 gpd
- 241-320-08 (1.00 ac) – LDR – Generation Factor 265 gpd/edu = 265 gpd
- 241-320-09 (1.00 ac) – LDR – Generation Factor 265 gpd/edu = 265 gpd
- 241-320-23 (1.34 ac) – C – Generation Factor 750 gpd/ac = 1,005 gpd
- 241-320-27 (1.49 ac) – C – Generation Factor 750 gpd/ac = 1,118 gpd
- 241-320-28 (1.51 ac) – C – Generation Factor 750 gpd/ac = 1,133 gpd
- 241-320-29 (1.49 ac) – C – Generation Factor 750 gpd/ac = 1,118 gpd
- 241-320-15 (1.35 ac) – C – Generation Factor 750 gpd/ac = 1,013 gpd
- 241-320-14 (1.35 ac) – C – Generation Factor 750 gpd/ac = 1,013 gpd
- 241-320-13 (1.35 ac) – CMU – Generation Factor 2,473 gpd/ac = 3,339 gpd
- 241-320-12 (1.37 ac) – CMU – Generation Factor 2,473 gpd/ac = 3,388 gpd
- 241-320-11 (1.86 ac) – C – Generation Factor 750 gpd/ac = 1,395 gpd
- **Total discharge = 148,429 gpd**

The proposed Project would increase the amount of wastewater requiring treatment. The wastewater would be treated at the WQCF. Occupancy of the proposed Project would be prohibited without sewer allocation.

The City of Manteca’s wastewater treatment system is currently in compliance with the WDR requirements of Order No. R5-2021-0003 NPDES NO. CA0081558. The projected flows of the proposed Project are not expected to exceed the treatment capacity available for treatment. Full buildout of the proposed Project would slightly increase the existing treatment demand at the

3.14 UTILITIES

WQCF. As described above, the City must also periodically review and update their WQCF Master Plans, and as growth continues to occur within the City, the City will identify necessary system upgrades and capacity enhancements to meet growth, prior to the approval of new development.

The City's Existing General Plan designated the Development Area as LDR and Park and therefore anticipated development and potential annexation into the City. Given that projected wastewater generation volumes associated with the buildout of the Development Area would not exceed the projected wastewater generation volumes described in the WQCF Master Plan, this impact would be **less than significant**, and no mitigation is required.

Impact 3.14-2: The proposed Project would not require or result in the relocation or construction of new or expanded wastewater facilities, the construction or relocation of which could cause significant environmental effects (Less than Significant)

As Manteca continues to develop in the future, there will be an increased need for water and wastewater services, including a reliable source of recycled water. These needs have been addressed in the WQCF master plan and will require that the City continue to implement phased improvements to some pump stations, sewer mains, and the various wastewater treatment plants when triggered by growth.

The overall collection sewer strategy for the City of Manteca, including the proposed Project, consists of a combination trunk sewer gravity collection system with pump or lift stations located along the collection system to convey wastewater to an influent pump station located at the City WQCF. The South Manteca Collection Shed (SMCS) both collect flows from areas where future growth is expected. The Central Manteca Collection Strategy (CMCS) connects the existing collection system to the SMCS.

The Development and Non-Development Areas are located within the SMCS. The backbone of the SMCS is the South Manteca Trunk Sewer (SMTS) along Woodward Avenue. Existing facilities for conveying effluent from the South Manteca Collection Area include:

1. The existing 36-inch trunk sewer facility in Woodward Avenue which extends to Galleria Drive.
2. The existing 54-inch and 60-inch truck sewer facilities that extend north from Woodward Avenue and traverses the existing Dutra Estates Subdivision, highway 120, and the future Family Entertainment Zone eventually connecting to the existing WQCF.

Wastewater from the Project site will be collected and conveyed via a network of gravity flow sewer main lines serving the development. An internal pipe collection system having various diameters will be installed within the Project site. These future on-site effluent collection facilities will discharge into the City system at various locations. The Development and Non-Development Areas would be served by a new wastewater distribution system. The proposed wastewater conveyance facilities would connect to the existing 36-inch sewer main in Woodward Avenue as part of the City of

Manteca collection and treatment system. The proposed Project will also construct a new 12-inch sewer main in Airport Way to extend the existing City of Manteca collection and treatment system.

The wastewater collection and conveyance system that will serve the proposed Project will consist of engineered infrastructure consistent with the City's existing infrastructure requirements. Sizing of existing infrastructure in the City varies based on location, but generally includes gravity sewers and force mains ranging in size from 8 to 24 inches, and pump stations. The existing facilities have undergone environmental review and have waste discharge permits from the State.

New wastewater collection and conveyance infrastructure needed for the proposed Project will require trenching/excavation of earth, and placement of pipe within the trenches at specific locations, elevations, and gradients. The applicant will refine the wastewater collection/conveyance infrastructure design through the development of improvements plans which undergo review by the Public Works Department to ensure consistency with the City's engineering standards. This improvement plan process will include full engineering design (i.e. location, depth, slope, etc.) of all conveyance infrastructure as well as a review of new sewer pump stations and new force mains if needed. Ultimately, the sanitary sewer collection system will be an underground collection system installed as per the City of Manteca standards and specifications. Sanitary sewer disposal and treatment will be to the City of Manteca WQCF.

The installation of the wastewater collection and conveyance system infrastructure to serve the proposed Project would have a **less than significant** impact relative to this topic. The wastewater treatment plant would not require upgrades or improvements in order to serve the proposed Project. Implementation of the proposed Project would have a **less than significant** impact relative to this topic.

3.14.2 WATER SUPPLIES

The following information is based on the *Lumina Ranch Water Supply Assessment* (West Yost Associates, 2021), which is included as Appendix G of this Draft EIR, and the Public Review Draft EIR for the Manteca General Plan Update (March 2021).

ENVIRONMENTAL SETTING

City of Manteca Water Service Area

The Project site is located adjacent to the Manteca city limits and within the Manteca Sphere of Influence (SOI). The City is located in the flat plain at the northern end of California's San Joaquin Valley in south San Joaquin County. The City is located approximately 10 miles south of Stockton and 15 miles north of Modesto. Rich agricultural lands abut Manteca on the north, east, and south, while areas to the west are used primarily for industry. The Southern Pacific Railroad cuts the City diagonally from southeast to northwest. State Highway 120 crosses the southern portion of the City and provides a connection between Interstate 5, located about four miles to the west of the City, and Highway 99 along the eastern boundary of the City. This location creates a good setting for Bay Area commuter housing, as well as new commercial and industrial locations.

The City's water service planning area corresponds with the City SOI established in the City's 2023 General Plan. The 2023 General Plan includes a designation of area planned to be developed by 2023. The City's current water distribution service area coincides with the City limits. It is assumed that the City's water distribution system will extend to areas within the SOI beyond the existing City limits as those areas are approved for development and annexed into the City.

Presently, the City limits encompass an area of about 13,746 acres. The total existing developed land is made up of approximately 64 percent residential land uses, 18 percent commercial, industrial, and institutional land uses, and 18 percent agriculture, parks, landscape, and other land uses. Water demands not served by the City (e.g., agriculture, schools) rely on private groundwater wells and the South San Joaquin Irrigation District (SSJID) groundwater for their supply.

Current and Projected Population

Between 1980 and 2020 the City experienced an average annual population growth rate of 3.1 percent, from 24,925 persons in 1980 to 84,800 persons in 2020. During this period, peak population growth occurred between 1980 and 1990 with an average growth rate of over 5 percent. Recent population growth since 2010 has averaged about 2.4 percent per year.

By comparison, the City's boundary area has grown from about 6,300 acres in 1990 to about 13,400 acres in 2015, an annual average area growth rate of about 3.1 percent. The greatest growth in area occurred between 1990 and 2000. Since 2000, the City's area has grown about 1.8 percent per year.

For purposes of this WSA, the City elected to use the 1980-2020 average annual population growth rate of 3.1 percent to project the population of the water service area through 2045. It is assumed

that this population growth includes population acquired through City annexations of the surrounding area, as well as City infill development. The current and projected water service area populations for the City are summarized in **Error! Reference source not found.** of the Water Supply Assessment. According to California Department of Finance, the City’s population in 2020 was 84,800, and by 2045 it is anticipated to increase to 182,354.

Climate

Climate and precipitation information are described in the City’s 2015 UWMP. The City experiences hot summer temperatures with many days over 100°F during July and August. Nighttime temperatures during July and August drop into the fifties. The winter temperatures are much colder, with daytime highs in the forties and fifties. Winter lows are in the thirties and forties. Overnight freezes are infrequent. Spring and fall provide moderate temperature ranges. The mean annual precipitation is 14 inches. A greater quantity of water is evaporated during May through August in correlation to high temperatures and low humidity, which results in high water demand for landscape irrigation.

City of Manteca Water Demands

City potable and raw water demand in 2020 was approximately 16,253 AF, which may have been caused by a higher daytime population than normal due to stay-at-home orders and mandated closure of non-essential businesses in response to the COVID-19 pandemic.

The projected water demand for future land use area for the buildout of the General Plan areas, which includes the Proposed Project in the City’s General Plan Update, was calculated by multiplying the projected land uses by the unit water demand factor. The resulting water demand projection was 17,971 AFY.

Therefore, the projected potable and raw water demand at buildout of the General Plan is 34,224 AFY (16,253 AFY existing plus 17,971 AFY projected). Buildout of the General Plan planning area is projected to occur shortly before 2050.

The City’s existing and projected potable and raw water demand is shown in Table 3.14-1. The 2020 data reflect actual 2020 demand. The projected water demands shown in Table 3.14-1 will be used throughout this WSA.

TABLE 3.14-1: EXISTING AND PROJECTED TOTAL WATER DEMAND IN NORMAL YEARS, AFY

	2020, CURRENT	2025	2030	2035	2040	2045
Total Water Demand	16,253	18,480	21,012	23,891	27,164	30,885

SOURCE: 2020 WATER DEMAND PER CITY OF MANTECA, PROJECTED GROWTH FROM WEST YOST

The City’s projected water demand at buildout (based on existing water demand and buildout of the General Plan Update, and the projected water demand of the Proposed Project) is summarized in Table 3.14-2. The City’s preliminary water demand projections for future developments with approved water supply, as of March 2021, have been updated by West Yost to be based on water

3.14 UTILITIES

use factors that were adjusted for SB X7-7 (see Table 2-2 in the WSA). These revised demand projections for future developments within the City are included in Appendix A of this WSA.

TABLE 3.14-2: CITY OF MANTECA PROJECTED BUILDOUT WATER DEMAND, AFY

<i>PROPOSED LAND USE</i>	<i>AREA, ACRES(A)</i>
Existing 2020 Water Demand	16,253
2040 General Plan Horizon Water Demand ¹	10,911
2045 Water Demand ²	3,721
Buildout of General Plan ³	3,339
Total Water Demand	34,224

SOURCES: 2020 WATER DEMAND PER CITY OF MANTECA, PROJECTED GROWTH FROM WEST YOST, CITY OF MANTECA GENERAL PLAN WATER SUPPLY REPORT. FEBRUARY 2021

Notes: ¹2040 General Plan Horizon Water Demand represents incremental increase in water demand beyond existing demand.

²2045 Water Demand represents incremental increase in water demand beyond existing and 2040 General Plan demand.

³General Plan Buildout represents incremental increase in water demand beyond the existing, 2040 General Plan, and 2045 water demand.

DRY YEAR WATER DEMAND

The City currently has a water conservation program in place, as described in Chapter 8 of the City's 2015 UWMP. The City's Water Shortage Contingency Plan includes a five-stage plan describing water conservation measures to reduce water demand by up to 50 percent in the event of a water supply shortage or emergency. The water shortage stages, and their respective anticipated reduction in potable water demand, are shown in 3.14-3.

TABLE 3.14-3: WATER SHORTAGE CONTINGENCY PLAN PROJECTED DEMAND REDUCTION

<i>STAGE</i>	<i>PERCENT SUPPLY REDUCTION</i>
I	Up to 10 percent
II	11 – 20 percent
III	21 – 30 percent
IV	31 – 40 percent
V	41 – 50 percent

SOURCE: CITY OF MANTECA 2015 UWMP, TABLE 8-1 STAGES OF WSCP

When comparing potable water supply to demand in the City's 2015 UWMP and in this WSA, the dry year water demands are assumed to not include implementation of the City's Water Shortage Contingency Plan. This is a conservative assumption as additional water conservation will likely occur as a result of the City's implementation of its Water Shortage Contingency Plan in response to dry years or other water supply shortages. Table 3.14-4 presents the projected future dry year potable water demand.

TABLE 3.14-4: PROJECTED FUTURE DRY YEAR POTABLE AND RAW WATER DEMAND

HYDROLOGIC CONDITION	DEMAND REDUCTION ^(A)	2020	2025	2030	2035	2040	2045
Single Dry Year, AFY	0	16,253	18,480	21,012	23,891	27,164	30,885
Multiple Dry Year 1	0	16,253	18,480	21,012	23,891	27,164	30,885
Multiple Dry Year 2	0	16,253	18,480	21,012	23,891	27,164	30,885
Multiple Dry Year 3	0	16,253	18,480	21,012	23,891	27,164	30,885
Multiple Dry Year 4	0	16,253	18,480	21,012	23,891	27,164	30,885
Multiple Dry Year 5	0	16,253	18,480	21,012	23,891	27,164	30,885

^A Conservatively assumes no demand reduction in dry years.

WATER SUPPLIES

Surface Water Supply

The principal component of future water supply for the City is deliveries from the SCWSP. The City, along with three other cities/retail water suppliers (Escalon, Lathrop, and Tracy), signed water supply agreements with SSJID to supply treated potable water to the participating cities.

The Nick C. DeGroot Water Treatment Plant (WTP) is commissioned for the SCWSP and is currently operated by SSJID. The WTP has a total Phase 1 capacity of 31,522 AFY and the Phase 2 capacity is anticipated to be 43,090 AFY. Phase 2 has not yet been implemented but is expected by 2040, according to the SSJID 2020 UWMP. Currently, the City is allotted 11,500 AFY under Phase 1 and 18,500 AFY under Phase 2. The term of the City's water supply agreement with SSJID is through December 2029. The City and SSJID signed a new contract to extend this contract through 2049. Historically, the City has not utilized its full allocation of surface water due to system constraints and State and SSJID supply limits in response to the drought conditions.

Groundwater Supply

BASIN DESCRIPTION

The City's wells are located in the Eastern San Joaquin (ESJ) Subbasin, which is a subbasin of the San Joaquin Valley Groundwater Basin. The groundwater aquifers underlying the City have been identified to include four geologic formations. In increasing depth from the surface, the identified aquifers are Victor Formation, Laguna Formation, Mehrten Formation, and Valley Springs Formation. Due to the alluvial generation of these aquifers, there is significant variation in grain size, with lenses and strata of high yield gravel, permeable sandy material and lower permeability clays. In general, the strata slope from the hills east of the City downward to the west, providing good recharge from hill runoff as well as from the Stanislaus River. The City's wells primarily withdraw water from the Laguna and Victor Formations.

3.14 UTILITIES

The basin is not adjudicated; however, a basin management plan has been created. The Eastern San Joaquin Groundwater Basin Groundwater Management Plan (ESJGB-GMP) (NSJCGB, 2004) was prepared in September 2004. According to Department of Water Resources (DWR) Bulletin 118 (DWR, 2006), the ESJ Subbasin is in a critical condition of overdraft¹. Groundwater levels have been historically declining at an average rate of 1.7 feet per year. Groundwater overdraft in the overall basin and the City's groundwater withdrawal rate is of vital concern to the City as this poses a long-term risk to the reliability of the groundwater supply.

In 2014, the Sustainable Groundwater Management Act (SGMA) was signed into law to provide a framework for management of groundwater supplies by local agencies and restricts state intervention, if required. SGMA provides an opportunity for local agencies overlying the basin to form a Groundwater Sustainability Agency (GSA), which is the primary agency responsible for achieving sustainability. As part of the region's compliance with SGMA, the Eastern San Joaquin Groundwater Authority was formed in 2017, and includes representatives from Calaveras County Water District / Stanislaus County, California Water Service Company, Central Delta Water Agency, Central San Joaquin Water Conservation District, City of Lathrop, City of Lodi, City of Manteca, City of Stockton, Linden County Water District, Lockeford Community Services District, North San Joaquin Water Conservation District, Oakdale Irrigation District, San Joaquin County, South Delta Water Agency, South San Joaquin Groundwater Sustainability Agency, Stockton East Water District, and the Woodbridge Irrigation District GSA. This GSA adopted a Groundwater Sustainability Plan (GSP) in late 2019, because the Eastern San Joaquin Groundwater Subbasin has been identified as being in a state of critical overdraft and is considered a high priority. Two projects for the City that were identified in the GSP are the implementation of AMI, mentioned above, and the transfer of recycled water to agricultural uses to offset groundwater pumping.

GROUNDWATER PRODUCTION

According to the City's 2015 UWMP, the sustainable yield of the groundwater basin was estimated in the 2019 GSP² to be approximately 1 acre-foot per acre per year (715,000 AFY plus or minus 10 percent over the subbasin area of 1,195 square miles, an average of 0.935 AF/acre). In 2005, the City began receiving treated surface water from SCWSP and the City has had limited groundwater pumping since the implementation of the SCWSP. Although groundwater pumping in some years prior to 2005 has exceeded that rate, as part of the SCWSP, the City intends to limit groundwater pumping to that rate or less. Projected groundwater availability is therefore based on an assumption that up to 1 AFY of groundwater is available per acre of City service area.

The total groundwater pumping that occurs within the City boundaries include City-owned municipal wells and City-owned park irrigation wells, in addition to irrigation and domestic wells owned and operated by others. This section provides a summary of the estimated groundwater pumping that occurs

¹ The Eastern San Joaquin County Groundwater Subbasin was confirmed to be in critical condition of overdraft in the DWR Bulletin 118 Interim Update 2016.

² "Eastern San Joaquin County Groundwater Subbasin. Groundwater Sustainability Plan." Eastern San Joaquin Groundwater Authority, November 2019.

within the current City limits and planning area. According to the City's 2015 UWMP, groundwater pumping data collection is on-going and there are potentially many groundwater pumping wells that are unmetered and unidentified.

City-Produced Groundwater

The City currently (2021) owns and operates 17 potable water wells and 31 irrigation wells. The City's annual potable groundwater production has steadily increased historically, reaching a peak of 14,900 acre-feet (AF) in 2004. Commissioning of the surface water treatment plant in 2005 decreased groundwater use considerably and currently supplies an average of 52 percent of the City's annual potable water supply. Since 2005, the City has constructed dedicated irrigation wells at many parks in an effort to reduce potable demand, which requires wellhead treatment at many wells for arsenic and other constituents to meet drinking water standards. In 2000, the City pumped about 1.2 AFY/acre, but has since decreased pumping to about 0.7 AFY/acre in 2010 and to about 0.5 AFY/acre in 2015. When the City annexes new areas, the safe yield remains unchanged; however, the volume of available groundwater increases with the annexation of land into the City. However, the 1 AFY/acre does not provide sufficient water supply for most projects.

Pumping by Others

Because there are numerous wells not owned by the City that are drawing from the ESJ Subbasin, this pumping could affect the amount of groundwater available to the City within the groundwater basin safe yield. Wells currently in operation not owned by the City include private domestic wells, agricultural wells, wells for school irrigation owned by the Manteca Unified School District (MUSD), and irrigation wells owned by SSJID, among others. Well completion reports obtained from DWR suggest that approximately 1,000 water wells have been constructed within the General Plan area since record keeping began in the 1960s; however, many may not have been registered as abandoned. It is anticipated that most domestic wells are no longer in use, though further investigation would be needed to verify this assumption.

It is known that MUSD and others own and operate wells within the City and its planning area. It is also assumed that pumping by MUSD and other known pumpers within the City and its planning area should be included in the groundwater safe yield accounting for purposes of this evaluation. Groundwater pumping by others may also be included in future updates of this initial estimate.

Metered pumping records for MUSD have not been provided. The MUSD is assumed to irrigate 25 percent of its parcels at 4 AFY/acre. According to the City's 2015 UWMP, the groundwater pumping from other ESJ entities were estimated as follows:

- Given that the MUSD has approximately 500 total acres, the total annual water use is estimated at approximately 500 AFY.
- According to SSJID pumping records for 2010 through 2015, an average of 4,860 AFY groundwater was pumped from SSJID-leased wells. Of this, an average of 2,860 AFY was pumped within the City of Manteca and the City's Planning Area. Therefore, groundwater pumping from SSJID-leased wells is projected to be 2,860 AFY.

3.14 UTILITIES

- Other known industrial groundwater pumpers include Eckerts Cold Storage. The City treats over 130 AF of wastewater produced by Eckerts each year. Based upon this average, groundwater pumping is estimated at 150 AFY assuming a return-to-sewer ratio of approximately 85 percent.

HISTORICAL GROUNDWATER PUMPING

Historically, the City extracted groundwater at a rate as high as 1.6 AFY/acre, based on the developed City area. As discussed previously, the SCWSP allowed the City to reduce local groundwater extraction to less than the estimated basin safe yield of 1 AFY/acre.

Since 2006, after the commissioning of the SCWSP, the total groundwater pumping for the City of Manteca has ranged from 8,062 AFY to 10,374 AFY averaging about 8,700 AFY. Pumping amounts were generally consistent over the years 2011 to 2015, with a decrease in 2014 and 2015, likely attributable to statewide mandatory demand reduction regulations. With this exception, there were no limitations or challenges for obtaining groundwater during the last 5 years, and the available groundwater quantity was sufficient. Groundwater pumping by City wells from 2011 to 2015 is summarized in Table 3.14-5.

TABLE 3.14-5: HISTORICAL GROUNDWATER PRODUCTION

	2011	2012	2013	2014	2015
Groundwater Supply, AFY	9,156	10,374	9,922	6,546	7,249

SOURCE: CITY OF MANTECA 2015 UWMP

Potable Water Supply Availability and Reliability

The City's surface water and groundwater supply reliability as described in the City's 2015 UWMP is summarized below.

SURFACE WATER RELIABILITY

SSJID has existing agreements to provide surface water to agricultural interests, federal and state agencies, and cities in the south San Joaquin area. Some of these agreements are long-term, while others are as short as one week for agricultural deliveries.

Surface water reliability is in part reliant on storage and releases from upstream dams along the Stanislaus River with respect to the Nick C. DeGroot WTP intake location. While SSJID has surface water rights to approximately 600,000 AFY jointly held with the Oakdale Irrigation District (OID), the full allocation to SSJID and OID is subject to runoff from the Stanislaus River and other constraints per the 1988 Stipulation and Agreement with the U.S. Bureau of Reclamation that constructed and operates New Melones Reservoir on the Stanislaus River.

According to the 1988 Agreement, SSJID is entitled to 300,000 AFY during normal water years, however drought conditions and seasonal variations have the potential to reduce the allocation to SSJID and the contracted cities it delivers water to, including the City. The New Melones Reservoir

inflow has a direct effect on surface water availability to SSJID. The following equation governs water supply availability to SSJID when inflows are less than 600,000 AF:

$$\text{New Melones Inflow} + [(600,000 - \text{New Melones Inflow}) / 3]$$

Currently, SSJID is expected to provide total supplies (including irrigation and potable) ranging from 225,000 AFY to 300,000 AFY, though the lowest supply on record was 225,000 AF in both 2014 and 2015 (2015 UWMP). In the event that shortages do occur, SSJID and OID share the deficiencies equally.

As mentioned in Section 6.2, the City is allotted 11,500 AFY from SSJID under Phase 1 and a total of 18,500 AFY under Phase 2. It is anticipated that SSJID will implement Phase 2 of the SCWSP by 2040, providing an additional 7,000 AFY in surface water supply to the City.

Reliability of SCWSP Deliveries

Under single year and multiple year dry period scenarios, deliveries to the City by SSJID could be reduced. The availability and reliability of the City's SCWSP surface water deliveries during dry years according to SSJID's 2020 UWMP are described below:

- For Single Dry Year reliability, the City has based its projected SSJID allocations on the single driest hydrologic year (Year 1977). With this assumption, it is anticipated that the City will receive between 79 and 100 percent of its normal year water supply during a single dry year.
- For Multiple Dry Years reliability, the City has based its projected SSJID allocations on the most recent five-year multiple dry year hydrologic cycle (Year 2012 through 2016). With this assumption, it is anticipated that the City will receive 100 percent of its normal year water supply during the first, second, and fifth years of a multiple dry year scenario and between 79 percent and 100 percent of its normal year supply during the third and fourth years of a multiple dry year scenario.

In December 2018, the SWRCB released an updated Water Quality Control Plan for the San Francisco Bay/Sacramento San Joaquin Delta Estuary with significant changes to the previous Bay Delta Water Quality Control Plan. The updated plan (Bay-Delta Plan Amendment) requires releases of approximately 40 percent of what would naturally flow in watersheds tributary to the San Joaquin River (including the Stanislaus River) during the February to June period. This means that surface water users on those watersheds would be restricted from using and storing water until 40 percent of unimpaired flows are rededicated for water quality and instream fishery purposes. For the Stanislaus River, the resulting surface water cutbacks would be significant. Because over a dozen lawsuits have been filed in both state and federal courts, the SSJID 2020 UWMP indicates that SSJID has opted to make no near-term planning assumptions related to the implementation of the Bay-Delta Plan Amendment for the purposes of its 2020 UWMP. Should conditions change or consequential resolution of the issues come to be, SSJID indicates it will revise and re-adopt a 2020 UWMP to reflect changes to its impacted water supply.

The projected surface water deliveries available to the City through 2045 as derived from the SSJID 2020 UWMP, are presented in Table 3.14-6. The City's 2020 UWMP is in progress and the water,

3.14 UTILITIES

sewer, recycled water, and stormwater master plans will be updated within the next one to two years.

TABLE 3.14-6: SCWSP SURFACE WATER DELIVERIES TO THE CITY OF MANTECA DURING HYDROLOGIC NORMAL, SINGLE DRY, AND MULTIPLE DRY YEARS, AFY

	2025	2030	2035	2040	2045
Normal Year(a)	11,500	11,500	11,500	18,500	18,500
Single Dry Year	9,649	10,566	11,483	14,592	15,671
Multiple Dry Year 1	11,500	11,500	11,500	18,500	18,500
Multiple Dry Year 2	11,500	11,500	11,500	18,500	18,500
Multiple Dry Year 3	9,649	10,566	11,483	14,592	15,671
Multiple Dry Year 4	9,649	10,566	11,483	14,592	15,671
Multiple Dry Year 5	11,500	11,500	11,500	18,500	18,500

SOURCE: DERIVED FROM SSJID 2020 UWMP, TABLE 7-2 BASIS OF WATER YEAR DATA

GROUNDWATER RELIABILITY

There are many factors that can affect groundwater supply reliability, including current storage conditions, water quality, seasonal groundwater level variations and climate change. Reduced use by the City, combined with seasonal variations such as intense wet seasons, can result in increased groundwater table elevation. Additionally, all wells are located in the western portion of the SSJID service area and draw from the Eastern San Joaquin Subbasin, the same basin that the City, the City of Lathrop, the City of Stockton and other groundwater users draw from. For the purposes of this evaluation, only groundwater pumping estimated to be occurring within the City General Plan Update area is included.

While seasonal fluctuations do have a noticeable effect on groundwater elevation, the overall trend showed a decline over time until the City began to use imported surface water in 2005. Historical trends from California Statewide Groundwater Elevation Monitoring (CASGEM) indicate that the basin has experienced groundwater overdraft conditions. The introduction of surface water supply has helped groundwater elevation trends recover within the City by reducing pumping in the area.

Groundwater supply projections include approved proposed and entitled developments outside of the City boundaries, but within the planning area, and estimated groundwater pumping by others within the planning area. The projected groundwater supply reliability does not account for groundwater pumping outside the City planning area, nor undocumented privately owned domestic or irrigation wells. Groundwater use may increase as population increases, and groundwater use by others (including MUSD and agricultural users) may also increase in single dry years and multiple dry years (when surface water cutbacks occur). Constant groundwater demands from the MUSD and agricultural users have been assumed for all hydrologic scenarios.

The GSP indicates that the sustainable yield of the groundwater basin is approximately 1 AFY/acre (0.935 AFY/acre plus or minus 10 percent). For purposes of this WSA, West Yost assumes the City will limit groundwater use to approximately 24,877 AFY (the projected City area at Buildout of the General Plan planning area). The projected groundwater availability, assuming a constant growth rate through 2045, is shown in 3.14-7.

TABLE 3.14-7: PROJECTED GROUNDWATER PRODUCTION DURING HYDROLOGIC NORMAL, SINGLE DRY, AND MULTIPLE DRY YEARS, AFY

	2020(A)	2025(B)	2030(B)	2035(B)	2040(B)	2045(B)
Assumed Groundwater Supply	10,060	11,760	13,747	16,069	18,784	21,957

(A) CITY OF MANTECA 2015 UWMP, TABLE 6-10.

(B) BASED ON 1 AFY OF GROUNDWATER IS AVAILABLE PER ACRE OF CITY SURFACE AREA AS DISCUSSED IN SECTION 6.3 OF THIS WSA. THE PROJECTED GROUNDWATER PRODUCTION DURING 2025 TO 2045 WERE INTERPOLATED USING A CONSTANT GROWTH RATE AND THE 2020 (10,060) AND GENERAL PLAN BUILDOUT (24,877) VALUES. IT IS NOTED THAT GENERAL PLAN BUILDOUT IS ANTICIPATED TO OCCUR BETWEEN 2049 AND 2050.

The 2020 value of 10,060 AFY accounts for the area within the City limits and then subtracts out other estimated groundwater uses within City limits. As development continues, the largest groundwater usage inside City limits, agricultural use, would decrease. The groundwater supply shown in Table 3.14-7 assumes the City’s available ground water supply within the safe yield would increase as area outside the current City limits, and within the Planning Area, are annexed into the City for development.

REGULATORY SETTING

California Department of Health Services

The Department of Health Services, Division of Drinking Water and Environmental Management, oversees the Drinking Water Program. The Drinking Water Program regulates public water systems and certifies drinking water treatment and distribution operators. It provides support for small water systems and for improving their technical, managerial, and financial capacity. It provides subsidized funding for water system improvements under the State Revolving Fund (“SRF”) and Proposition 50 programs. The Drinking Water Program also oversees water recycling projects, permits water treatment devices, supports and promotes water system security, and oversees the Drinking Water Treatment and Research Fund for Methyl Tertiary Butyl Ether (MTBE) and other oxygenates.

California Code of Regulations

California Code of Regulations (CCR) Title 22, Chapter 15, Article 20 requires all public water systems to prepare a Consumer Confidence Report for distribution to its customers and to the Department of Health Services. The Consumer Confidence Report provides information regarding the quality of potable water provided by the water system. It includes information on the sources of the water, any detected contaminants in the water, the maximum contaminants levels set by regulation, violations and actions taken to correct them, and opportunities for public participation in decisions that may affect the quality of the water provided.

Consumer Confidence Report Requirements

CCR Title 22, Chapter 15, Article 20 requires all public water systems to prepare a Consumer Confidence Report for distribution to its customers and to the Department of Health Services. The

Consumer Confidence Report provides information regarding the quality of potable water provided by the water system. It includes information on the sources of the water, any detected contaminants in the water, the maximum contaminant levels set by regulation, violations and actions taken to correct them, and opportunities for public participation in decisions that may affect the quality of the water provided.

Urban Water Management Planning Act

The Urban Water Management Planning Act has as its objectives the management of urban water demands and the efficient use of urban water. Under its provisions, every urban water supplier is required to prepare and adopt an urban water management plan. An “urban water supplier” is a public or private water supplier that provides water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. The plan must identify and quantify the existing and planned sources of water available to the supplier, quantify the projected water use for a period of 20 years, and describe the supplier’s water demand management measures. The urban water supplier should make every effort to ensure the appropriate level of reliability in its water service is sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The Department of Water Resources must receive a copy of an adopted urban water management plan.

Safe Drinking Water Act

The federal Safe Drinking Water Act, as passed in 1947 and amended in 1986 and 1996, is the Country’s primary law regulating drinking water quality and is implemented by the United States Environmental Protection Agency (US EPA). The Safe Drinking Water Act authorizes the US EPA to set national health-based standards for drinking water and requires actions to protect drinking water and its sources. Additionally, it provides for treatment, monitoring, sampling, analytical methods, reporting, and public information requirements. Implementation of the Act, in California, is under the jurisdiction of the California Department of Public Health (CDPH), Division of Drinking Water and Environmental Management. Drinking Water regulations are set forth in the California Code of Regulations (CCR), Titles 7 and 22.

Water Conservation Projects Act

California’s requirements for water conservation are codified in the Water Conservation Projects Act of 1985 (Water Code Sections 11950 – 11954).

Consistent with California Water Code Sections 11950 – 11954, the City has implemented various water conservation efforts, as well as a Water Shortage Contingency Plan that identifies actions that can be taken to respond to catastrophic interruption of water supply.

California Water Code

Water Code section 10910 states:

10910(c)(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan,

the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f) and (g).

10910(d)(1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts.

10910(d)(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:

- (A) Written contracts or other proof of entitlement to an identified water supply.*
- (B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.*
- (C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.*
- (D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.*

10910(e) If no water has been received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts, the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall also include in its water supply assessment pursuant to subdivision (c), an identification of the other public water systems or water service contract-holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has identified as a source of water supply within its water supply assessments.

Additionally, Water Code section 10910 states:

10910(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment.

3.14 UTILITIES

10910(f)(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.

10910(f)(2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long term overdraft condition.

10910(f)(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.

A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.

10910(f)(4) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project.

A water assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.

Senate Bill (SB) 610

Senate Bill (SB) 610 was adopted in 2001 and reflects the growing awareness of the need to incorporate water supply and demand analysis at the earliest possible stage in the land use planning process. SB 610 amended the statutes of the Urban Water Management Planning Act, as well as the California Water Code Section 10910 et seq. The foundation document for compliance with SB 610 is the Urban Water Management Plan (UWMP), which provides an important source of information for cities and counties as they update their general plans. Likewise, planning documents such as general plans and specific plans form the basis for the demand information contained in an UWMP, as well as a WSA required under SB 610.

Water Code Section 10910 (c)(4) states “If the city or county is required to comply with this part pursuant to subdivision (b), the water assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed Project, in addition to existing and planned future uses, including agricultural and manufacturing uses.”

Water supply planning under SB 610 requires reviewing and identifying adequate available water supplies necessary to meet the demand generated by a project, as well as the cumulative demand for the general region over the next 20 years, under a broad range of water conditions. This information is typically found in the current UWMP for the project area. SB 610 requires the identification of the public water supplier for a project.

In addition, SB 610 requires the preparation of a WSA if a project meets the definition of a “Project” under Water Code Section 10912 (a). The code defines a “Project” as meeting any of the following criteria:

- A proposed residential development of more than 500 dwelling units;
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- A commercial building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- A hotel or motel with more than 500 rooms;
- A proposed industrial, manufacturing, or processing plant, or industrial park, planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area;
- A mixed-use project that includes one or more of these elements; or
- A project creating the equivalent demand of 500 residential units.

Alternately, if a public water system has less than 5,000 service connections, the definition of a “Project” includes any proposed residential, business, commercial, hotel or motel, or industrial

development that would account for an increase of 10 percent or more in the number of service connections for the public water system.

Based on the following, SB 610 applies to the proposed Project:

1. The proposed Project is subject to CEQA and an EIR is required.
2. The proposed Project, with 827 proposed residential dwelling units, and other non-residential land uses, meets the definition of a “Project” as specified in Water Code section 10912(a) paragraph (1) as defined for residential development.

The proposed Project has not been the subject of a previously adopted WSA and has not been included in an adopted WSA for a larger project. Thus, a WSA, as required by these criteria under SB 610, has been prepared for the Project. The WSA is included in Appendix G of this EIR.

Senate Bill (SB) 221

SB 221 adds Government Code Section 66455.3, requiring that the local water agency be sent a copy of any proposed residential subdivision of more than 500 dwelling units within five days of the subdivision application being accepted as complete for processing by the city or county. It also adds Government Code Section 66473.7, establishing detailed requirements for establishing whether a “sufficient water supply” exists to support any proposed residential subdivisions of more than 500 dwellings, including any such subdivision involving a development agreement. When approving a qualifying subdivision tentative map, the city or county must include a condition requiring availability of a sufficient water supply. The applicable public water system must provide proof of availability. If there is no public water system, the city or county must undertake the analysis described in Government Code Section 66473.7. The analysis must include consideration of effects on other users of water and groundwater.

Executive Order B-37-16

In May 2016, Governor Edmund G. Brown, Junior, signed Executive Order B-37-16 (Executive Order), Making Water Conservation a California Way of Life. The Executive Order directed DWR to work with the State Water Resources Control Board (State Water Board) to develop new water use targets as part of a permanent conservation framework for urban water agencies. The targets will build upon requirements established in the 2009 Water Conservation Act, but will strengthen standards for indoor residential per capita water use, outdoor irrigation, commercial, industrial and institutional (CII) water use, and water lost through leaks. DWR will be establishing interim water use targets by 2018, with final standards to be published by 2021. Agencies will need to demonstrate progress towards achieving final compliance in 2025 (DWR, 2017).

City of Manteca General Plan

2023 GENERAL PLAN (EXISTING)

Policies: General Services

- PF-P-2. Encourage comprehensive development rather than incremental, single project development.
- PF-I-1. The City shall periodically review its fee schedules for water and sewer connections and for city facilities and major equipment and revise them as necessary.
- PF-P-4. Secure sufficient sources of water to meet the needs of the existing community and planned residential and commercial growth.
- PF-P-5. City will continue to rely principally on groundwater resources for its municipal water in the near term, will participate in the regional improvements to deliver surface water to augment the City's groundwater supply.
- PF-P-6. The City shall develop new water sources as necessary to serve new development.
- PF-P-7. The City shall develop new water storage facilities and major distribution lines as necessary to serve new development.
- PF-P-8. The City will provide water for future development to maintain a balance of jobs and housing.
- PF-P-9. City water services shall not be extended to unincorporated areas except in extraordinary circumstances. Existing commitments for City water service outside the City limits shall continue to be honored.
- PF-P-11. The City will develop and implement water conservation measures as necessary elements of the water system.
- PF-P-12. The City shall continue to assess a water development fee on all new commercial, industrial, and residential development sufficient to fund system wide capacity improvements. The water development fee schedule shall be periodically reviewed and revised as necessary.
- PF-P-13. Ensure that all new development provides for and funds a fair share of the costs for adequate water distribution, including line extensions, easements, and plant expansions.
- PF-P-14. The City shall continuously monitor water flows through the City's water system to identify areas of potential water loss and cases of under billing for water service and shall make improvements in the systems as necessary.
- PF-P-15. The City shall monitor water quality regularly and take necessary measures to prevent contamination.
- PF-P-16. The City of Manteca shall include a groundwater analysis as a technical analysis of water system capacity in the update of the Public Facilities Implementation Plan (PFIP), and shall prepare an environmental analysis in the PFIP that addresses the quality and availability of groundwater.
- PF-P-17. The City of Manteca shall consider incremental increases in the demands on groundwater supply and water quality when reviewing development applications.

Implementation: Water Supply and Distribution

- PF-I-2. The City shall update the Public Facilities Implementation Plan, regarding water supply and distribution, every five years. The update shall be reviewed annually for adequacy and consistency with the General Plan.
- PF-I-3. The City shall require, as a condition of project approval, dedication of land and easements, or payment of appropriate fees and exactions, to help offset municipal costs of expansion of water treatment facilities and delivery systems.
- PF-I-4. The City shall retain a water conservation ordinance requiring the installation of low-flush toilets, low-flow showerheads, and similar features in all new development.
- PF-I-5. The City shall institute a remote monitoring program for the City's water system and replace faulty meters in the system as necessary. The City will continue the practice of identifying and replacing faulty meters at service connections on an ongoing basis.
- PF-I-6. The City shall regularly monitor water quality in City wells and take remedial action as necessary.
- PF-I-7. The City will encourage the use of recycled water for landscape irrigation where feasible, within the parameters of State and County Health Codes and standards.
- PF-I-8. The City shall update the Public Facilities Implementation Plan regarding wastewater collection and treatment every five years. The update shall be reviewed annually for adequacy and consistency with the General Plan.

Policies: Water Conservation

- RC-P-1. The City shall continue to implement water conservation standards for all commercial and industrial development, and for all existing and new residential development.
- RC-P-2. The City shall explore potential uses of treated wastewater when such opportunities become available.
- RC-P-3. The City shall protect the quantity of Manteca's groundwater.
- RC-P-4. The City shall require water conservation in both City operations and private development to minimize the need for the development of new water sources.
- RC-P-5. Development of private water wells within the city limits shall be allowed only where the City makes a finding that municipal water service is not readily and feasibly available, and such private well systems shall only be allowed to be used until such time as City water service becomes available.

Implementation: Water Conservation

- RC-I-1. Continue to implement standards for water conserving landscape practices, including the use of drought tolerant plants, for both public and private projects.
- RC-I-2. Continue efforts to increase public participation in water conservation.
- RC-I-3. Require large commercial and industrial water users to submit a use and conservation plan as part of the project entitlement review and approval process, and develop a program to monitor compliance with and effectiveness of that plan.
- RC-I-4. Cooperate with other agencies and jurisdictions to expand water conservation programs, and to develop methods of water reuse.

- RC-I-5. Actively pursue the use of treated wastewater in irrigation and industrial applications, including development of appropriate infrastructure.

Policies: Water Quality

- RC-P-11. Minimize sedimentation and loss of topsoil from soil erosion.
- RC-P-12. Minimize pollution of waterways and other surface water bodies from urban runoff.
- RC-P-13. Protect the quality of Manteca's groundwater.
- RC-P-14. Encourage participation by the County and surrounding communities in a basin-wide groundwater management study.
- RC-P-15. Once sewer service has been extended to incorporated areas, new septic tanks shall not be permitted.

GENERAL PLAN UPDATE (PROPOSED)

Policies: Community Facilities Element

- CF-6.1. Ensure the water system and supply is adequate to meet the needs of existing and future development and is utilized in a sustainable manner.
- CF-6.2. Ensure safe drinking water standards are met throughout the community.
- CF-6.3. Pursue additional water supply agreements to supplement the City's existing system in order to meet projected demand and to reduce the City's reliance on groundwater resources.
- CF-6.4. Ensure that the City's water supply provides for and supports a balance of jobs and housing in future development.
- CF-6.5. Prohibit extension of City water services to unincorporated areas except in extraordinary circumstances. Existing commitments for City water service outside the City limits shall continue to be honored.
- CF-6.7. Ensure that all new development provides for and funds a fair share of the costs for adequate water distribution, including line extensions, easements, and plant expansions.
- CF-6.8. Continue efforts to reduce potable water use and increase water conservation.
- CF-6.9. Encourage the use of recycled water for industrial uses and landscape irrigation where feasible, within the parameters of State and County Health Codes and standards.
- CF-6.10. Consider the effect of incremental increases in the demands on groundwater supply and water quality when reviewing development applications.

Utility Master Plans

CITY OF MANTECA URBAN WATER MANAGEMENT PLAN (2015)

The purpose of the 2015 Urban Water Management Plan is to ensure efficient use of urban water supplies in the City of Manteca and promote conservation. The UWMP discusses not only the availability of water but also water use, reclamation, and water conservation activities. The UWMP complies with the Urban Water Management Planning Act (UWMP Act) (California Water Code [CWC] Section 10610 et seq.).

3.14 UTILITIES

CITY OF MANTECA WATER MASTER PLAN (2005)

The City's 2005 Water Master Plan includes a summary of the City's system-wide water demands, the planning criteria used to determine water system demands, the City's water distribution system model, an analysis of the City's water system, and a summary of existing and future water system facilities.

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project may have a significant impact on the environment associated with Utilities if it would:

- Require or result in the relocation or construction of new or expanded water facilities, the construction or relocation of which could cause significant environmental effects; and/or
- Have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.

IMPACTS AND MITIGATION MEASURES

Impact 3.14-4: The proposed Project has the potential to require or result in the construction of new water treatment facilities or expansion of existing water facilities, the construction of which could cause significant environmental effects. (Less than Significant)

POTABLE WATER SYSTEM

The Project Site would be served by a new potable water distribution system. Development of the proposed potable water system will require the installation of additional water mains within the proposed roadways to comply with the 2005 City of Manteca Master Water Plan. Additionally, a potable well site would be installed within the subdivision adjacent to Airport Way. The proposed on-site water distribution system will have various points-of-connection to existing City mains. The Project will connect to the existing water main lines in Woodward Avenue, Airport Way, and at various stub streets from the existing Terra Ranch Subdivision to the west. The Project will extend a 12" water main line in Airport Way to the southern limits of the project. Additionally, an internal looped system of water lines will be installed within the Project Site including a 12" water main line bisecting the project to maintain adequate design flows through the site. (See Attached "Lumina at Machado Ranch Potable Water System Exhibit" for further reference).

NON-POTABLE WATER SYSTEM

The Project Site would include the development of an on-site non-potable water distribution system that would eventually provide irrigation water to planned parks, open space, and landscaped areas. This system will include a non-potable irrigation well which will be constructed by the project. All landscape irrigation is to be installed with non-potable components.

Connection from all irrigation systems to the non-potable water service will be provided in the proposed streets. This connection is to be provided per the requirements of the City Water Division

with an isolation valve to allow the system to utilize water from either the proposed non-potable irrigation well or from the City non-potable system. In the future, when the non-potable system is charged by the City, the irrigation will be provided by the non-potable water system with the irrigation well remaining as a back-up only. Irrigation shall be designed to maximize efficiency and meet the requirements of the City Parks Maintenance Division (See Attached “Lumina at Machado Ranch Non-Potable Water System Exhibit” for further reference).

PROPOSED PHASING AND MODELING ANALYSIS

A water system analysis will be prepared during future design of the Construction Documents to ensure that the final designs are compliant with City of Manteca fire flow and pressure standards for the Project Site. The proposed design and modeling analysis will verify that adequate fire flow and peak domestic demands are met in accordance with City Standards for each individual phase of the Project. The following design scenarios will be analyzed and included with the future construction documents for the Project:

- Fire Flow Design Scenario
- Fire Flow plus Peak Hour Domestic Demand Design Scenario

FUTURE POTABLE WELL SITE DETAILS, TIMING, AND PFIP FEES

Section II provides a description of the proposed potable well site as shown in the attached exhibits. The potable well site is adjacent to the proposed 12” water main line extension in Airport Way and the internal 12” water main lines. Additionally, the potable well site has been over-sized per direction of City staff to provide sufficient area for both the potable well and potential groundwater treatment facilities that maybe required.

All potable wells in the City of Manteca are designed and constructed under the strict direction of City staff. The timing and need for the potable well are to be determine by City staff in in accordance with the current City of Manteca Water System Master Plans and Models. Additionally, the Project Site will pay all applicable City of Manteca Well Water PFIP fees which includes the Groundwater Supply Fee (currently \$1,173 per lot) which will generate approximately \$970,071 for the construction of the potable well.

CONCLUSION

The proposed Project Site will provide an adequate potable and non-potable water distribution systems in strict accordance with City of Manteca Standards and Specification. Furthermore, the Project will provide an oversized lot to facility the construction of a future potable well. Finally, the project site will construct a non-potable irrigation well to reduce the landscape demand from the project. The civil engineer’s technical memorandum is included in the Water Supply Assessment.

The environmental impacts of constructing and operating the new water distribution infrastructure are discussed in Chapters 3.1 through 3.14, 3.16, and 4.0 of this Draft EIR. Implementation of the proposed Project would have a **less than significant** impact relative to this topic.

Impact 3.14-5: The proposed Project has the potential to have insufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years. (Less than Significant)

Proposed Project: The Project site is 183.4 acres within 16 Assessor parcels (APNs). This includes the Development Area (157.53-acre parcel, APN 241-32-018), Non-development Area 1 (an inhabited annexation of 6 parcels on 6 acres), Non-development Area 2 (an inhabited annexation of 9 parcels on 13.11 acres), and the Right-of-Way Annexation Area (6.82 acres of existing County right-of-way).

The Development Area is designated as Low Density Residential (LDR, 2.1 to 8 du/ac) with a Park designation under the current General Plan. The Draft General Plan Update currently being prepared by the City shows the same land use designation for this area when compared to the existing General Plan. There would be 827 single family residential units built in this area.

Non-development Area 1 is designated Low Density Residential (LDR, 2.1 to 8 du/ac) under the current General Plan. The General Plan Update shows the same land use designation for this area when compared to the existing General Plan. There are six existing dwelling units in Non-development Area 1.

Non-development Area 2 is designated Commercial Mixed Use (CMU), Neighborhood Commercial (NC), and General Commercial (GC) under the current General Plan. There are three existing dwelling units in Non-development Area 2. The General Plan Update includes some modifications to the land uses in this area. The Neighborhood Commercial designation was eliminated as a land use category in the General Plan Update, and General Commercial (GC) was changed to Commercial (C). In the General Plan Update the parcel currently designated as NC is changed to C, five parcels that were CMU changed to C, and two parcels remained CMU.

Adjusted City Water Demand Factors: Unit water use factors for projecting water demand based on the proposed future land uses within the City's General Plan were developed as part of the City of Manteca 2005 Water Master Plan. These unit water use factors assume a per capita water use of approximately 225 gallons per capita per day (GPCD) and do not account for conservation goals, water recycling and other possible conservation-derived sources. In the City's 2015 Urban Water Management Plan (UWMP), water demand projections assume that the City is able to meet its SB X7-7 2020 per capita water use target of 179 GPCD. Therefore, to reflect the City's 2020 conservation goals, the water use factor for LDR was reduced by 20 percent, corresponding to the overall per capita water use reduction from 225 GPCD to 179 GPCD. The water use factors for Parks were reduced by 10 percent to correspond with the climate data discussed in Section 4 of this WSA.

The unit water use factors for the land use designations applicable to the proposed Project are shown in Table 3.14-8. The adjusted water use factors are the factors used throughout this assessment. Backbone right-of-way (ROW) land uses are assumed to not require water.

TABLE 3.14-8: WATER USE FACTORS BY LAND USE TYPE

LAND USE DESIGNATION	WATER USE FACTOR, GPD/AC	
	2005 WATER MASTER PLAN ^(A)	ADJUSTED FOR SBX7-7 ^(B)
Low Density Residential (LDR)	2,800	2,240 ^(b)
Park (P)	4,000	3,600 ^(c)

NOTES: GPD/AC = GALLONS PER DAY PER ACRES

^(A) BASED ON UNIT WATER DEMAND FACTORS ESTABLISHED IN THE CITY OF MANTECA 2005 WATER MASTER PLAN. THESE FACTORS ASSUME A PER CAPITA WATER USE OF APPROXIMATELY 225 GPCD AND DO NOT ACCOUNT FOR CONSERVATION MEASURES.

^(B) BASED ON A 20 PERCENT REDUCTION OF FACTORS SHOWN IN THE CITY OF MANTECA 2005 WATER MASTER PLAN. THESE FACTORS ASSUME THAT THE CITY IS ABLE TO MEET ITS 2020 PER CAPITA WATER USE TARGET OF 179 GPCD.

SOURCE: LUMINA AT MACHADO RANCH WATER SUPPLY ASSESSMENT (WEST YOST ASSOCIATES, 2021).

Potable water losses documented in the City’s 2015 UWMP were calculated using a historic loss estimate of 12 percent of potable demands. It is anticipated that the implementation of advanced metering infrastructure (AMI) by 2018 will reduce losses to 8 percent by 2020, 7 percent by 2025, 6 percent by 2030, and 5 percent thereafter. Because the proposed Project is anticipated to have AMI, the WSA assumes that 6 percent of the proposed Project’s potable demand is unaccounted-for-water (UAFW).

Projected Water Demand for the Proposed Project: Based on the water use factors shown in Table 3.14-8 and a UAFW of 6 percent, the projected water demand for the proposed Project is shown in Table 3.14-9. The total projected annual potable water demand for the Project is projected to be 482.6 AFY.

The proposed Project does not intend to use recycled water. The City currently uses undisinfected secondary effluent to irrigate fodder crops in the land adjacent to the City’s wastewater treatment plant. However, there is no infrastructure in place to deliver tertiary treated recycled water to retail customers. Although a Recycled Water Master Plan is being prepared with the intent that the City would use recycled water to offset potable water demands for outdoor uses in the future, recycled water infrastructure is not planned to be constructed in time to serve the buildout of the proposed Project. Therefore, recycled water supplies are not included in the *Lumina Ranch Water Supply Assessment*.

Except for the nine existing dwelling units in the Non-development areas that will be connected to the City’s potable water system, this WSA does not include the water demand for the remainder of the Non-development Areas since it is part of a separate future project. The Non-development Areas are proposed for annexation. Although there is no new water demand, the residences will shift water supply source from an existing private well to City water.

3.14 UTILITIES

TABLE 3.14-9: PROJECTED WATER DEMAND FOR BUILDOUT OF THE PROPOSED PROJECT

LAND USE	GROSS AREA (ACRES)	DWELLING UNITS (DU)	WATER USE FACTOR		POTABLE WATER DEMAND (AFY)
LDR- Low Density Residential	146.6	827	439 ^(A)	gpd/DU	406.9
Non-Development Areas	19.1	9	439 ^(B)	gpd/DU	4.4
Parks and Open Space	10.9	--	3,600	gpd/acre	44.0
<i>Subtotal</i>	<i>157.5</i>	<i>827</i>			<i>455.3</i>
				UAFW ^(b)	27.3
			Total Demand		482.6

NOTES: GPD/AC = GALLONS PER DAY PER ACRES, GPD/DU = GALLONS PER DAY PER DWELLING UNIT, AFY = ACRE-FEET PER YEAR.

^(A) BASED ON LDR WATER USE FACTOR OF 2,240 GPD/ACRE AND AN AVERAGE DENSITY OF 5.1 DU/ACRE.

^(B) DENSITY OF EXISTING RESIDENCES IS UNKNOWN, SO THE WATER USE FACTOR FROM THE PROPOSED LOW DENSITY RESIDENTIAL IS USED. FUTURE DEVELOPMENT OF REMAINING AREA IS NOT PART OF THIS PROJECT.

SOURCE: LUMINA AT MACHADO RANCH PROJECT WATER SUPPLY ASSESSMENT (WEST YOST ASSOCIATES, 2021).

Projected Water Supply for the Proposed Project: Water demands for the proposed Project will be served using the City's existing and future portfolio of water supplies. The inclusion of existing and planned future supplies is specifically allowed by the Water Code:

Water Code section 10631(b): Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).

The applicants for the proposed Project will provide their proportionate share of required funding to the City for the acquisition and delivery of treated potable water supplies to the Project site.

Determination of Water Supply Sufficiency Based on the Requirements of SB 610: Water Code section 10910 states:

10910(c)(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.

Pursuant to Water Code section 10910(c)(4) and based on the technical analyses described in this WSA, the total projected water supplies determined to be available for the Proposed Project during Normal, Single Dry, and Multiple Dry years during a 20-year projection will meet the projected water demand associated with the Proposed Project, in addition to existing and planned future uses.

A comparison of the City's projected potable and raw water supplies and demands is shown in Table 3.14-10 for Normal, Single Dry, and Multiple Dry Years. Demand within the City's service area is not expected to exceed the City's supplies in any Normal year between 2020 and 2040. For purposes of this WSA, no demand reductions are assumed during dry years. With this assumption, the City's water demands are not expected to exceed water supplies in Single Dry Years or Multiple Dry Years.

TABLE 3.14-10: SUMMARY OF POTABLE AND RAW WATER DEMAND VERSUS SUPPLY DURING HYDROLOGIC NORMAL, SINGLE DRY, AND MULTIPLE DRY YEARS

HYDROLOGIC CONDITION		SUPPLY AND DEMAND COMPARISON, AFY			
		2025	2030	2035	2040
<i>NORMAL YEAR</i>					
Available Potable and Raw Water Supply(a)		23,260	25,247	27,569	37,284
Total Water Demand(b)		18,480	21,012	23,891	27,164
Potential Surplus (Deficit)		4,780	4,235	3,678	10,120
Supply Shortfall, Percent of Demand		-	-	-	-
<i>SINGLE DRY YEAR</i>					
Available Potable and Raw Water Supply(a)		23,260	25,247	27,569	37,284
Total Water Demand(b)		18,480	21,012	23,891	27,164
Potential Surplus (Deficit)		4,780	4,235	3,678	10,120
Supply Shortfall, Percent of Demand		-	-	-	-
<i>MULTIPLE DRY YEAR</i>					
Multiple Dry Year 1	Available Potable and Raw Water Supply(a)	23,260	25,247	27,569	37,284
	Total Water Demand(b)	18,480	21,012	23,891	27,164
	Potential Surplus (Deficit)	4,780	4,235	3,678	10,120
	Supply Shortfall, Percent of Demand	-	-	-	-
Multiple Dry Year 2	Available Potable and Raw Water Supply(a)	23,260	25,247	27,569	37,284
	Total Water Demand(b)	18,480	21,012	23,891	27,164
	Potential Surplus (Deficit)	4,780	4,235	3,678	10,120
	Supply Shortfall, Percent of Demand	-	-	-	-
Multiple Dry Year 3	Available Potable and Raw Water Supply(a)	21,409	24,313	27,552	33,376
	Total Water Demand(b)	18,480	21,012	23,891	27,164
	Potential Surplus (Deficit)	2,929	3,301	3,661	6,212
	Supply Shortfall, Percent of Demand	-	-	-	-
Multiple Dry Year 4	Available Potable and Raw Water Supply(a)	21,409	24,313	27,552	33,376
	Total Water Demand(b)	18,480	21,012	23,891	27,164
	Potential Surplus (Deficit)	2,929	3,301	3,661	6,212
	Supply Shortfall, Percent of Demand	-	-	-	-
Multiple Dry Year 5	Available Potable and Raw Water Supply(a)	23,260	25,247	27,569	37,284
	Total Water Demand(b)	18,480	21,012	23,891	27,164
	Potential Surplus (Deficit)	4,780	4,235	3,678	10,120
	Supply Shortfall, Percent of Demand	-	-	-	-

(A) SURFACE WATER SUPPLY FROM TABLE 6-2 PLUS ASSUMED GROUNDWATER SUPPLY FROM TABLE 6-3.

(B) EQUALS THE CITY'S TOTAL PROJECTED POTABLE AND RAW WATER DEMAND (FROM TABLE 5-1 AND TABLE 5-4).

CONCLUSION

The technical analyses shows that the total projected water supplies determined to be available for the Proposed Project during Normal, Single Dry, and Multiple Dry years during a 20-year projection will meet the projected water demand associated with the Proposed Project, in addition to existing and planned future uses. The proposed Project would not result in insufficient water supplies available to serve the Project from existing entitlements and resources. Therefore, the proposed Project would result in a **less than significant** impact to water supplies.

3.14.3 STORMWATER

ENVIRONMENTAL SETTING

Existing City Stormwater and Flood Control Facilities

The City of Manteca operates and maintains a storm drain system to control stormwater and protect residences and businesses from flooding. The City system includes approximately 150 miles of pipelines, 52 pump stations and 54 detention basins (City of Manteca, 2017). SSJID owns a complex network of irrigation laterals and drains that run within the City limits to which the City pumps stormwater, which is conveyed to the San Joaquin River either directly or via the French Camp Outlet Canal.

An agreement between the City and SSJID requires that the City monitor stormwater discharges to SSJID facilities to make sure capacities are not exceeded. The City is also required to control stormwater quality to meet applicable regulations. The agreement has been in place since 1975, and was most recently amended in 2006 (City of Manteca, 2013).

The detention basins are used to detain stormwater to attenuate peak flows before pumping drainage flows into SSJID facilities. Where required, to meet NPDES permit requirements, stormwater is treated prior to release to natural water bodies within the area. Treatment is provided at detention basin sites, or by on-site source control. Most of the City's pump stations pump from detention basins into the SSJID laterals and drains. The City system also includes 10 water level monitoring stations that are used to obtain real-time water level measurements at critical low points in the system, to prevent flooding. The storm drain system is monitored and controlled remotely through SCADA (City of Manteca, 2013).

The City's stormwater detention basins are designed based on a 10-year, 48-hour duration storm for urbanized areas and a 10-year, 24-hour duration storm for rural areas. Detention basins are required to be emptied over a 96-hour period (City of Manteca, 2013).

Future Stormwater Drainage Demand and System Improvements

The 2013 Storm Drain Master Plan (2013 SDMP) provides a comprehensive planning document to guide improvement and expansion of the City's storm drainage system to meet current and future needs in a safe and reliable manner while maintaining compliance with all applicable regulations. Five planning zones have been identified to define the capital improvements needed to serve future growth: Zones 30, 32, 34, 36 and 39. With the exception of drainage Zone 39, all drainage zones are located in the SSJID service area. The Project site is located in Zone 36 and is currently served by the SSJID.

REGULATORY SETTING

Clean Water Act

The Clean Water Act (CWA) regulates the water quality of all discharges into waters of the United States including wetlands, perennial and intermittent stream channels. Section 401, Title 33, Section 1341 of the CWA sets forth water quality certification requirements for “any applicant applying for a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters.” Section 404, Title 33, Section 1344 of the CWA in part authorizes the U.S. Army Corps of Engineers to:

- Set requirements and standards pertaining to such discharges: subparagraph (e); Issue permits “for the discharge of dredged or fill material into the navigable waters at specified disposal sites”: subparagraph (a);
- Specify the disposal sites for such permits: subparagraph (b);
- Deny or restrict the use of specified disposal sites if “the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies and fishery areas”: subparagraph (c);
- Specify type of and conditions for non-prohibited discharges: subparagraph (f);
- Provide for individual State or interstate compact administration of general permit programs: subparagraphs (g), (h), and (j);
- Withdraw approval of such State or interstate permit programs: subparagraph (i);
- Ensure public availability of permits and permit applications: subparagraph (o);
- Exempt certain Federal or State projects from regulation under this Section: subparagraph (r); and,
- Determine conditions and penalties for violation of permit conditions or limitations: subparagraph (s).
- Section 401 certification is required prior to final issuance of Section 404 permits from the U.S. Army Corps of Engineers.

The California State Water Resources Control Board and RWQCBs enforce State of California statutes that are equivalent to or more stringent than the Federal statutes. RWQCBs are responsible for establishing water quality standards and objectives that protect the beneficial uses of various waters including the San Joaquin River, and other waters in the city. In the city the RWQCB is responsible for protecting surface and groundwater from both point and non-point sources of pollution. Water quality objectives for all of the water bodies within the city were established by the RWQCB and are listed in its Basin Plan.

National Pollutant Discharge Elimination System

National Pollutant Discharge Elimination System (NPDES) permits are required for discharges of pollutants to navigable waters of the United States, which includes any discharge to surface waters, including lakes, rivers, streams, bays, the ocean, dry stream beds, wetlands, and storm sewers that are tributary to any surface water body. NPDES permits are issued under the Federal Clean Water Act, Title IV, Permits and Licenses, Section 402 (33 USC 466 et seq.)

3.14 UTILITIES

The RWQCB issues these permits in lieu of direct issuance by the Environmental Protection Agency, subject to review and approval by the Environmental Protection Agency Regional Administrator. The terms of these NPDES permits implement pertinent provisions of the Federal Clean Water Act and the Act's implementing regulations, including pre-treatment, sludge management, effluent limitations for specific industries, and anti-degradation. In general, the discharge of pollutants is to be eliminated or reduced as much as practicable so as to achieve the Clean Water Act's goal of "fishable and swimmable" navigable (surface) waters. Technically, all NPDES permits issued by the RWQCB are also Waste Discharge Requirements issued under the authority of the CWA.

These NPDES permits regulate discharges from publicly owned treatment works, industrial discharges, stormwater runoff, dewatering operations, and groundwater cleanup discharges. NPDES permits are issued for five years or less, and are therefore to be updated regularly. The rapid and dramatic population and urban growth in the Central Valley Region has caused a significant increase in NPDES permit applications for new waste discharges. To expedite the permit issuance process, the SWRCB has adopted several general NPDES permits, each of which regulates numerous discharges of similar types of wastes. The SWRCB has issued general permits for stormwater runoff from industrial and construction sites statewide. Stormwater discharges from industrial and construction activities in the Central Valley Region can be covered under these general permits, which are administered jointly by the SWRCB and RWQCB.

A new Phase II Small Municipal Separate Storm Sewer (MS4) General Permit was adopted by the State Water Resources Control Board on April 17, 2015 became effective June 1, 2015. The Permit has numerous new components and the City is required to implement these components in stages over the five-year period of the Permit.

Federal Emergency Management Agency

San Joaquin County is a participant in the National Flood Insurance Program (NFIP), a Federal program administered by FEMA. Participants in the NFIP must satisfy certain mandated floodplain management criteria. The National Flood Insurance Act of 1968 has adopted as a desired level of protection, an expectation that developments should be protected from floodwater damage of the Intermediate Regional Flood (IRF). The IRF is defined as a flood that has an average frequency of occurrence on the order of once in 100 years, although such a flood may occur in any given year. Communities are occasionally audited by the Department of Water Resources to insure the proper implementation of FEMA floodplain management regulations.

Department of Water Resources

The Department of Water Resources' (DWR) major responsibilities include preparing and updating the California Water Plan to guide development and management of the State's water resources, planning, designing, constructing, operating, and maintaining the State Water Resources Development System, protecting and restoring the Sacramento-San Joaquin Delta, regulating dams, providing flood protection, assisting in emergency management to safeguard life and property, educating the public, and serving local water needs by providing technical assistance. In addition, the DWR cooperates with local agencies on water resources investigations; supports watershed and

river restoration programs; encourages water conservation; explores conjunctive use of ground and surface water; facilitates voluntary water transfers; and, when needed, operates a State drought water bank.

California Water Code

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Division 7 of the California Water Code) (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resource Control Board (SWRCB) and each of the RWQCBs power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the Federal Clean Water Act. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

Each RWQCB must formulate and adopt a water quality control plan (Basin Plan) for its region the regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that a RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

The Water Code Section 13260 requires all dischargers of waste that may affect water quality in waters of the state to prepare and provide a water quality discharge report to the RWQCB. Section 13260a-c is as follows:

(a) Each of the following persons shall file with the appropriate regional board a report of the discharge, containing the information that may be required by the regional board:

(1) A person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state, other than into a community sewer system.

(2) A person who is a citizen, domiciliary, or political agency or entity of this state discharging waste, or proposing to discharge waste, outside the boundaries of the state in a manner that could affect the quality of the waters of the state within any region.

(3) A person operating, or proposing to construct, an injection well.

(b) No report of waste discharge need be filed pursuant to subdivision (a) if the requirement is waived pursuant to Section 13269.

(c) Each person subject to subdivision (a) shall file with the appropriate regional board a report of waste discharge relative to any material change or proposed change in the character, location, or volume of the discharge.

State Water Resource Control Board (State Water Board) Stormwater Strategy

The Stormwater Strategy is founded on the results of the Stormwater Strategic Initiative, which served to direct the State Water Board's role in Stormwater resources management. The Stormwater Strategy developed guiding principles to serve as the foundation of the Stormwater program; identified issues that support or inhibit the program from aligning with the guiding principles; and proposed and prioritized projects that the Water Boards could implement to address those issues. The State Water Board staff created a strategy-based document called the Strategy to Optimize Management of Stormwater (STORMS). STORMS includes a program vision, missions, goals, objectives, projects, timelines, and consideration of the most effective integration of project outcomes into the Water Board's Stormwater Program.

Stormwater Quality

The State Water Board adopted Order No. 2013-0001-DWQ in 2013, which requires that agencies regulate post-construction development (Provision E.12) through a number of different program elements. In response to this order, five cities, including Manteca, and San Joaquin County collaborated together to develop a "Multi Agency Post-Construction Stormwater Standards Manual," dated June 2015.

Water Quality Control Plan for the Central Valley Region

The Water Quality Control Plan for the Central Valley Region (Basin Plan) includes a summary of beneficial water uses, water quality objectives needed to protect the identified beneficial uses, and implementation measures. The Basin Plan establishes water quality standards for all the ground and surface waters of the region. The term "water quality standards," as used in the Federal Clean Water Act, includes both the beneficial uses of specific water bodies and the levels of quality that must be met and maintained to protect those uses. The Basin Plan includes an implementation plan describing the actions by the RWQCB and others that are necessary to achieve and maintain the water quality standards.

The RWQCB regulates waste discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued under a number of programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means. Water quality problems in the region are listed in the Basin Plan, along with the causes, where they are known. For water bodies with quality below the levels necessary to allow all the beneficial uses of the water to be met, plans for improving water quality are included. The Basin Plan reflects, incorporates, and implements applicable portions of a number of national and statewide water quality plans and policies, including the California Water Code and the Clean Water Act.

200-Year Flood Protection in Central Valley

Both State policy and recently enacted State legislation (Senate Bill 5) call for 200-year (0.5% annual chance) flood protection to be the minimum level of protection for urban and urbanizing areas in

the Central Valley. Senate Bill 5 (SB5) requires that the 200-year protection be consistent with criteria used or developed by the Department of Water Resources. SB 5 requires all urban and urbanizing areas in the Sacramento and San Joaquin Valleys to achieve 200-year flood protection in order to approve development. The new law restricts approval of development after 2016 if “adequate progress” towards achieving this standard is not met. Urban and urbanizing areas protected by State-Federal project levees cannot use “adequate progress” as a condition to approve development after 2028. Adequate progress is defined as meeting all of the following:

1. The project scope, cost and schedule have been developed;
2. In any given year, at least 90% of the revenues scheduled for that year have been appropriated and expended consistent with the schedule;
3. Construction of critical features is progressing as indicated by the actual expenditure of budget funds;
4. The city or county has not been responsible for any significant delay in completion of the system; and
5. The above information has been provided to the DWR and the Central Valley Flood Protection Board and the local flood management agency shall annually report on the efforts to complete the project.

The RD-17 levee system is designed to a 100-year flood protection standard. The Project site is currently located in Zone X, protected by levee, which by definition indicates an area protected by levees from the 1% annual chance flood. The Project site is, however, located within the 200-year floodplain as delineated on the most recent 200-year flood plain maps for Manteca.

City of Manteca General Plan

2023 GENERAL PLAN (EXISTING)

Policies: Major Drainage

- PF-P-26. The City shall continue to complete gaps in the drainage system in areas of existing development.
- PF-P-27. The City shall require the dedication and improvement of drainage detention basins as a condition of development approval according to the standards of the Drainage Master Plan. The responsibility for the dedication and improvement of detention basins shall be based on the prorated share of stormwater runoff resulting from each development.
- PF-P-28. Storm drainage systems within new development areas shall include open drainage corridors where feasible to supplement or replace an underground piped drainage system. The drainage systems would provide for short-term stormwater detention, stormwater conveyance for stormwater exceeding a 10-year event, stormwater quality treatment, bike and pedestrian paths, and visual open space within neighborhoods. The width and length of the corridors would be determined by the stormwater management requirements. The drainage systems would provide a pedestrian connection between parks and access to open

3.14 UTILITIES

space from residential neighborhoods. The neighborhoods would be designed with homes oriented to, rather than backing on the open space corridor.

Implementation: Major Drainage

- PF-I-13. The City shall update the Storm Drainage Master Plan and Public Facilities Implementation Plan, regarding water supply and distribution, every five years. The update shall be reviewed annually for adequacy and consistency with the General Plan.

Policies: Flood Safety

- S-P-7. Periodically review and update when necessary, the General Plan Safety Element goals, policies, and implementation measures in order to maintain compliance with applicable Federal and State requirements.
- S-P-8. Maintain and periodically update, City flood safety plans, floodplain management ordinances, zoning ordinance, building codes and other related sections of the Manteca Municipal Code to reflect Safety Element goals, policies and standards, applicable Federal and State law, and National Flood Insurance Program requirement.
- S-P-9. The City shall require evaluation of potential flood hazards prior to approval of development projects to determine whether the proposed development is reasonably safe from flooding and consistent with California Department of Water Resources (DWR) Urban Level of Flood Protection Criteria. The City shall not approve the execution of a development agreement, a tentative map, or a parcel map for which a tentative map is not required, or a discretionary permit or other discretionary entitlement that would result in the construction of a new building, or construction that would result in an increase in allowed occupancy for an existing building, or issuance of a ministerial permit that would result in the construction of a new residence for property that is located within a 200-year flood hazard zone, unless the adequacy of flood protection as described in Government Code §65865.5(a), 65962(a), or 66474.5(a), has been demonstrated.
- S-P-10. The City may permit new development in areas not identified as “urban” or “urbanizing” provided that they are protected from 100-year flooding by FEMA-accredited levees or equivalent flood protection as shown on an adopted FEMA FIRM, a FEMA-approved Letter of Map Revision (LOMR) or a Conditional Letter of Map Revision (CLOMR), subject to conditions specified in the CLOMR.
- S-P-11. The City may permit new development in areas not protected by FEMA-accredited 100-year levees subject to all applicable requirements of Manteca Municipal Code Chapter 8.30 (Floodplain Management), the California Building Standards Code as adopted by the City, and the latest promulgated FEMA standards for development in the 100-year floodplain, provided that new development approval will not cause the project site or area to be defined as “urban” or “urbanizing.”
- S-P-12. Work closely with the City of Lathrop, and the local reclamation districts to improve levee systems as required to provide ULOP for urban and urbanizing areas in Manteca by 2025, and to provide the basis for findings of “adequate progress” toward that objective based on substantial evidence as soon as possible.

- S-P-13. The City shall continue to cooperate with local, regional, State, and Federal agencies in securing funding to obtain the maximum level of flood protection that is practical, with a goal of achieving 200-year flood protection for all areas of the City.
- S-P-14. Maintain active participation in the National Flood Insurance Program (NFIP).
- S-P-15. The City shall maintain eligibility in the Federal Emergency Management Agency's (FEMA's) Community Rating System (CRS) program, which gives property owners discounts on flood insurance.
- S-P-15. The City shall maintain eligibility in the Federal Emergency Management Agency's (FEMA's) Community Rating System (CRS) program, which gives property owners discounts on flood insurance.
- S-P-16. Provide technical assistance and encourage landowners within the FEMA Special Flood Hazard Area (100-year floodplain) to purchase and maintain flood insurance.
- S-P-17. Ensure that the impacts of potential flooding are adequately analyzed when considering areas for future urban expansion.
- S-P-18. Provide opportunities for review of and comment by the reclamation districts, Manteca Police Services, Manteca Fire Department, the Lathrop Manteca Fire District for comment during new development project review.
- S-P-19. Consider the risks of catastrophic dam failure in the planning and environmental review of new development projects.
- S-P-20. Incorporate riparian habitat protection, mitigation or enhancement into flood protection improvements to maintain existing floodwater capacity where feasible.
- S-P-21. Combine flood control, recreation, water quality, and open space functions where feasible.
- S-P-22. Discourage large continuous paved areas unless provided with engineered drainage facilities, and where feasible, require the use of pervious paving materials.
- S-P-24. The City shall require, for areas protected by levees, all new developments to include a notice within the deed that the property is protected from flooding by a levee and that the property can be subject to flooding if the levee fails or is overwhelmed by floodwater flow.
- S-P-25. The City shall update flood hazard maps as necessary to reflect impacts from climate change in terms of long-term flood safety and long-term flood event probabilities.

GENERAL PLAN UPDATE (PROPOSED)

Policies: Community Facilities Element

- CF-8.1. Maintain and improve Manteca's storm drainage facilities.
- CF-8.2. Require all development projects to demonstrate how Stormwater runoff will be detained or retained on-site and/or conveyed to the nearest drainage facility as part of the development review process and as required by the City's NPDES Municipal Regional Permit. Project applicants shall mitigate any drainage impacts as necessary and shall demonstrate that the project will not result in any increase in off-site runoff during rain and flood events.
- CF-8.3. Continue to allow dual-use detention basins for parks, ball fields, and other uses where appropriate.
- CF-8.4. Incorporate recreational trails and parkway vegetation design where open

stormwater facilities are appropriate and ensure that vegetation does not reduce channel capacity.

- CF-8.5. Maintain drainage channels in a naturalized condition where appropriate, incorporating recreational trails, parkway vegetation, and other amenities and ensuring that vegetation does not reduce channel capacity, and consistent with the Resource Conservation Element.
- CF-8.6. Continue to work cooperatively with outside agencies such as the San Joaquin County Flood Control and Water Conservation District regarding storm drainage issues.

Implementation: Community Facilities Element

- CF-8a. Update the Storm Drainage Master Plan and Public Facilities Implementation Plan every five years. The update shall be reviewed annually for adequacy and consistency with the General Plan.
- CF-8b. Continue to complete gaps in the drainage system in areas of existing development.
- CF-8c. Identify which Stormwater and drainage facilities are in need of repair and address these needs through the City's Capital Improvement Program.
- CF-8d. Continue to review development projects to identify potential stormwater and drainage impacts and require development to include measures to ensure that off-site runoff is not increased as a during rain and flood events.

City of Manteca Municipal Code

TITLE 13 CHAPTER 13.28 STORMWATER MANAGEMENT DISCHARGES

The purpose of this chapter is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety and welfare of the public residing in watersheds within the city of Manteca. This chapter seeks to meet that purpose through the following objectives:

- A. Minimize increases in stormwater runoff from any development in order to reduce flooding, siltation and stream bank erosion and maintain the integrity of drainage channels;
- B. Minimize increases in non-point source pollution caused by stormwater runoff from development that would otherwise degrade local water quality;
- C. Minimize the total annual volume of surface water runoff that flows from any specific site during and following development to not exceed the pre-development hydrologic regime to the maximum extent practicable; and
- D. Reduce stormwater runoff rates and volumes, soil erosion and non-point source pollution wherever possible, through stormwater management controls and to ensure that these management controls are properly maintained and pose no threat to public safety. (Ord. 1253 § 1, 2004)

TITLE 13 CHAPTER 13.28 SECTION 13.28.060 DISCHARGES IN VIOLATION OF INDUSTRIAL OR CONSTRUCTION ACTIVITY NPDES STORMWATER DISCHARGE PERMIT.

A. Any person subject to an industrial NPDES stormwater discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the director upon inspection of the facility, during any enforcement proceeding or action or for any other reasonable cause.

B. Any person subject to a construction activity NPDES stormwater discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the director prior to or as a condition of a subdivision map, site plan, building permit or development or improvement plan; upon inspection of the facility; during any enforcement proceeding or action; or for any other reasonable cause. Prior to issuance of a construction permit a copy of the Notice of Intent (NOI) and the Stormwater Pollution Prevention Plan (SWPPP) shall be submitted to the city. (Ord. 1253 § 1, 2004).

Utility Master Plans

The City of Manteca maintains a variety of Master Plan documents that guide the design, development, and maintenance of the utilities within the city limits. This includes the City's *Storm Drain Master Plan (2013)*.

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project may have a significant impact on the environment associated with Utilities if it would:

- Require or result in the relocation or construction of new or expanded stormwater drainage facilities, the construction or relocation of which could cause significant environmental effects.

IMPACTS AND MITIGATION MEASURES

Impact 3.14-6: The proposed Project has the potential to require or result in the construction of new stormwater drainage facilities, the construction of which could cause significant environmental effects. (Less than Significant with Mitigation)

Flooding events can result in damage to structures, injury or loss of human and animal life, exposure of waterborne diseases, and damage to infrastructure. In addition, standing floodwater can destroy agricultural crops, undermine infrastructure and structural foundations, and contaminate groundwater. The RD-17 levee system is designed to a 100-year flood protection standard. The majority of the Project site is currently located in Zone X (shaded), 500-year flood zone, which by definition indicates an area protected by levees from the 1% annual chance flood. The southwestern corner of the Project site is located within Zone A, meaning this portion of the site is located within

3.14 UTILITIES

a 100-year flood zone. Additionally, the entire Project site is located within the 200-year composite flood plain. Figure 3.9-2 shows the 100- and 500-year flood boundaries.

Onsite storm drainage would be installed to serve the proposed Project. As discussed in Chapter 2.0, Project Description, development of the proposed Project would include construction of a new storm drainage system, including a drainage collection system, storm drain pump stations, and detention basins. The stormwater drainage detention basins will be constructed to meet the City of Manteca Standards. Discharge from the basins will be conveyed through controlled flow pumping facilities to existing City of Manteca and SSJID dual use main storm drain laterals. It is noted that the locations of the proposed detention basins are conceptual and will be finalized during the design of Improvement Plans.

Installation of the Project's storm drainage system will be subject to current City of Manteca Design Specifications and Standards. The proposed storm drainage collection and detention system will be subject to the SWRCB and City of Manteca regulations, including: Manteca Storm Drain Master Plan, 2013; Phase II, NPDES Permit Requirements; NPDES-MS4 Permit Requirements; and LID Guidelines. The City requires detention basins to help attenuate peak flows before drainage discharge is pumped into SSJID's facilities. Delaying the release of water over longer periods of time further reduces the potential of downstream flooding. Most of the proposed detention basins are joint-use facilities providing recreation and other uses when not being used for stormwater detention.

The proposed public storm drainage and water quality system is planned to function independently from surrounding developments. An internal layout of stormwater collection pipes with various sizes, as necessary, will be installed within the Development Area. A system of drainage swales may be included to treat and convey collected stormwater. All on-site storm drainage runoff will be collected through drain inlets in the landscaped areas and catch basins along the streets and within properties, and conveyed via surface swales and underground trunk lines to the detention and water quality basins. The conveyance systems and detention basins may include facilities designed to address water quality standards and requirements. Discharge from the basins will be conveyed through controlled flow pumping facilities to existing City of Manteca and SSJID dual use main storm drain laterals. The duration of the discharge will comply with City of Manteca standards. The water quality detention basins will be designed to comply with SWRCB and City of Manteca specifications and standards.

Conveyance of the detained storm drainage runoff from the proposed on-site dual use detention basins may be via either gravity flow drainage lines or pumped to existing realigned and upgraded City and SSJID dual use Laterals. Stormwater quality standards imposed and monitored by the Environmental Protection Agency (EPA) and the SWRCB through the City's NPDES permit require treatment of stormwater runoff prior to its release into natural drainage features or dual use South SSJID and City Laterals. Stormwater quality is an integral part of the City's stormwater management system. Most existing stormwater is pumped into the dual use SSJID and City laterals and drains.

Implementation of BMP's and LID features may result in reduced rates and volumes of stormwater runoff to the detention facilities and off-site points of connection. Stormwater infrastructure needs

within the Project area may be reduced. Size and quantity of stormwater collection, detention, and water quality features may be reduced as a result of the following:

1. Reduced pipe sizes due to the retention of the first half inch of rainfall.
2. Reduced collection system structures and pipe sizes due to implementation of LID features.
3. Reduced pump station facilities due to retention of the first half inch of rainfall.
4. Reduced power usage due to implementation of LID features and reduction in stormwater discharge volumes.

Because the Project site could increase runoff significantly, and create downstream drainage problems; Project impacts to stormwater are considered potentially significant. The following mitigation measure requires the Project applicant to submit a drainage plan to the City of Manteca for review and approval. The plan will include an engineered storm drainage plan that demonstrates attainment of pre-Project runoff requirements prior to release at the outlet canal and describes the volume reduction measures and treatment controls used to reach attainment consistent with the Manteca Storm Drain Master Plan. With the implementation of the following mitigation measure, drainage impacts would be reduced to **less than significant**.

MITIGATION MEASURE(S)

Mitigation Measure 3.14-1: *Prior to the issuance of a building or grading permit, the Project applicant shall submit a drainage plan to the City of Manteca for review and approval. The plan shall include an engineered storm drainage plan that demonstrates attainment of pre-Project runoff requirements prior to release at the outlet canal and describes the volume reduction measures and treatment controls used to reach attainment consistent with the Manteca Storm Drain Master Plan.*

3.14.4 SOLID WASTE

ENVIRONMENTAL SETTING

Waste Collection Services

The City of Manteca Public Works Department, Solid Waste Division provides solid waste collection services for the Manteca area. The Solid Waste Department works to meet commercial and residential demands in a low cost and environmentally conscious manor. The Department's team of drivers, yard personnel, superintendent, and office staff help residents and businesses reduce waste generation and utilize diversion techniques. Manteca provides the following solid waste services:

- Residential recycling picked up on a bi-weekly schedule
- Residential bi-weekly curbside pickup of compost materials
- Residential weekly curbside pickup of trash
- Leaf and Christmas tree pick up
- Oil collection containers picked up on a weekly basis
- Commercial recycling
- Household Hazardous Waste collection

Lovelace Transfer Station, owned and operated by San Joaquin County, is used to process and ship collected waste to its final destination. Recyclables are transported to a small Transfer Station adjacent to Forward Landfill where they are loaded onto larger trucks and taken to Sacramento Recycling. The majority of Manteca's solid waste is landfilled at the Forward Sanitary Landfill, located north of French Camp Road. Foothill Sanitary Landfill and North County landfill are also employed, but to a much lesser degree.

As part of a food to energy project, Manteca's food waste will soon be transported to a biogas conversion facility. A "turbo separator" will be installed at the Lovelace Transfer station to mechanically separate food waste from municipal solid waste. Trucks will ship the separated food waste to the Wastewater Quality Control Facility where it will be conveyed to digesters. The food waste will then be composted and the natural gas from the decomposition process will be used to power Manteca's solid waste collection trucks. This project is still in the planning phase but once completed, it is expected to increase diversion rates, decrease Manteca's diesel usage, and keep long term municipal service rates low.

Waste Disposal Facilities

FORWARD SANITARY LANDFILL

Forward Sanitary Landfill, owned by Forward Incorporated/Allied Waste North America, is located on a 567-acre property off of Austin Road. The current Forward Landfill was created in 2002 by joining the former Forward, Inc. Class II landfill with the adjacent Austin Road Class III Sanitary Landfill previously owned by the City of Stockton. Combining the two landfills was accomplished by filling in the air space between the landfills, employing lower base grades, and expanding the hours of operation.

The current Forward Landfill site includes a materials recovery facility and transfer station. The materials recovery facility composts food waste and processes wood waste for diversion purposes. The transfer station receives Manteca's recycling and loads it onto larger trucks to be transported to Sacramento Recycling. Forward, Inc. also operates a landfill gas-to-energy (LFGTE) plant on the northwest portion of the site to control air pollution and mitigate fire hazard from the methane gas released by anaerobic microorganisms during the decomposition process. PG&E purchases 760 kilowatts per hour of electrical power generated by Forward Landfill under a long-term contract.

The support facilities at Forward Landfill include scale houses, water production wells, a groundwater extraction and treatment system, sedimentation and detention ponds, and leachate evaporation basins.

Forward landfill is the only Class II facility in San Joaquin County designed to accept both designated wastes such as contaminated soil as well as inert municipal solid waste. The facility is closed to the general public and all waste deliveries are scheduled in advance and pre-screened. Accepted wastes include green materials, sludge (biosolids), asbestos, tires, industrial, and mixed municipal.

Although the site's total acreage is 567 acres, the allotted disposal footprint is 355 acres to allow for a boundary between the facility and surrounding developments. The current constructed Waste Management Unit scope is 288 acres and the remaining allotted land is used for other landfill activities such as soil borrow and storage until it is converted to Waste Management Units. Natural land elevations at the site are 30 to 40 feet above mean sea level and the landfill is permitted reach heights up to 210 feet above mean sea level.

Forward landfill was projected to close in 2020 at current acceptance rates due to reaching its permitted size parameters. A 17.3-acre expansion was approved in January of 2020 inside the landfill's existing boundaries along Austin Road east of Stockton Metropolitan Airport. This allowed the lifespan of the landfill to be extended to 2036 and an additional 8.2 million cubic yards of waste will be processed on two sites, an 8.7-acre parcel in the northeast corner and an 8.6-acre parcel on the south end of the property.

LOVELACE MATERIALS RECOVERY FACILITY AND TRANSFER STATION

Lovelace Materials Recovery Facility and Transfer Station is a 15-acre site permitted to receive 1,300 tons of waste per day and accommodate a traffic volume of 1,280 vehicles per day; however, the average daily tonnage received is less than half of this amount.

This station accepts waste from the general public in the form of agricultural waste, cabover campers, camper shells, dismantled camper trailers less than 25 feet in length, commercial and household waste, construction/demolition waste, tires, and white goods such as refrigerators, freezers, and air conditioning units. The transfer station is not permitted to accept any liquid waste sludge, any waste requiring special handling, designated wastes, or hazardous wastes. These items must be taken to San Joaquin County Hazardous Waste Facility located at the Stockton Airport.

3.14 UTILITIES

SAN JOAQUIN COUNTY HAZARDOUS WASTE FACILITY

The San Joaquin County Hazardous Waste facility is located on a 2-acre site at 7850 R A Bridgeford Street in Stockton. The hazardous waste facility is available for public drop-off of hazardous wastes on Thursday through Sunday with the exception of conditionally exempt small quantity generators, which are accepted by appointment only. The facility is free of charge; however, some conditions do apply. Hazardous wastes accepted by this facility include paint, oil, antifreeze, pool chemicals, fertilizers, batteries, cleaning products, medical sharps, and medicines.

In February 2006, it became illegal for residents and small businesses to dispose of universal waste in the trash due to a decision by the Department of Toxic Substance Control and the California Integrated Waste Management Control. Universal waste is a type of hazardous waste containing mercury or other heavy metals that can release neurotoxins into the environment if not disposed of properly. Almost any product with a circuit board is considered universal waste. Other universal waste items include batteries, motor oil, mercury thermostats, fluorescent lights, cathode ray tube devices (computer monitors, televisions), and mercury thermometers. These items are banned from landfills and require special handling. Most of these items are accepted at both Lovelace Transfer Station and the County Hazardous Waste facility. E-waste not accepted by these two facilities consists of computers, TVs, and printers, which must be taken to the City Of Manteca Solid Waste Office.

California limits the transportation of hazardous wastes to 15 gallons or 125 pounds per vehicle but the number of trips made per day is not regulated. Single containers cannot be over 5 gallons. Manteca provides residents with free 5-quart motor oil collection containers upon request. They can be left out curbside next to trash carts on collection days to be picked up for no extra charge.

Solid Waste Generation Rates and Volumes

The California Department of Resources Recycling and Recovery (CalRecycle) tracks and monitors solid waste generation rates on a per capita basis. Per capita solid waste generation rates and total annual solid waste disposal volumes for the City of Manteca between 2010 and 2014 are shown in Table 3.15-9.

As shown in the Table 3.14-11, the per capita waste generation rate increased from 4.9 to 5.9 lbs/person/day over the 8-year (2010-2018) period. In addition, the total annual disposal tonnage in Manteca increased by 28,272 tons over the 2010-to-2018-time span. With the passage of SB 1016, per capita disposal rate is used to determine the diversion progress of a city and not the jurisdictional diversion rates. Therefore, a population increase resulting in the generation of more overall city waste does not affect the jurisdiction's ability to meet its waste goals. The City's waste disposal rate targets are shown in Table 3.14-12.

TABLE 3.14-11: SOLID WASTE GENERATION RATES

YEAR	WASTE GENERATION RATE (LBS/PERSON/DAY)	POPULATION	TOTAL DISPOSAL TONNAGE (TONS/YEAR)
2010	4.9	66,749	59,206
2011	4.6	68,410	57,462
2012	4.5	69,815	57,467
2013	4.6	71,164	59,537
2014	4.7	72,880	61,696
2015	5.0	74,721	67,089
2016	5.4	76,692	73,050
2017	5.5	78,738	80,277
2018	5.9	80,829	87,478
2019	--	--	--

SOURCE: CAL RECYCLE. ACCESSED AUGUST 2019

NOTES: 2019 DATA NOT AVAILABLE

TABLE 3.14-12: CITY OF MANTECA WASTE DISPOSAL RATE TARGETS (POUNDS/DAY)

YEAR	POPULATION		EMPLOYMENT	
	TARGET	ANNUAL	TARGET	ANNUAL
2010	5.6	4.9	22.5	22.5
2011	5.6	4.6	21.1	20.6
2012	5.6	4.5	21.1	19.9
2013	5.6	4.6	21.1	19.6
2014	5.6	4.7	21.1	19.1
2015	5.6	5.0	21.1	19.7
2016	5.6	5.4	21.1	20.7
2017	5.6	5.5	21.1	21.8
2018	5.6	5.9	21.1	23.6
2019	5.6	6.0	21.1	24.1

SOURCE: CAL RECYCLE. ACCESSED AUGUST 2019.

The City’s target rate represents a 50% diversion rate. In accordance with AB 939, which required municipalities to aggressively pursue Municipal Solid Waste (MSW) source reduction and recycling, the City continues to meet and exceed all AB 939 goals. The various solid waste management actions adopted by the City include, but are not limited to, recycling and yard waste programs for residents and businesses, public education and public outreach awareness events, and school recycling and composting.

Landfill Capacity

As stated, solid waste from Manteca is primarily landfilled at the Forward Sanitary Landfill. Forward Landfill is currently permitted to accept 46,080 tons of solid waste per week, not to exceed 8,668 tons per day. The average daily disposal is 620 tons per day. The allotted disposal area is 354.5 acres, and it is designed to hold 51,040,000 cubic yards of inert or designated wastes. The remaining

3.14 UTILITIES

capacity is 23.7 million cubic yards. At that time the capacity is reached, the City can utilize the Foothill Landfill as a location for solid waste disposal. Other landfills used include Foothill Sanitary and North County. All three landfills are summarized in Table 3.14-13 below. Table 3.14-14 summarizes the City of Manteca’s disposal rate targets, as identified by Cal Recycle.

TABLE 3.14-13: CITY OF MANTECA LANDFILL SUMMARY

<i>LANDFILL</i>	<i>LOCATION</i>	<i>MAXIMUM DAILY THROUGHPUT (TONS/DAY)</i>	<i>REMAINING CAPACITY (CUBIC YARDS)</i>	<i>ANTICIPATED CLOSURE DATE</i>
Forward Sanitary	Manteca	8,668	22.1 million	2036
Foothill Sanitary	Linden	1,500	125.0 million	2054
North County	Victor	825	35.4 million	2035

SOURCE: CAL RECYCLE. ACCESSED FEBRUARY 2021.

TABLE 3.14-14: CITY OF MANTECA WASTE DISPOSAL RATE TARGETS (POUNDS/DAY)

<i>POPULATION</i>		<i>EMPLOYMENT</i>	
<i>Target</i>	<i>Annual</i>	<i>Target</i>	<i>Annual</i>
5.6	6.0	21.1	24.1

SOURCE: CAL RECYCLE 2019.

Funding

The City’s solid waste collection services operate as an enterprise fund. An enterprise fund establishes a separate accounting and financial reporting mechanism for municipal services for which a fee is charged in exchange for goods or services. Under enterprise accounting, the revenues and expenditures of services are separated into funds with their own financial statements, rather than commingled with the revenues and expenses of all other government activities. The City’s General Fund is not used for solid waste collection service costs. The revenues generated from service collection fees adequately fund the operation of the City’s transfer station and Solid Waste Division operations, including solid waste collections. The General Plan contains policies requiring that new developments pay an equal proportion of municipal service costs so that the economic burden is not placed on existing residents.

REGULATORY SETTING

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) was enacted in 1976 to address the huge volumes of municipal and industrial solid waste generated nationwide. After several amendments, the current Act governs the management of solid and hazardous waste and underground storage tanks (USTs). RCRA was an amendment to the Solid Waste Disposal Act of 1965. RCRA has been amended several times, most significantly by the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA is a combination of the first solid waste statutes and all subsequent amendments. RCRA authorizes the Environmental Protection Agency (EPA) to regulate waste management activities. RCRA authorizes states to develop and enforce their own waste management programs,

in lieu of the Federal program, if a state's waste management program is substantially equivalent to, consistent with, and no less stringent than the Federal program.

California Integrated Waste Management Act (AB 939 and SB 1322)

The California Integrated Waste Management Act of 1989 (AB 939 and SB 1322) requires every city and county in the state to prepare a Source Reduction and Recycling Element to its Solid Waste Management Plan that identifies how each jurisdiction will meet the mandatory state waste diversion goals of 25% by 1995 and 50% by 2000. The purpose of AB 939 and SB 1322 is to “reduce, recycle, and re-use solid waste generated in the state to the maximum extent feasible.” The term “integrated waste management” refers to the use of a variety of waste management practices to safely and effectively handle the municipal solid waste stream with the least adverse impact on human health and the environment. The Act has established a waste management hierarchy, as follows: Source Reduction; Recycling; Composting; Transformation; and Disposal.

California Integrated Waste Management Board Model Ordinance

Subsequent to the Integrated Waste Management Act, additional legislation was passed to assist local jurisdictions in accomplishing the goals of AB 939. The California Solid Waste Re-use and Recycling Access Act of 1991 (§42900-42911 of the Public Resources Code) directs the California Integrated Waste Management Board (CIWMB) to draft a “model ordinance” relating to adequate areas for collecting and loading recyclable materials in development projects. The model ordinance requires that any new development project, for which an application is submitted on or after September 1, 1994, include “adequate, accessible, and convenient areas for collecting and loading recyclable materials.” For subdivisions of single family detached homes, recycling areas are required to serve only the needs of the homes within that subdivision.

California Green Building Standards Code (CALGreen)

CALGreen requires the diversion of at least 50 percent of the construction waste generated during most new construction projects (CALGreen Sections 4.408 and 5.408) and some additions and alterations to nonresidential building projects.

California Mandatory Commercial Recycling Law (AB 341)

Assembly Bill (AB) 341 directed CalRecycle to develop and adopt regulations for mandatory commercial recycling. The final regulation was approved by the Office of Administrative Law on May 7, 2012. The purpose of AB 341 is to reduce GHG emissions by diverting commercial solid waste to recycling efforts and to expand the opportunity for additional recycling services and recycling manufacturing facilities in California.

Beginning on July 1, 2012, businesses have been required to recycle, and each jurisdiction has implemented programs that include education, outreach, and monitoring. Jurisdictions were required to start reporting on their 2012 Electronic Annual Report (due August 1, 2013) on their

initial education, outreach, and monitoring efforts, and, if applicable, on any enforcement activities or exemptions implemented by the jurisdiction.

In addition to Mandatory Commercial Recycling, AB 341 sets a statewide goal for 75 percent disposal reduction by the year 2020. This is not written as a 75 percent diversion mandate for each jurisdiction. The 50 percent disposal reduction mandate still stands for cities, counties, and State agencies (including community colleges) under AB 939. CalRecycle continues to evaluate program implementation as it has in the past through the Annual Report review process for entities subject to either AB 939.

Assembly Bill 1826 Mandatory Commercial Organics Recycling

In October 2014 Governor Brown signed AB 1826, requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings that consist of five or more units (please note, however, that multi-family dwellings are not required to have a food waste diversion program). Organic waste (also referred to as organics) means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste. This law phases in the mandatory recycling of commercial organics over time, while also offering an exemption process for rural counties. In particular, the minimum threshold of organic waste generation by businesses decreases over time, which means an increasingly greater proportion of the commercial sector will be required to comply.

Starting on January 1, 2019, businesses that generate 4 cubic yards or more of commercial solid waste per week shall arrange for organic waste recycling services. By Summer/Fall 2021, if CalRecycle determines that the statewide disposal of organic waste in 2020 has not been reduced by 50 percent of the level of disposal during 2014, the organic recycling requirements on businesses will expand to cover businesses that generate 2 cubic yards or more of commercial solid waste per week. Additionally, certain exemptions may no longer be available if this target is not met.

SB 1374 (Construction and Demolition Waste Materials Diversion)

Senate Bill 1374 (SB 1374), Construction and Demolition Waste Materials Diversion Requirements, requires that jurisdictions summarize their progress realized in diverting construction and demolition waste from the waste stream in their annual AB 939 reports. SB 1374 required the CIWMB to adopt a model construction and demolition ordinance for voluntary implementation by local jurisdictions.

AB 2176 (Montanez, Chapter 879, Statutes of 2004)

This law requires the largest venue facilities and events (as defined) in each city and county to plan and implement solid waste diversion programs, and annually report the progress of those upon the

request of their local government. In turn, local jurisdictions must report to the CIWMB waste diversion information for the top 10 percent of venues and events by waste generation.

A large event is defined as:

1. Serves an average of more than 2,000 individuals per day of operation (both people attending the event and those working at it—including volunteers—are included in this number); and
2. Charges an admission price or is run by a local agency.

The bill specifically includes public, nonprofit, or privately owned parks, parking lots, golf courses, street systems, or other open space when being used for an event, including, but not limited to, a sporting event or a flea market in addition to events that meet both of the above.

A large venue is defined as:

- A permanent facility that annually seats or serves an average of more than 2,000 individuals within the grounds of the facility per day of operation (both people attending the event and those working at it—including volunteers too—are included in this number).

Venues include, but are not limited to airports, amphitheaters, amusement parks, aquariums, arenas, conference or civic centers, fairgrounds, museums, halls, horse tracks, performing arts centers, racetracks, stadiums, theaters, zoos, and other public attraction facilities.

Senate Bill 1383 Short-Lived Climate Pollutants: Organic Waste Methane Emissions Reductions

In September 2016, Governor Brown signed SB 1383, establishing methane emissions reduction targets in a statewide effort to reduce emissions of short-lived climate pollutants (SLCP) in various sectors of California's economy. The bill codifies the California Air Resources Board's Short-Lived Climate Pollutant Reduction Strategy, established pursuant to SB 605, in order to achieve reductions in the statewide emissions of short-lived climate pollutants. Actions to reduce short-lived climate pollutants are essential to address the many impacts of climate change on human health, especially in California's most at-risk communities, and on the environment.

As it pertains to solid waste, SB 1383 establishes targets to achieve a 50 percent reduction in the level of the statewide disposal of organic waste from the 2014 level by 2020 and a 75 percent reduction by 2025. The law grants CalRecycle the regulatory authority required to achieve the organic waste disposal reduction targets and establishes an additional target that not less than 20 percent of currently disposed edible food is recovered for human consumption by 2025.

City of Manteca General Plan

2023 GENERAL PLAN (EXISTING)

Policies: Solid Waste

- PF-P-31. The City will implement and enforce the provisions of its Source Reduction and Recycling Element.
- PF-P-32. The City shall support the continued use of the Lovelace Transfer Station on Lovelace Road, between Union Road and Airport Way, for the processing and shipping of solid waste materials.

GENERAL PLAN UPDATE (PROPOSED)

Policies: Community Facilities Element

- CF-11.1. Continue to require mandatory refuse collection throughout the city.
- 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.
- CF-11.6. Support the continued use of the Lovelace Transfer Station on Lovelace Road, between Union Road and Airport Way, for the processing and shipping of solid waste materials.

Implementation: Community Facilities Element

- CF-11a. Regularly monitor the level of service provided by garbage and recycling collection contractors to ensure that service levels are adequate.
- CF-11b. Implement recycling and waste reduction education programs for City employees. The education program will disseminate information on what and how much is recycled by the City.
- CF-11c. Expand the provision of recycling collection containers and services to all City facilities, including parks.
- CF-11d. Include standard language in requests for services and in City agreements requiring contractors to use best management practices to maximize diversion of waste from the landfill.
- CF-11e. Coordinate with San Joaquin County concerning the City's use of the Lovelace Landfill and its capacity projections.

- CF-11f. Encourage recycling, reuse, and appropriate disposal of hazardous materials, including the following:
 - Increased participation in single family and multifamily residential curbside recycling programs;
 - Increased participation in commercial and industrial recycling programs for paper, cardboard, and plastics;
 - Reduce yard and landscaping waste through methods such as composting, grass recycling, and using resource efficient landscaping techniques; and
 - Encourage local businesses to provide electronic waste (e-waste) drop-off services and encourage residents and businesses to properly dispose of, or recycle, e-waste.

Manteca Municipal Code, Chapter 13.02: Solid Waste Collection and Disposal

Chapter 8.12 of the Municipal Code regulates the management of garbage, recyclables, and other wastes. Chapter 8.12 sets forth solid waste collection, disposal, and diversion requirements for residential, commercial, industrial, and other uses and addresses yard waste, hazardous materials, recyclables, and other forms of solid waste.

Manteca Municipal Code, Chapter 13.02.090: Mandatory Multifamily Recycling

Owners of multifamily complexes are obligated to utilize Manteca's recycling service and allow for the convenient location of recycling containers. The location of recycling containers must be approved by the Office of the Director of Public Works and the containers must remain in the agreed upon location excluding scheduled waste collection dates.

Manteca Municipal Code, Chapter 13.02.100: Commercial Business Recycling

Commercial businesses that produce two or more cubic yards of recyclable or green waste items per week must utilize Manteca's waste collection services. The placement of recycle and green waste containers require approval by the Office of the Director of Public Works.

Manteca Municipal Code, Chapter 13.02.120: Construction and Demolition Recycling

The Manteca Municipal Code Construction and Demolition Recycling Section applies to all contractors on all city construction and demolition projects. It mandates that all concrete, clean wood waste, brick, asphalt, and scrap metal be recycled when the total area of the project surpasses five thousand square feet. The recyclable items must be separated on site and stored in recycling containers to be retrieved by the City of Manteca Solid Waste Division or a permitted resource recovery collector. Construction recycling containers must only contain recyclable material. Failing to properly separate wastes at the source is unlawful and could result in a misdemeanor. All resource recovery collectors providing waste transfer services for construction or demolition related projects

3.14 UTILITIES

within Manteca must claim the types and quantity of materials transported to landfills or transfer stations as well as provide certified weigh-master receipts.

THRESHOLDS OF SIGNIFICANCE

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

- Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; and/or
- Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

IMPACTS AND MITIGATION MEASURES

Impact 3.14-7: The proposed Project has the potential to be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs and comply with federal, State, and local statutes and regulations related to solid waste. (Less than Significant with Mitigation)

As previously described, permitted maximum disposal at the Forward Landfill is 8,668 tons per day. The total permitted capacity of the landfill is 51.04 million cubic yards. Forward Sanitary Landfill has a remaining capacity of 23,700,000 cubic yards, and has a current maximum permitted throughput of 8,668 tons per day. This landfill originally had a cease operation date in the year 2020. Solid waste generated by the proposed Project was estimated based on CalRecycle generation rate estimates by use (discussed below).

The Development Area is estimated to generate roughly 10 pounds per day per household³. It is estimated that the proposed 827 residential units would generate 8,270 pounds per day of solid waste. The total solid waste generated by the proposed Project is estimated to be 4.14 tons per day.

Forward Landfill was projected to close in 2020 at current acceptance rates due to reaching its permitted size parameters. To increase the lifespan of the landfill, Forward, Inc. is planning to expand its disposal footprint. The City's projected increase in solid waste generation associated with future buildout of the proposed General Plan is within the permitted capacity of the Forward Sanitary Landfill expansion. As noted previously, the vast majority of landfill disposed from the City of Manteca went to Forward Sanitary Landfill.⁴ Other landfills that received waste from the City of Manteca include:

³ Note: data based on CalRecycle estimated solid waste generation rates for single family residential uses.

⁴ Note: data provided by CalRecycle, based on information provided by County disposal reports.

- Lovelace Materials Recovery Facility and Transfer Station
- San Joaquin County Hazardous Waste
- Foothill Sanitary Landfill
- North County

Forward Sanitary Landfill has a remaining capacity of 23,700,000 cubic yards, and has a current maximum permitted throughput of 8,668 tons per day. This landfill originally had a cease operation date in the year 2020. A 17.3-acre expansion was approved in January of 2020 inside the landfill's existing boundaries along Austin Road east of Stockton Metropolitan Airport. The lifespan of the landfill will extend from 2030 to 2036 and an additional 8.2 million cubic yards of waste will be processed on two sites, an 8.7-acre parcel in the northeast corner and an 8.6-acre parcel on the south end of the property. The City will need to secure a new location or expand existing facilities when the Forward Landfill is ultimately closed. There are several options that the City will have to consider for solid waste disposal at that time which is estimated to be 2036, including the construction of new facilities or expansion of existing facilities.

At the closure of the Forward Landfill, the City can potentially utilize the Foothill Landfill and the North County Landfill as locations for solid waste disposal. The permitted maximum disposal at the Foothill Landfill is 1,500 tons per day and the North County Landfill is 825 tons per day. The remaining capacity of these landfills include 125 million cubic yards of solid waste at the Foothill Landfill, with an estimated cease operation date of 2054, and 35.4 million cubic yards of solid waste at the North County Landfill, which has an estimated cease operation date of 2035. The addition of solid waste associated with the proposed Project to the Foothill Landfill and North County Landfill would not exceed the combined landfills' remaining capacity of 160.4 cubic yards.

The following mitigation measure requires the payment of a solid waste connection fee prior to issuance of grading permits. With the implementation of the following mitigation measure, potential solid waste impacts would be reduced to **less than significant**.

MITIGATION MEASURE(S)

Mitigation Measure 3.14-2: *Prior to the issuance of a building or grading permit for each phase of the Project, the Project applicant shall pay the City's waste connection fee which equates to the Project's fair share contribution, consistent with section 13.02.050, Charges for solid waste collection services, of the City's municipal code.*

This page intentionally left blank.

This section provides a background discussion of the hazards associated with wildfires in the Planning Area. The discussion of fire suppression resources is located within Chapter 3.12, Public Services and Recreation, of this report.

No comments were received during the NOP comment period regarding this environmental topic.

3.15.1 ENVIRONMENTAL SETTING

FIRE HAZARD SEVERITY ZONES

The State has charged the California Department of Forestry and Fire Protection (CalFire) with the identification of Fire Hazard Severity Zones (FHSZ) within State Responsibility Areas (SRAs). In addition, CalFire must recommend Very High Fire Hazard Severity Zones (VHFHSZ) identified within any Local Responsibility Areas (LRAs). The FHSZ maps are used by the State Fire Marshall as a basis for the adoption of applicable building code standards.

Local Responsibility Areas

The City of Manteca is not located within a VHFHSZ as identified by CalFire; no cities or communities within San Joaquin County are categorized as containing a VHFHSZ by CalFire. Three areas of the City are located in an LRA identified as having a moderate fire hazard severity zone by CalFire. These include a developed area near Airport Way and West Yosemite Avenue, a developed area near East Yosemite Avenue and Austin Road, and a developed area near West Louise Avenue and South Airport Way. The Project site is not located within or adjacent to these areas.

State Responsibility Areas

There are no SRAs within the vicinity of the Project site.

Federal Responsibility Areas

There are no Federal Responsibility Areas (FRAs) within the vicinity of the Project site.

IDENTIFYING FIRE HAZARDS

Fuel Rank

Fuel rank is a ranking system developed by CalFire that incorporates four wildfire factors: fuel model, slope, ladder index, and crown index.

The U.S. Forest Service has developed a series of fuel models, which categorize fuels based on burn characteristics. These fuel models help predict fire behavior. In addition to fuel characteristics, slope is an important contributor to fire hazard levels. A surface ranking system has been developed by CalFire, which incorporates the applicable fuel models and slope data. The model categorizes slope into six ranges: 0-10%, 11-25%, 26-40%, 41-55%, 56-75% and >75%. The combined fuel model and slope data are organized into three categories, referred to as surface rank. Thus, surface rank reflects the quantity and burn characteristics of the fuels and the topography in a given area.

The ladder index is a reflection of the distance from the ground to the lowest leafy vegetation for tree and plant species. The crown index is a reflection of the quantity of leafy vegetation present within individual specimens of a given species.

The surface rank, ladder index, and crown index for a given area are combined in order to establish a fuel rank of medium, high, or very high. Fuel rank is used by CalFire to identify areas in the California Fire Plan where large, catastrophic fires are most likely.

The areas warranting “moderate” fuel ranks possess combustible material in sufficient quantities combined with topographic characteristics that pose a wildfire risk. As stated, there are three areas within the City identified as moderate. The Project site does not contain areas with “moderate” and “non-wildland fuel” ranks. The Project site and surrounding areas are generally identified as “Local: Non-Wildland/Non-Urban.”

Fire Threat to People

As stated, there are three areas of the City located within a moderate fire hazard severity zone. There are no areas within the Project site or surrounding area classified as Very High or Extreme Fire Hazards.

3.15.2 REGULATORY SETTING

FEDERAL

FY 2001 Appropriations Act

Title IV of the Appropriations Act required the identification of “Urban Wildland Interface Communities in the Vicinity of Federal Lands that are at High Risk from Wildfire” by the U.S. Departments of the Interior and Agriculture.

Disaster Mitigation Act (2000)

Section 104 of the Disaster Mitigation Act of 2000 (Public Law 106-390) enacted Section 322, Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, which created incentives for state and local entities to coordinate hazard mitigation planning and implementation efforts, and is an important source of funding for fuels mitigation efforts through hazard mitigation grants.

National Incident Management System

The City adopted the National Incident Management System (NIMS), which provides a systematic, proactive approach to guide government agencies, nongovernmental organizations, and the private sector to work together to prevent, respond to, recover from, and mitigate the effects of incidents, regardless of cause, size, location, or complexity, in order to reduce the loss of life and property and harm to the environment. NIMS improves the City’s ability to prepare for and respond to potential incidents and hazard scenarios.

National Fire Plan 2000

The summer of 2000 marked a historic milestone in wildland fire records for the United States. Dry conditions (across the western United States), led to destructive wildfire events on an estimated 7.2 million acres, nearly double the 10-year average. Costs in damages including fire suppression activities were approximately 2.1 billion dollars. Congressional direction called for substantial new appropriations for wildland fire management. This resulted in action plans, interagency strategies, and the Western Governor's Association's "A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment - A 10-Year Comprehensive Strategy - Implementation Plan", which collectively became known as the National Fire Plan. This plan places a priority on collaborative work within communities to reduce their risk from large-scale wildfires.

Healthy Forest Initiative 2002/Healthy Forest Restoration ACT 2003

In August 2002, the Healthy Forests Initiative (HFI) was launched with the intent to reduce the severe wildfires risks that threaten people, communities, and the environment. Congress then passed the Healthy Forests Restoration Act (HFRA) on December 3, 2003 to provide the additional administrative tools needed to implement the HFI. The HFRA strengthened efforts to restore healthy forest conditions near communities by authorizing measures such as expedited environmental assessments for hazardous fuels projects on federal land. This Act emphasized the need for federal agencies to work collaboratively with communities in developing hazardous fuel reduction projects and places priority on fuel treatments identified by communities themselves in their Community Wildfire Protection Plans.

Department of the Interior Department Manual Part 620

Part 620: Wildland Fire Management of the Department of the Interior Departmental Manual pertains to wildland fire management policies, with the goal of providing an integrated approach to wildland fire management. The guiding principles of the plan emphasize the need for public health and safety considerations, risk management protocols, inter-agency collaboration, and economic feasibility of wildfire management practices, as well as the ecological role of wildfires.

STATE

California Strategic Fire Plan

This statewide plan is a strategic document, which guides fire policy for much of California. The plan is aimed at reducing wildfire risk through pre-fire mitigation efforts tailored to local areas through assessments of fuels, hazards, and risks.

California State Multi-Hazard Mitigation Plan

The purpose of the State Multi-Hazard Mitigation Plan (SHMP) is to significantly reduce deaths, injuries, and other losses attributed to natural- and human-caused hazards in California. The SHMP provides guidance for hazard mitigation activities emphasizing partnerships among local, state, and federal agencies as well as the private sector.

California Government Code

California Government Code Section 65302.5 requires the draft safety element or draft amendment to the safety element of a county or a city's General Plan be submitted to the State Board of Forestry and Fire Protection for review when the county contains state responsibility areas or the city or county contains a very high fire hazard severity zone. While not a direct and binding fire prevention requirement, general plans that adopt the Board's recommendations will include goals and policies that provide for contemporary fire prevention standards for the jurisdiction.

California Government Code Section 51175 defines Very High Fire Hazard Severity Zones and designates lands considered by the State to be a very high fire hazard.

California Government Code Section 51189 directs the Office of the State Fire Marshal to create building standards for wildland fire resistance. The code includes measures that increase the likelihood of a structure withstanding intrusion by fire (such as building design and construction requirements that use fire-resistant building materials) and provides protection of structure projections (such as porches, decks, balconies and eaves), and structure openings (such as attics, eave vents, and windows).

California Public Resource Code

The State's Fire Safe Regulations are set forth in Public Resources Code Section 4290, which include the establishment of SRAs.

Public Resources Code Section 4291 sets forth defensible space requirements, which are applicable to anyone that ...owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land that is covered with flammable material (§4291(a)).

Public Resources Code Sections 4292-4296 and 14 CCR 1256, Fire Prevention for Electrical Utilities, address the vegetation clearance standards for electrical utilities. They include the standards for clearing around energy lines and conductors such as power-line hardware and power poles. These regulations are critical to wildland fire safety because of the substantial number of power lines in wildlands, the historic source of fire ignitions associated with power lines, and the extensive damage that results from power line caused wildfires in severe wind conditions.

Assembly Bill 337

Per Assembly Bill 337, local fire prevention authorities and CalFire are required to identify VHFHSZs in LRAs. Standards related to brush clearance and the use of fire resistant materials in fire hazard severity zones are also established.

Uniform Fire Code

The Uniform Fire Code (UFC) establishes standards related to the design, construction, and maintenance of buildings. The standards set forth in the UFC range from designing for access by firefighters and equipment and minimum requirements for automatic sprinklers and fire hydrants to the appropriate storage and use of combustible materials.

Senate Bill No. 1241

California Senate Bill No. 1241 requires that the Safety Element component of city or county general plans to incorporate fire risk related to SRAs and Very High Fire Hazard Severity Zones.

Code of Regulations Title 8 (Cal/OSHA)

In accordance with CCR, Title 8, Section 1270 and Section 6773 (Fire Prevention and Fire Protection and Fire Equipment), the Occupational Safety and Health Administration (Cal OSHA) establishes fire suppression service standards. The standards range from fire hose size requirements to the design of emergency access roads.

Code of Regulations Title 14 (Natural Resources)

Division 1.5 (Department of Forestry and Fire Protection), Title 14 of the CCR establishes a variety of wildfire preparedness, prevention, and response regulations.

Code of Regulations Title 19 (Public Safety)

Title 19 of the CCR establishes a variety of emergency fire response, fire prevention, and construction and construction materials standards.

LOCAL

San Joaquin Office of Emergency Services

The mission of the Office of Emergency Services (OES) is to minimize or reduce injury, loss of life, environmental and property damage from emergencies within San Joaquin County. OES is the key disaster preparedness office of the County, and has direct responsibility to support and coordinate the efforts of County departments carrying out their functions in the field. To ensure a coordinated response to their disaster needs, OES also provides disaster information, logistical support, facilitates mutual aid requests, and facilitates inter-jurisdictional coordination with agencies from 7 cities, 120 special districts, and locally-based State and Federal agencies.

City of Manteca Municipal Code

The City of Manteca's Municipal Code addresses wildfires and associated fire protection in Titles 8, 15, 16, and 17.

Title 8 – Health and Safety (8.08 Fireworks); this section covers sale, use, storage, public firework displays, and requiring permits from the Fire Marshal.

Title 15 - Buildings and Construction (15.24.070 Fire Code); this section includes the adoption of the 2016 California Fire code and additional amendments.

Title 16 - Subdivisions (16.23.030 Improvements Required); this section discusses the requirements for subdivisions including providing appropriate fire protection and fire protection facilities.

Title 17 – Zoning (17.58.040 Hazardous Materials); this section discusses hazardous materials, including disclosure to the Fire Department and San Joaquin County Health Department.

3.15.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact related to wildfires if:

- Located in or near State Responsibility Areas or lands classified as very high fire hazard severity zones, the project would:
 - Substantially impair an adopted emergency response plan or emergency evacuation plan.
 - 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.
 - 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.
 - 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.

IMPACTS AND MITIGATION MEASURES

Impact 3.15-1: Project implementation would not have a significant impact related to wildfire risks associated with lands in or near State Responsibility Areas or lands classified as very high fire hazard severity zones (No Impact)

The Project Site is not located in or near any State Responsibility Areas and there are no lands classified as VHFHSZ within or near the Project Site. Therefore, the proposed Project would have **no impact** related to wildfire risks associated with lands in or near SRAs or lands classified as very high fire hazard severity zones.

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) to evaluate a project's effects in relationship to broader changes occurring, or that are foreseeable to occur, in the surrounding environment. Accordingly, this chapter presents a discussion of CEQA-mandated analysis for cumulative impacts, significant irreversible effects, and significant and unavoidable impacts associated with the proposed Project.

4.1 CUMULATIVE SETTING AND IMPACT ANALYSIS

INTRODUCTION

CEQA requires that an EIR contain an assessment of the cumulative impacts that could be associated with the proposed Project. According to CEQA Guidelines Section 15130(a), "an EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable." "Cumulatively considerable" means that the incremental effects of an individual 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 (as defined by Section 15130). As defined in CEQA Guidelines Section 15355, a cumulative impact consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. A cumulative impact occurs from:

...the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

In addition, Section 15130(b) identifies that the following three elements are necessary for an adequate cumulative analysis:

1) Either:

(A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or,

(B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.

2) A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available; and

4.0 OTHER CEQA-REQUIRED TOPICS

3) A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.

CUMULATIVE SETTING

The cumulative setting uses growth projections listed in the general plan, municipal services review, other planning documents and Department of Finance statistics. Table 4.0-1 shows growth projections.

TABLE 4.0-1: GROWTH PROJECTIONS

CALENDAR YEAR	ESTIMATED POPULATION (MANTECA)	ESTIMATED POPULATION (SAN JOAQUIN COUNTY)	ESTIMATED POPULATION (CALIFORNIA)
2020	84,800	766,644	40,619,346
2025	98,833	822,755	42,373,301
2030	115,187	893,354	44,085,600
2035	134,248	966,889	45,747,645
2040	156,463	1,037,761	47,233,240
2045	182,354	1,037,761	47,233,240

SOURCES: UNIVERSITY OF THE PACIFIC – SAN JOAQUIN COUNTY FORECAST SUMMARY AND SJCOG GROWTH PROJECTIONS, CITY OF MANTECA (2016), DEPARTMENT OF FINANCE (2016). MANTECA HISTORICAL GROWTH RATE FROM 1980-2020 WAS 3.1%, WHICH WAS EXTRAPOLATED THROUGH 2045.

CUMULATIVE EFFECTS OF THE PROJECT

Cumulative settings are identified under each cumulative impact analysis. Cumulative settings vary because the area that the impact may affect is different. For example, noise impacts generally only impact the local surrounding area because noise travels a relatively short distance while air quality impacts affect the whole air basin as wind currents control air flow and are not generally affected by natural or manmade barriers which would affect noise. Cumulative Project impacts are addressed and summarized below.

Method of Analysis

Although the environmental effects of an individual project may not be significant when that project is considered separately, the combined effects of several projects may be significant when considered collectively. State CEQA Guidelines 15130 requires a reasonable analysis of a project's cumulative impacts, which are defined as "two or more individual effects which, when considered together are considerable or which compound or increase other environmental impacts." The cumulative impact that results from several closely related projects is: the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time

(State CEQA Guidelines 15355[b]). Cumulative impact analysis may be less detailed than the analysis of the project's individual effects (State CEQA Guidelines 15130[b]).

There are two approaches to identifying cumulative projects and the associated impacts. The list approach identifies individual projects known to be occurring or proposed in the surrounding area in order to identify potential cumulative impacts. The projection approach uses a summary of projections in adopted General Plans or related planning documents to identify potential cumulative impacts. This EIR uses the projection approach for the cumulative analysis and considers the development anticipated to occur upon buildout of the various General Plans in the area.

Project Assumptions

The proposed Project's contribution to environmental impacts under cumulative conditions is based on full buildout of the Project site. See Chapter 2.0, Project Description, for a complete description of the proposed Project.

Cumulative Impacts

Some cumulative impacts for issue areas are not quantifiable and are therefore discussed in general terms as they pertain to development patterns in the surrounding region. Exceptions to this are traffic, utilities, noise and air quality (the latter two of which are associated with traffic volumes), which may be quantified by estimating future traffic patterns, pollutant emitters, etc. and determining the combined effects that may result. In consideration of the cumulative scenario described above, the proposed Project may result in the following cumulative impacts.

AESTHETICS AND VISUAL RESOURCES

The cumulative setting for aesthetics is the City of Manteca and surrounding areas of Lathrop and San Joaquin County.

Impact 4.1: Cumulative Damage to Scenic Resources within a State Scenic Highway (Less than Significant and Less than Cumulatively Considerable)

There are no designated State Scenic Highways in the vicinity of the Project site. Only one highway section in San Joaquin County is listed as a Designated Scenic Highway by the Caltrans Scenic Highway Mapping System; the segment of State Route 580 from Interstate 5 to State Route 205. This route traverses the edge of the Coast Range to the west and Central Valley to the east. The City of Manteca and the Project site are not visible from this roadway segment. Additionally, there are no "eligible" highway segments in the vicinity of the Project site that may be included in the State Scenic Highway system. Cumulative development in the city would not impact a Designated Scenic Highway. Implementation of the proposed Project would have a **less than significant** cumulative impact relative to this environmental topic. As such, impacts relative to scenic resources would be a **less than cumulatively considerable contribution** and no mitigation is required.

Impact 4.2: Cumulative Degradation of the Existing Visual Character of the Region (Cumulatively Considerable and Significant and Unavoidable)

As described in Section 3.1, Aesthetics and Visual Resources, implementation of the proposed Project would convert the 161.19-acre Development Area from its existing use as primarily agricultural land to a residential neighborhood with associated park areas. Implementation of the proposed development standards and consistency with the General Plan and the Manteca Zoning Ordinance would ensure that impacts are reduced to the greatest extent possible. Nevertheless, impacts related to degradation of the visual character of the site would be significant and unavoidable.

Under cumulative conditions, buildout of the General Plan for Manteca and the surrounding jurisdictions could result in changes to the visual character and quality of the City of Manteca through development of undeveloped areas and/or changes to the character of existing communities. Development of the proposed Project, in addition to other future projects in the area, would change the existing visual and scenic qualities of the City. There are no mitigation measures that could reduce this impact except a ceasing of all future development, which is not a feasible option. As such, this is a **cumulatively considerable contribution** and a **significant and unavoidable** impact.

Impact 4.3: Cumulative Impact on Light and Glare (Less than Significant and Less than Cumulatively Considerable)

Implementation of the lighting plan required by Mitigation Measure 3.1-1 would ensure that lighting features do not result in light spillage onto adjacent properties and do not significantly impact views of the night sky. Adherence to the regulations and standards within the Manteca Municipal Code would ensure that excessively reflective building materials are not used, and that the proposed Project would not result in significant impacts related to daytime glare.

Future projects within Manteca, Lathrop, and San Joaquin County would be subject to the light and glare standards established by the individual jurisdictions. These regulations are designed to minimize potential light and glare impacts of new development. Implementation of these regulations would ensure that future projects minimize their potential cumulative light and glare impacts resulting in a **less than significant** cumulative impact relative to this environmental topic. As such, impacts related to nighttime lighting and daytime glare would be a **less than cumulatively considerable contribution**.

AGRICULTURAL RESOURCES

The cumulative setting for agriculture and forest resources is all of San Joaquin County. According to the Department of Conservation, the total acreage of crop land in the county is approximately 772,762 acres. The gross value of agricultural production in San Joaquin County for 2019 was \$2,617,815,000 which represents a 9.1 percent increase from 2018 when gross production value totaled \$2,594,246,000.

Impact 4.4: Cumulative Impact on Agricultural Resources (Cumulatively Considerable and Significant and Unavoidable)

As described in Section 3.2, of the proposed Project would result in the permanent conversion of approximately 10.3 acres of Prime Farmland and 148.0 acres of Farmland of Statewide Importance. The loss of Important Farmland as classified under the Farmland Mapping and Monitoring Program is considered a potentially significant environmental impact.

The City's agricultural mitigation fee program requires that future development pay the agricultural mitigation fee, currently \$2,956.2 per acre, to mitigate the conversion of agricultural land to urban use. The City will use these funds to purchase conservation easements or deed restrictions on agricultural land to ensure that the land remains in agricultural use in perpetuity.

In addition to the City's agricultural mitigation fee program, the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) requires development to pay fees on a per-acre basis for impacts to agricultural lands that function as habitat for biological resources. SJCOG will then use these funds to purchase the conservation easements on agricultural and habitat lands in the Project vicinity. The compensation results in the purchase of conservation easements that are placed over agricultural land, such as alfalfa and row crops. As such, the Project fees paid to SJCOG as administrator of the SJMSCP will result in the preservation of agricultural lands in perpetuity.

The purchase of conservation easements and/or deed restrictions through the City agricultural mitigation fee program and the SJMSCP allows the landowners to retain ownership of the land and continue agricultural operations and preserves such lands in perpetuity.

While the proposed Project will contribute fees toward the purchase of conservation easements on agricultural lands through the City's agricultural mitigation fee program and the SJMSCP mitigation program, as required by Mitigation Measure 3.2-1, those fees and conservation easements would not result in the creation of new farmland to offset the loss that would occur with Project implementation. As such, the loss of Important Farmland would be a **cumulatively considerable contribution** and a **significant and unavoidable** impact.

AIR QUALITY

The cumulative setting for air quality impacts is the San Joaquin Valley Air Basin (SJVAB), which consists of eight counties, stretching from Kern County in the south to San Joaquin County in the north. The SJVAB is bounded by the Sierra Nevada in the east, the Coast Ranges in the west, and the Tehachapi mountains in the south.

Impact 4.5: Cumulative Impact on the Region's Air Quality (Cumulatively Considerable and Significant and Unavoidable)

Under buildout conditions in the San Joaquin County, the SJVAB would continue to experience increases in criteria pollutants and efforts to improve air quality throughout the basin would be hindered. As described in Section 3.3, San Joaquin County has a State designation Attainment or Unclassified for all criteria pollutants except for ozone, particulate matter of 10 microns or less in size (PM₁₀), and particulate matter of 2.5 microns or less in size (PM_{2.5}). San Joaquin County has a national designation of either Unclassified or Attainment for all criteria pollutants except for ozone

4.0 OTHER CEQA-REQUIRED TOPICS

and PM_{2.5}. Table 3.3-2 in Section 3.3 presents the State and Federal attainment status for San Joaquin County.

As discussed under Impact 3.3-1 in Section 3.3, 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 PM₁₀, and 15 tons per year PM_{2.5}.

As shown in Table 3.3-6, operational emissions would exceed the SJVAPCD thresholds of significance for NO_x. Therefore, the proposed Project is required to implement all feasible mitigation to reduce criteria pollutant emissions to below the applicable SJVAPCD thresholds of significance.

The proposed Project is subject to the SJVAPCD Rule 9510 (Indirect Source Rule [ISR]), which could result in substantial mitigation of NO_x and associated ROG emissions. The reductions are accomplished by the incorporation of mitigation measures into projects and/or by the payment of an Indirect Source Rule fee for any required reductions that have not been accomplished through Project mitigation commitments. The actual calculations will be determined and finalized by the SJVAPCD and Project applicants as individual projects are brought forward for approval under Rule 9510.

The substantial reductions in NO_x (and associated ROG) and PM₁₀ emissions accomplished by the application of the ISR represent the best achievable mitigation for indirect sources. However, even with the application of these measures, emissions levels would remain above the defined thresholds of significance. As such, implementation of the proposed Project would have a **cumulatively considerable contribution** and **significant and unavoidable** impact from air emissions.

BIOLOGICAL RESOURCES

The cumulative setting for biological resources includes the Project site and the greater San Joaquin County region. Development associated with implementation of the local General Plan(s) would contribute to the ongoing loss of natural and agricultural lands in San Joaquin County, including the Project site. Cumulative development would result in the conversion of existing habitat to urban uses. The local General Plan(s), in addition to regional, State and federal regulations, includes policies and measures that mitigate impacts to biological resources associated with General Plan buildout. Additionally, local land use authorities in San Joaquin County require development to participate in the SJMSCP, which is a habitat conservation plan and natural community conservation plan for San Joaquin County that provides a mechanism for compensatory mitigation for habitat and species loss in accordance with federal and State laws.

Impact 4.6: Cumulative Loss of Biological Resources Including Habitats and Special Status Species (Less than Significant and Less than Cumulatively Considerable)

Under cumulative conditions, buildout of the General Plan(s) within San Joaquin County will result in impacts to biological resources in the cumulative area through new and existing development.

The General Plan(s) includes policies that are designed to minimize impacts to the extent feasible and the SJMSCP has been established to provide a mechanism for compensatory mitigation and standardized avoidance and minimization measures as needed.

As described in Section 3.4, Biological Resources, construction in the Project site has the potential to result in impacts to special-status species in the region. Although there has been no documented sighting within the immediate area in, or near the Project site, the Project site provides potential habitat for several species, including those discussed in Section 3.4.

Mitigation Measure 3.4-1 requires participation with the SJMSCP, which includes fees that will be used to purchase conservation lands for a variety of special status species. The SJMSCP was created and adopted to address both the Project and cumulative impacts to biological resources, including special status species. The proposed Project will participate in the SJMSCP, including payment of fees and implementation of all Incidental Take Minimization Measures required by the SJCOG through the authorization of SJMSCP coverage.

Mitigation Measure 3.4-2 requires a landscape plan that includes tree planting specifications established by the Manteca Municipal Code (17.19.060) for the replacement of any trees, excluding orchard and non-native trees, to be removed at a ratio of 1:1. Replacement trees shall be planted on-site at a location that is agreeable to the City.

Implementation of Mitigation Measures 3.4-1 and 3.4-2 in Section 3.4 would reduce potentially cumulative impacts to a **less than significant** level. As such, impacts to biological resources would be a **less than cumulatively considerable contribution**.

CULTURAL AND TRIBAL RESOURCES

The geography of cultural resources impact can be defined by region, by political subdivision or by the geography of the cultural resources present in an area, where sufficient inventory data is available to define it. The cumulative setting for cultural resources includes all of the San Joaquin County. There are extensive cultural sites located in the region.

Impact 4.7: Cumulative Impacts on Known and Undiscovered Cultural and Tribal Resources (Less than Significant and Less than Cumulatively Considerable)

Cumulative development anticipated in the City of Manteca, including growth projected by adopted future projects, may result in the discovery and removal of cultural resources, including archaeological, paleontological, historical, and Native American resources and human remains. As discussed in Section 3.5, Cultural and Tribal Resources, the CHRIS search for the Project site indicated two historic period resources were previously recorded in the Development Area, including the Tesla-Salado Manteca 115 kV transmission line (#P-39-005337) and the Walthall Slough Dry Land Levee (#P39-005086). Additionally, the field survey identified two on-site residences (20329 South Airport Way and 20333 South Airport Way) that were more than 50 years in age and potentially historic resources.

The Tesla-Salado Manteca 115 kV transmission line was determined not to be eligible for the National Register of Historic Places (Cardno 2017). Additionally, Peak & Associates determined that

4.0 OTHER CEQA-REQUIRED TOPICS

the two on-site residences (20329 and 20333 South Airport Way) do not meet the thresholds under Criteria A-D of the CRHR and are not historical resources. However, it was determined that the Walthall Slough Dry Land Levee may be a significant resource as a part of the San Joaquin River Levee system. The proposed development would avoid the Walthall Slough Dry Land Levee.

Any previously unknown cultural resources which may be discovered during development of the proposed Project would be required to be preserved, either through preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. With implementation of the mitigation measures provided in Section 3.5, the proposed Project is not anticipated to considerably contribute to a significant reduction in cultural resources in the region.

All future projects in the regional vicinity would be subject to their respective General Plans (i.e. City of Manteca, City of Lathrop, and San Joaquin County), each of which have policies and measures that are designed to ensure protection of undiscovered cultural resources. In addition, all discretionary projects in these jurisdictions would require environmental review per regulations established in CEQA.

Implementation of the proposed Project would have a **less than significant** cumulative impact relative to this environmental topic. As such, impacts related to cultural resources would result in a **less than cumulatively considerable contribution**.

GEOLOGY AND SOILS

Impacts related to geology and soils are not inherently cumulative. Geology and soils concerns are related to risks, hazards or development constraints that are largely site-specific. However, seismic hazards are regional, and management of seismic hazards is vested with the local planning and building authority. For these reasons, the potential for cumulative geology and soils impacts are considered in the context of the City of Manteca and vicinity.

Impact 4.8: Cumulative Impact on Geologic and Soils Resources (Less than Significant and Less than Cumulatively Considerable)

As discussed in Section 3.6 Geology and Soils, implementation of the proposed Project has limited potential for liquefaction, liquefaction induced settlement, and lateral spreading. However, mitigation measures provided in Section 3.6 ensure this impact will be less than significant. While the City is not within an area known for its seismic activity, there will always be a potential for groundshaking caused by seismic activity anywhere in California, including the Project site. Seismic activity could come from a known active fault such as the Greenville fault, or any number of other faults in the region. In order to minimize potential damage to the buildings and site improvements, all construction in California is required to be designed in accordance with the latest seismic design standards of the California Building Code. Additionally, the City of Manteca has incorporated numerous policies relative to seismicity to ensure the health and safety of all people. Design in accordance with these standards and policies would reduce any potential impact to a less than significant level.

Geologic and soils impacts tend to be site-specific and Project-specific. With the mitigation measures presented in Section 3.6, implementation of the proposed Project would not result in increased risks or hazards related to geologic conditions in the cumulative setting area, nor would it result in any off-site or indirect impacts. Implementation of the proposed Project would have a **less than significant** cumulative impact relative to this environmental topic. As such, impacts related to geologic and soil resources would result in a **less than cumulatively considerable contribution**.

GREENHOUSE GASES, CLIMATE CHANGE AND ENERGY

The cumulative setting for greenhouse gas emissions and climate change impacts for this analysis is San Joaquin County, which is the boundary for the California Air Resources Board's regional greenhouse gas emissions reduction targets.

Impact 4.9: Cumulative Impact on Climate Change from Increased Project-Related Greenhouse Gas Emissions (Cumulatively Considerable and Significant and Unavoidable)

Greenhouse gas emissions from a single Project will not cause global climate change; however, greenhouse gas emission from multiple projects throughout a region or state could result in a cumulative impact with respect to global climate change.

In California, there has been extensive legislation passed with the goal of reducing greenhouse gas emissions. The legislative goals are as follows: 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.

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.

As presented in Table 3.7-1, short-term construction emissions of GHGs are estimated at a maximum of approximately 1,435 metric tons of CO₂ equivalent (MT CO₂e) per year. The Project is estimated to generate approximately 2,623 residents during the Project's operational phase.¹ Dividing this

¹ This estimate is based on the CalEEMod model's per-dwelling unit (du) estimate for Single Family Residences of approximately 3.17 persons per Single Family Residential du, and a total Project Single Family Residences count of 827.

4.0 OTHER CEQA-REQUIRED TOPICS

number of estimated residents generated by the Project by the total annual operational GHG emissions at Project buildout yields approximately 4.62 MT CO₂e/SP/Year, which is above the 2.62 MT CO₂e/SP/year in 2030 threshold based on emissions for the land use-driven emission sectors in the CARB GHG Inventory. Construction emissions, when amortized², would equal approximately emissions 47.8 MT CO₂e, which is equivalent to approximately 0.02 MT CO₂e/SP/Year. Therefore, the total annual GHG emissions at Project buildout would still yield approximately 4.62 MT CO₂e/SP/Year, after inclusion of the amortized construction emissions.

The proposed Project is required to implement Mitigation Measure 3.7-1 in an effort to reduce GHG emissions to the extent possible. However, even with implementation of all feasible mitigation, it may not be feasible for the Project to reduce greenhouse gas emissions at full Project buildout below the applicable threshold. Therefore, implementation of the proposed Project would have a **significant and unavoidable** cumulative impact relative to this environmental topic. Impacts related to climate change and greenhouse gas emissions would result in a **considerable contribution**.

HAZARDS AND HAZARDOUS MATERIALS

The cumulative context for the analysis of cumulative hazards and human health impacts is San Joaquin County, including all cumulative growth therein, as represented by full implementation of each respective General Plan (i.e., Manteca, Lathrop, and San Joaquin County). As discussed in Section 3.8 Hazards and Hazardous Materials, implementation of the proposed Project would not result in any significant impacts related to this environmental topic with the implementation of the mitigation measures provided in Section 3.8.

Impact 4.10: Cumulative Impact Related to Hazards and Hazardous Materials (Less than Significant and Less than Cumulatively Considerable)

The proposed Project, in conjunction with cumulative development in the region, would include areas designated for a variety of urban, agricultural, and open space uses as defined by the applicable General Plan. Cumulative development would include continued operation of, or development of, new facilities as allowed under each land use designation. New development would inevitably increase the use of hazardous materials within the region, resulting in potential health and safety effects related to hazardous materials use. For the most part, potential impacts associated with new and future development would be confined to commercial and industrial areas and would not involve the use of hazardous substances in large quantities or that would be particularly hazardous. Incidents, if any, would typically be site specific and would involve accidental spills or inadvertent releases. Associated health and safety risks would generally be limited to those individuals using the materials or to persons in the immediate vicinity of the materials and would not combine with similar effects elsewhere (i.e., construction workers). Hazard-related impacts tend to be site-specific and Project-specific. The Project site is not associated with any existing hazardous materials spills; however, there are numerous areas throughout the County where hazardous conditions are present.

² The amortization period used for this calculation is 30 years.

Implementation of the proposed Project would not result in significant increased risks of hazards in the cumulative setting area, nor would it result in any significant off-site or indirect impacts. Mitigation measures have been included to reduce the risk of on-site hazards associated with the use of on-site hazardous materials. Implementation of the proposed Project would have a **less than significant** cumulative impact relative to this environmental topic. As such, impacts related to hazards and hazardous materials would result in a **less than cumulatively considerable contribution**.

HYDROLOGY AND WATER QUALITY

Potential cumulative issues associated with surface waters can be addressed on a watershed basis, or in the case of groundwater, in the context of a groundwater basin. Because water resources are highly interconnected, the cumulative setting is based on San Joaquin County which is located in the San Joaquin River Hydrological Region. Cumulative development in this region, including the proposed Project, would impact the water quality and hydrological features of the San Joaquin River Hydrologic Region. The City of Manteca and much of the surrounding area is located in the Eastern San Joaquin River Groundwater Basin. This groundwater basin covers approximately 1,105 square miles. The majority of the Project site is located in the Oakwood Lake - San Joaquin River watershed. A very small portion of the southwestern corner of the Project Site is located within the Walthall Slough - San Joaquin River watershed. Any matter that may affect water quality draining from the Project site will eventually end up in the Delta or within the groundwater basin.

Impact 4.11: Cumulative Increases in Peak Stormwater Runoff from the Project site (Less than Significant and Less than Cumulatively Considerable)

Implementation of the proposed Project would increase the amount of impervious surfaces in the Project site, which could increase peak stormwater runoff rates and volumes on and downstream on the Project site. However, the proposed Project includes an extensive system of on-site stormwater collection facilities to accommodate the increased stormwater flows that would originate in the Project site.

All on-site storm drainage runoff will be collected through drain inlets in the landscaped areas and catch basins along the streets and within properties and conveyed via surface swales and underground trunk lines to detention and water quality basins. The conveyance systems and detention basins may include facilities designed to address water quality standards and requirements. Discharge from the basins will be conveyed through controlled flow pumping facilities to existing City of Manteca and SSJID dual use main storm drain laterals. The duration of the discharge will comply with City of Manteca standards. The water quality detention basins will be designed to comply with SWRCB and City of Manteca specifications and standards.

Conveyance of the detained storm drainage runoff from the proposed on-site dual use detention basins may be via either gravity flow drainage lines or pumped to existing realigned and upgraded City and SSJID dual use Laterals. Stormwater quality standards imposed and monitored by the Environmental Protection Agency (EPA) and the SWRCB through the City's NPDES permit require treatment of stormwater runoff prior to its release into natural drainage features or dual use South

SSJID and City Laterals. Stormwater quality is an integral part of the City's stormwater management system.

With the design and construction of flood control improvements, the proposed Project would not increase peak stormwater runoff. Implementation of the proposed Project would have a **less than significant** cumulative impact relative to this environmental topic. As such, impacts related to stormwater runoff would result in a **less than cumulatively considerable contribution**.

Impact 4.12: Cumulative Impacts Related to Degradation of Water Quality (Less than Significant and Less than Cumulatively Considerable)

The proposed Project, along with several of the related projects within the City of Manteca, would ultimately discharge stormwater runoff to the nearby Delta waterways. This would potentially degrade the water quality of the system.

Construction of the proposed Project would contribute to a cumulative increase in urban pollutant loading, which could adversely affect water quality. Cumulative development in the Manteca area, including the proposed Project, would also result in increased impervious surfaces that could increase the rate and amount of runoff, thereby potentially adversely affecting existing surface water quality through increased erosion and sedimentation. The primary sources of water pollution include: runoff from roadways and parking lots; runoff from landscaping areas; non-stormwater connections to the drainage system; accidental spills; and illegal dumping. Runoff from roadway and parking lots could contain oil, grease, and heavy metals; additionally, runoff from landscaped areas could contain elevated concentrations of nutrients, fertilizers, and pesticides.

The proposed Project will be required to comply with Mitigation Measure 3.9-1 which requires the development and approval of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP will include Best Management Practices (BMPs) to regulate stormwater quality for the Project site which will be designed in accordance with the City of Manteca's National Pollutant Discharge Elimination System Permit (NPDES) issued by the RWQCB. Mitigation Measure 3.9-2 requires non-structural BMPs that focus on preventing pollutants from entering stormwater. Non-structural BMPs are typically aimed at prevention of pollution through public education and outreach. Non-structural BMPs include: school educational programs, newsletters, website information, commercial, billboards/advertisements, river cleanups, and storm drain stenciling. Mitigation Measure 3.9-3 requires implementation of structural BMPs. Structural BMPs are aimed at the physical collection, filtering, and detaining of stormwater. Structural BMPs include items such as drop inlet filters, vault filters, hydrodynamic separators, surface detention basins, and underground detention facilities.

While there are no assurances that other projects in the County would incorporate the same degree or methods of treatment as the proposed Project, several of the projects within the City of Manteca would phase out existing agricultural runoff discharges from their respective sites and, similar to the proposed Project, could provide some level of water quality improvement. Also, each related Project that would discharge stormwater runoff would be required to comply with NPDES discharge permits from the RWQCB, which adjusts requirements on a case-by-case basis to avoid significant degradation of water quality. Therefore, while a greater quantity of urban runoff may be discharged to the Delta system with implementation of the related projects, because of an increase in

impervious surfaces, the associated surface water quality impacts would be expected to be less than significant because of improved or similar quality of runoff compared to existing conditions.

Compliance with City and County water quality protection regulations, approval from the RWQCB, and Mitigation Measures 3.9-1 through 3.9-3 would ensure that the proposed Project minimizes impacts to surface water quality. Implementation of the proposed Project would have a **less than significant** cumulative impact relative to this environmental topic. As such, impacts related to water quality would result in a **less than cumulatively considerable contribution**.

Impact 4.13: Cumulative Impacts Related to Degradation of Groundwater Supply or Recharge (Less than Significant and Less than Cumulatively Considerable)

The proposed Project would result in new impervious surfaces and could reduce rainwater infiltration and groundwater recharge. Infiltration rates vary depending on the overlying soil types. In general, sandy soils have higher infiltration rates and can contribute to significant amounts of ground water recharge; clay soils tend to have lower percolation potential; and impervious surfaces such as pavement significantly reduce infiltration capacity and increase surface water runoff.

The infiltration rate of the soils on the Project site is primarily considered high. Development of the Project site with impervious surfaces could reduce rainwater infiltration and groundwater recharge when compared to existing conditions. The park and open space areas totaling approximately 12.15 acres will remain largely pervious. The collection of rainwater for those areas of impervious surfaces will be routed into the proposed Project's storm drainage system and eventually flow into the San Joaquin River. The exact design of the drainage basin is not known at this time; therefore, it is not known whether the drainage basin will percolate or not (i.e. unlined or lined).

The Project site is located in the Eastern San Joaquin County Groundwater Basin. Most of the fresh groundwater is encountered at depths of less than 1,000 feet, and most of this shallow groundwater is unconfined. The Victor formation is the uppermost formation and extends from the ground surface to a maximum depth of about 150 feet. Compared to the underlying formations, the Victor formation is generally more permeable and the groundwater is typically unconfined. The underlying Laguna formation includes discontinuous lenses of unconsolidated to semi-consolidated sands and silts interspersed with lesser amounts of clay and gravel. The Laguna formation is hydraulically connected to the Victor formation and is estimated to be 750 to 1,000 feet thick. Moderate permeability has been reported within the Laguna formation with some highly permeable coarse-grained beds. Most of the municipal and industrial wells in the Manteca area penetrate through the Victor formation into the Laguna formation.

Water supplies to meet future demands include surface water purchased from SSJID, City produced groundwater and recycled water. The Nick C. DeGroot Water Treatment Plant (WTP) is commissioned for the SCWSP and is currently operated by SSJID. The WTP has a total Phase 1 capacity of 40,350 AFY and the Phase 2 capacity is anticipated to be 63,600 AFY. Phase 2 has not yet been implemented but is expected within the next few years, according to the SSJID website (accessed June 2021). Currently, the City is allotted 11,500 AFY under Phase 1 and a total of 18,500 AFY under Phase 2. The term of the City's water supply agreement with SSJID is through December 2029. The City and SSJID signed a new contract to extend this contract through 2049. Historically,

4.0 OTHER CEQA-REQUIRED TOPICS

the City has not utilized its full allocation of surface water due to system constraints and State and SSJID supply limits in response to the drought conditions. It is anticipated that the City will utilize the full amount of the SCWSP by 2025.. Future City groundwater pumping is estimated based on the safe yield for all groundwater pumping within the City’s planning area, less estimated groundwater pumping by other users. Recycled water demand projections assumed decreased use over time of water for crop irrigation, and implementation of a tertiary-treated irrigation supply by 2040.

For the reasons mentioned above, the proposed Project would not cause the substantial depletion of groundwater supplies or interfere substantially with groundwater recharge. Implementation of the proposed Project would have a **less than significant** and **less than cumulatively considerable** impact relative to this topic.

Impact 4.14: Cumulative Impacts Related to Flooding (Less than Significant and Less than Cumulatively Considerable)

As shown on Figure 3.9-2, the majority of the Project site is not within a 100-year flood zone as delineated by FEMA, with the exception of a small portion of the southwestern corner of the Project Site. That portion of the Project site that lies within the 100-year flood zone is not proposed for development of housing or other human occupied structures.

While the majority of the Project site is not within the 100-year flood hazard area, the entire Project site does lie within the 200-year flood hazard area. State floodplain legislation (SB 5) for the San Joaquin River region has resulted in stricter development standards beginning in 2016. Urban areas that depend on levee protection are required to have a 200-year level of flood protection by 2028. SB 5 prohibits a city or county within the Central Valley Flood Protection Plan area from approving a development agreement, discretionary permit or entitlement, tentative map or parcel map for any property within a flood hazard zone unless they can demonstrate any of the following:

- the project has already achieved the applicable level of flood protection,
- conditions have been imposed on the project approval that will eventually result in the applicable level of flood protection, or
- adequate progress is being made towards achievement of the applicable level of flood protection.

Adequate progress is defined as meeting all of the following:

- The levee improvement project scope, cost and schedule have been developed;
- In any given year, at least 90% of the revenues scheduled for that year have been appropriated and expended consistent with the schedule;
- Construction of critical features is progressing as indicated by the actual expenditure of budget funds;
- The city or county has not been responsible for any significant delay in completion of the system; and
- The above information has been provided to the DWR and the Central Valley Flood Protection Board and the local flood management agency shall annually report on the efforts to complete the project.

In 2018 the Cities of Lathrop and Manteca became members of San Joaquin Area Flood Control Agency (SJAFCA). As a result, SJAFCA became the sole Local Flood Management Agency (LFMA) of the Mossdale Tract area (area protected by Reclamation District [RD] 17 levees) with the responsibility to prepare the adequate progress reports on an annual basis. The existing RD 17 levees protecting the Mossdale Tract Area do not provide 200-year flood protection as required by state law. SJAFCA and RD 17, representing member agencies (i.e., Manteca), are engaged in efforts to meet this Urban Level of Protection (ULOP) requirement by 2028.

A Regional SJAFCA 200-Year Development Impact Fee (Regional DIF) paid by property owners developing within the 200-year floodplain was also adopted by SJAFCA in November 2018.

The existing plan for meeting state requirements includes two components: (1) RD 17's ongoing Levee Seepage Repair Project (LSRP) and (2) SJAFCA Levee Improvements to achieve 200-year flood protection (the Project). The SJAFCA Project consists of a fix-in-place levee improvement project and an extension of the existing dryland levee in Manteca.

During project development and planning, information was shared by the State of California regarding potential changes in hydraulics and hydrology due to climate change. SJAFCA is currently conducting a feasibility study funded by State of California under its Urban Flood Risk Reduction (UFRR) program. As part of that study, climate change information is being considered to determine what changes, if any, need to be made to the proposed SJAFCA Project to ensure it provides the appropriate standard of protection.

The City of Manteca does not directly control levee improvements made by the RDs, however, land use decisions at the City are dependent upon these districts to make progress toward completing necessary upgrades to meet Urban Level of Flood Protection criteria.

Additionally, because the Lumina at Machado Ranch Project site is located within the 200-year flood zone, Subsection C of Section 17.30.040 of the Manteca Municipal Code applies to the Project:

The review authority shall not approve the execution of a development agreement, a tentative map, or a parcel map for which a tentative map is not required, or a discretionary permit or other discretionary entitlement that would result in the construction of a new building, or construction that would result in an increase in allowed occupancy for an existing building, or issuance of a ministerial permit that would result in the construction of a new residence for property that is located within the F-200 Zone unless the review authority finds, based on substantial evidence in the record, one of the following:

- 1. The facilities of the State Plan of Flood Control or other flood management facilities protect the property to the urban level of flood protection in urban and urbanizing areas;*
- 2. The City has imposed conditions on a development agreement, map, permit, or entitlement that will protect the property to the urban level of flood protection in urban and urbanizing areas;*

4.0 OTHER CEQA-REQUIRED TOPICS

3. *The local flood management agency has made adequate progress (as defined in California Government Code Section 65007) on the construction of a flood protection system that will result in flood protection equal to or greater than the urban level of flood protection in urban or urbanizing areas; or*
4. *The property is located in an area of potential flooding of three feet or less from a storm event that has a one in two hundred chance of occurring in any given year, from sources other than local drainage, in urban and urbanizing areas.*

The facilities of the State Plan of Flood Control or other flood management facilities do not currently protect the Project site. Through Mitigation Measure 3.9-3, the City has imposed a condition that will protect the Project site to the urban level of flood protection. As of 2021, SJAFCA has made adequate progress (as defined in California Government Code Section 65007) on the construction of a flood protection system that will result in flood protection equal to or greater than the urban level of flood protection in urban or urbanizing areas. The Project site is located in an area of potential flooding of three feet or greater from a storm event that has a one in two hundred chance of occurring in any given year, from sources other than local drainage, in urban and urbanizing areas.

SJAFCA and the City of Manteca, as a member agency, will continue planning efforts to provide adequate funding for necessary improvements, pursuant to the SB 5 requirements. SJAFCA and RD 17 will continue to implement the two-component approach as described above that would phase in the flood control project improvements prior to 2028. Until the improvements are in place, the Lumina at Machado Ranch Project site would be subject to potential flooding risk of three feet or greater from a storm event that has a one in two hundred chance of occurring in any given year. This is a potentially significant impact until SJAFCA improvements are completed prior to 2028. Implementation of Mitigation Measure 3.9-3 would reduce this impact to a **less than significant** and **less than cumulatively considerable** impact relative to this topic.

LAND USE, POPULATION, AND HOUSING

The cumulative setting for land use and population impacts is the City of Manteca.

Impact 4.15: Cumulative Impact on Communities and Local Land Uses (Less than Significant and Less than Cumulatively Considerable)

Cumulative land use impacts, such as the potential for conflicts with adjacent land uses and consistency with adopted plans and regulations, are typically site- and Project-specific. As shown in Table 3.10-2, the Project is consistent with the City's existing General Plan policies and would not conflict with policies adopted to avoid or mitigate an environmental effect. When land uses are not consistent with a General Plan there are two courses of action: 1) the uses are not allowed due to the inconsistency, or 2) the land uses are changed through an amendment to the General Plan to create consistency. The proposed Project would require a minor General Plan Land Use Amendment to adjust the exact location and shape of the Park land use designation within Development Area. No changes are proposed for the Non-development Area 1. It is noted that the General Plan Update proposed changes to the land use in Non-development Area 2, and the proposed Land Uses under this General Plan Amendment are consistent with the General Plan Update. Figure 2.0-8 in Chapter

2.0, Project Description, shows the proposed boundary modification to the General Plan land use designations for the park area. Approval of the General Plan amendment would ensure that the proposed Project would be substantially consistent with the Manteca GP land use requirements.

Approval of the General Plan amendment would ensure that the proposed Project would be substantially consistent with the Manteca General Plan land use requirements and would have a **less than significant** and **less than cumulatively considerable** impact relative to the Manteca General Plan.

The Manteca Zoning Code implements the General Plan. The Project area is currently within the jurisdiction of San Joaquin County. The San Joaquin County LAFCo will require the Project site to be pre-zoned by the City of Manteca in conjunction with the proposed annexation. The City's pre-zoning will include the following zoning designations: Planned Development (PD), One-Family Dwelling Zoning District (R-1), General Commercial Zoning District (CG), and Mixed Use Commercial Zoning District (CMU). The pre-zoning would go into effect upon annexation into the City of Manteca. The proposed pre-zoning for the Project site is shown on Figure 2.0-9. These proposed zone changes would ensure that zoning would be consistent with the proposed General Plan designations within the Project site. The zoning ordinance establishes permitted uses, development densities and intensities, and development standards for each zone to ensure that public health, safety, and general welfare are protected, consistent with the purpose of the Zoning Code. All existing City development standards and zoning requirements for the proposed zoning are applicable to any activities on the Project site. The City will review each component of the proposed Project as plans (improvement plans, building plans, site plans, etc.) are submitted for final approval to ensure that they are consistent with the City's Zoning ordinance.

The City will review each component of the proposed Project as plans (improvement plans, building plans, site plans, etc.) are submitted for final approval to ensure that they are consistent with the City's Zoning ordinance. Approval of the zone change would ensure that the proposed Project would be consistent with the Zoning Code and will have a **less than significant** and **less than cumulatively considerable** relative to this topic.

Impact 4.16: Cumulative Impacts on Population and Housing (Less than Significant and Less than Cumulatively Considerable)

As described in Section 3.10, development of the Project would add 827 residential units. While the two existing residences within the Development Area would be demolished prior to development of the proposed Project, the existing residential structures in the Non-Development Area would remain. Therefore, the proposed Project would more than replace the housing that would be removed and would not displace substantial numbers of people or existing housing.

The Housing Element of the Manteca General Plan identifies that the City has capacity for 5,782 residential units on vacant and underdeveloped sites. The proposed Project would not result in indirect population growth beyond the City's planned capacity. Therefore, the proposed Project is not anticipated to exceed the planned growth (directly or indirectly) in the area beyond what is anticipated in the City of Manteca General Plan. Therefore, the proposed Project is not anticipated

4.0 OTHER CEQA-REQUIRED TOPICS

to exceed the planned growth (directly or indirectly) in the area beyond what is anticipated in the City of Manteca General Plan.

While the proposed Project will result in growth, it is not anticipated to significantly induce growth beyond the levels analyzed in the City's General Plan and Housing Element or displace substantial numbers of housing or people. Implementation of the proposed Project would have a **less than significant** cumulative impact relative to this environmental topic. As such, impacts related to population and housing would result in a **less than cumulatively considerable contribution**.

NOISE

The cumulative setting for noise impacts consists of the existing and future noise sources that could affect the Project site or surrounding uses.

Impact 4.17: Cumulative Exposure of Existing and Future Noise-Sensitive Land Uses to Increased Noise Resulting from Cumulative Development (Less than Significant with Mitigation and Less than Cumulatively Considerable)

The cumulative context for noise impacts associated with the proposed Project consists of the existing and future noise sources that could affect the Project or surrounding uses. Noise generated by construction would be temporary, and would not add to the permanent noise environment or be considered as part of the cumulative context.

Traffic: Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to the proposed Project and on-site activities resulting from operation of the proposed Project.

Existing Sensitive Receptors: Tables 3.10-4 and 3.10-5 in Section 3.10, Noise, show cumulative traffic noise levels with and without the proposed Project. As discussed in Section 3.10, under the City's existing General Plan, the Project's contribution of 2.5 dB would not exceed the City's increase criteria of 5-10 dB. Under the City's proposed General Plan, noise levels along Woodward Avenue west of Airport Way (includes Non-Development Area 1) are predicted to increase by 1.7 dB under Cumulative Plus Project conditions. Use of quiet pavement, as required by Mitigation Measure 3.10-4, would eliminate this increase.

Proposed Sensitive Receptors: Table 3.10-11 in Section 3.10 shows the predicted traffic noise levels at the proposed Development Area residential uses adjacent to the major Project-area arterial roadways. Based upon Table 3.10-11, exterior noise levels would exceed the City's 60 dBA L_{dn} normally acceptable exterior noise standard. The 60 dBA L_{dn} noise contours for Woodward Avenue and South Airport Way were found to extend to an approximate distance of 330 feet and 350 feet from the roadway centerlines, respectively. This would encroach into the outdoor activity areas of proposed residences. Therefore, use of a physical barrier, as required by Mitigation Measure 3.10-2, would be the only feasible method to reduce exterior noise levels to within the City's allowable exterior noise standard range. Additionally, based upon a 25-dB exterior-to-interior noise level reduction, interior noise levels are predicted to be up to 48 dB L_{dn} at second floors and 38 dBA L_{dn} at first floors. Accordingly, predicted interior noise levels along the first row of residential uses along

Woodward Avenue and South Airport Way are predicted to exceed the City's 45 dB L_{dn} interior noise level standard at second floor locations. Interior noise control measures, as required by Mitigation Measure 3.10-3, would be required to meet the City's interior noise level standards.

With these mitigation measures, implementation of the proposed Project would have a **less than significant** cumulative impact relative to traffic noise. As such, impacts related to population and housing would result in a **less than cumulatively considerable contribution**.

Construction Noise: Noise generated by construction would be temporary, and would not add to the permanent noise environment or be considered as part of the cumulative context. Mitigation Measures 3.10-1A and 3.10-1B require that construction activities adhere to the Municipal Code with respect to hours of operation, and that all equipment be fitted with factory equipped mufflers. With these mitigation measures, implementation of the proposed Project would have a **less than significant** cumulative impact relative to this environmental topic. As such, impacts related to construction noise would result a **less than cumulatively considerable contribution**.

MITIGATION MEASURE(S)

Implement Mitigation Measures 3.10-1A through 3.10-4.

PUBLIC SERVICES AND RECREATION

Cumulative setting would include all areas covered in the service areas of the City of Manteca Fire Department, Police Department, Parks and Recreation Department, the Manteca Unified School District, and any other relevant public services.

Impact 4.18: Cumulative Impact on Public Services and Recreation (Less than Significant and Less than Cumulatively Considerable)

Implementation of the proposed Project would contribute toward an increased demand for public services and facilities within the City of Manteca. It has been determined that the impacts to the Manteca Police, Manteca Fire, and Parks and Recreation Departments would be less-than-significant. Additionally, it has been determined that the impacts to the Manteca Unified School District would be less-than-significant. The proposed Project would be subject to all fees that are paid toward the enhancement of public services within the region. Payment of the applicable impact fees by the Project applicant, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the proposed Project, would assist in maintaining existing fire, police, schools, and park services. Implementation of the proposed Project would have a **less than significant** cumulative impact relative to this environmental topic. As such, impacts related to public services would result in a **less than cumulatively considerable contribution**.

TRANSPORTATION AND CIRCULATION

A Cumulative Conditions analysis was performed to identify potential impacts of the proposed Project under Cumulative Year (2042) conditions. The analysis reflects long-term development in the City of Manteca and other nearby jurisdictions using the original Manteca travel demand for casting (TDF) model. A full analysis is presented in Section 3.13 on pages 3.13-11 through 3.13-17,

3.13-24, and 3.13-25. See Impact 3.13-1 for the Cumulative Development Project daily vehicle-miles-traveled (VMT) discussion.

Impact 4.19: Under Cumulative conditions, Project implementation would not result in VMT increases that are greater than 85 percent of Baseline conditions (Less than Significant and Less than Cumulatively Considerable)

Table 3.13-10 in Section 3.13 presents the established Baseline Citywide VMT per single family residential household and the Cumulative Development Project VMT per household. The proposed development would generate an estimated average of 76.5 VMT per single family household, resulting in a total daily project VMT of 63,266. The development is anticipated to generate a total of 7,807 daily trips, indicating the average trip length would be approximately 8.1 miles. This is due to the fact that in the Cumulative Year, the number of jobs and the amount of commercial, retail, and recreational development in the city is anticipated to increase and residents would be able to travel shorter distances to access these types of land uses.

The Cumulative Development Project daily VMT of 76.5 represents an approximately 26 percent decrease from Baseline conditions. Because the development would not generate vehicle travel exceeding 15 percent below the established baseline, implementation of the proposed Project would have a **less than significant** cumulative impact relative to this environmental topic. The Project would result in a **less than cumulatively considerable contribution** to this topic.

Impact 4.20: Under Cumulative conditions, the proposed Project would not conflict with a program, plan, policy or ordinance addressing the circulation system, including transit, bicycle, and pedestrian facilities (Less than Significant with Mitigation and Less than Cumulatively Considerable)

The proposed Project is consistent with the Manteca Active Transportation Plan (ATP). The proposed Project includes bicycle and pedestrian improvements consistent with those required in the ATP. Additionally, the proposed Project includes bus turnouts on Woodward Avenue and Airport Way. Each of these improvements help create complete streets and are consistent with Goals C-2, C-9, and C-10 of the General Plan.

Implementation of the proposed Project would not result in a conflict with an existing or planned pedestrian facility, bicycle facility, or transit service/facility. Because the proposed Project would not conflict with adopted programs, plans, policies, or ordinances that address the circulation system, including transit, bicycle, and pedestrian facilities; this impact is considered **less than significant**. The Project would result in a **less than cumulatively considerable contribution** to this topic.

UTILITIES

The cumulative setting includes all areas covered in the service areas of the City's wastewater system, water system, stormwater system, and the solid waste collection and disposal services.

Impact 4.21 Cumulative Impact on Wastewater Utilities (Less than Significant and Less than Cumulatively Considerable)

The City of Manteca owns and operates a wastewater collection, treatment, and disposal system, and provides sewerage service to the City of Manteca and the City of Lathrop. On April 17, 2015, the RWQCB adopted Waste Discharge Requirements Order No. R5-2015-0026 NPDES NO. CA0081558, prescribing waste discharge requirements for the City of Manteca Wastewater Quality Control Facility (WQCF) and allowing expansion of the plant up to 17.5 mgd.

The City of Manteca's wastewater treatment system is currently in compliance with the WDR requirements of Order No. R5-2015-0026 NPDES NO. CA0081558. The wastewater treatment system options covered under this Order include: City of Manteca Wastewater Quality Control Facility (WQCF) including the collection system, basin/disposal fields, discharge to the San Joaquin River, and recycling conveyance and irrigation system. The development of the proposed Project would not exceed the wastewater discharge requirements in this Order as described under Impact 3.15-1 in Section 3.15. Implementation of the proposed Project would have a **less than significant** and **less than cumulatively considerable** impact relative to this topic.

The wastewater collection and conveyance system that will serve the proposed Project will consist of engineered infrastructure consistent with the City's existing infrastructure requirements. Sizing of existing infrastructure in the City varies based on location, but generally includes gravity sewers and force mains ranging in size from 8 to 24 inches, and pump stations. The existing facilities have undergone environmental review and have waste discharge permits from the State.

New wastewater collection and conveyance infrastructure needed for the proposed Project will require trenching/excavation of earth, and placement of pipe within the trenches at specific locations, elevations, and gradients. The applicant will refine the wastewater collection/conveyance infrastructure design through the development of improvements plans which undergo review by the Public Works Department to ensure consistency with the City's engineering standards. This improvement plan process will include full engineering design (i.e. location, depth, slope, etc.) of all conveyance infrastructure as well as a review of new sewer pump stations and new force mains if needed. Ultimately, the sanitary sewer collection system will be an underground collection system installed as per the City of Manteca standards and specifications. Sanitary sewer disposal and treatment will be to the City of Manteca WQCF.

Implementation of the proposed Project would have a **less than significant** and **less than cumulatively considerable** impact relative to this topic.

According to the City's 2012 Wastewater Collection System Master Plan Update, Low Density Residential uses are estimated to generate 1,338 gallons per acre per day. The Project site includes 146.63 acres of Low Density Residential. Using this rate, the proposed Low Density Residential uses would generate approximately 196,191 gallons per day (gpd) of wastewater. The Project does not propose to develop the non-development area of the Project site; therefore, no additional wastewater will be generated within the non-development area.

4.0 OTHER CEQA-REQUIRED TOPICS

The City's Existing General Plan designated the Development Area as LDR and Park and therefore anticipated development and potential annexation into the City. Given that projected wastewater generation volumes associated with the buildout of the Development Area would not exceed the projected wastewater generation volumes described in the WQCF Master Plan, implementation of the proposed Project would have a **less than significant** and **less than cumulatively considerable** impact relative to this topic.

Impact 4.22: Cumulative Impact on Water Utilities (Less than Significant and Less than Cumulatively Considerable)

The proposed Project would require extension of offsite water conveyance infrastructure to the Project site for water service. All offsite water utility improvements will be in or adjacent to existing roadways adjacent to the Project site, thereby limiting any potential impact to areas that were not already disturbed. Construction of the potable water infrastructure would not have the potential to induce growth beyond what is proposed because the infrastructure is not oversized to accommodate additional projects or growth.

The proposed Project would require the construction of new onsite water infrastructure for water service. All onsite water utility improvements will be within existing agricultural lands, the impacts of which are discussed in Section 3.2, Agricultural Resources. Construction of the onsite water infrastructure would not result in the extension of water utilities to an area of the City not currently served by water utilities, and as such, would not have the potential to indirectly induce population growth.

The proposed Project would not require the construction of new water treatment facilities or expansion of existing water treatment facilities for water service, except for a new well that is planned for within the boundary of the Project site. The City has adequate water supplies to support existing demand in the City in addition to the proposed Project under average daily and maximum daily demand conditions.

Manteca Water Demand: City potable and raw water demand in 2020 was approximately 16,253 AF, which may have been caused by a higher daytime population than normal due to stay-at-home orders and mandated closure of non-essential businesses in response to the COVID-19 pandemic.

The projected water demand for future land use area for the buildout of the General Plan areas, which includes the Proposed Project in the City's General Plan Update, was calculated by multiplying the projected land uses by the unit water demand factor. The resulting water demand projection was 17,971 AFY.

Therefore, the projected potable and raw water demand at buildout of the General Plan is 34,224 AFY (16,253 AFY existing plus 17,971 AFY projected). Buildout of the General Plan planning area is projected to occur shortly before 2050.

The City's existing and projected potable and raw water demand is shown in Table 4.0-2. The 2020 data reflect actual 2020 demand.

TABLE 4.0-2: EXISTING AND PROJECTED TOTAL WATER DEMAND IN NORMAL YEARS, AFY

	2020, CURRENT	2025	2030	2035	2040	2045
Total Water Demand	16,253	18,480	21,012	23,891	27,164	30,885

SOURCE: 2020 WATER DEMAND PER CITY OF MANTECA, PROJECTED GROWTH FROM WEST YOST

The City's projected water demand at buildout (based on existing water demand and buildout of the General Plan Update, and the projected water demand of the Proposed Project) is summarized in Table 4.0-3. The City's preliminary water demand projections for future developments with approved water supply, as of March 2021, have been updated by West Yost to be based on water use factors that were adjusted for SB X7-7 (see Table 2-2 in the WSA). These revised demand projections for future developments within the City are included in Appendix A of this WSA.

TABLE 4.0-3: CITY OF MANTECA PROJECTED BUILDOUT WATER DEMAND, AFY

PROPOSED LAND USE	AREA, ACRES(A)
Existing 2020 Water Demand	16,253
2040 General Plan Horizon Water Demand ¹	10,911
2045 Water Demand ²	3,721
Buildout of General Plan ³	3,339
Total Water Demand	34,224

SOURCES: 2020 WATER DEMAND PER CITY OF MANTECA, PROJECTED GROWTH FROM WEST YOST, CITY OF MANTECA GENERAL PLAN WATER SUPPLY REPORT. FEBRUARY 2021

Notes: ¹2040 General Plan Horizon Water Demand represents incremental increase in water demand beyond existing demand.

²2045 Water Demand represents incremental increase in water demand beyond existing and 2040 General Plan demand.

³General Plan Buildout represents incremental increase in water demand beyond the existing, 2040 General Plan, and 2045 demand.

Project Demand and Supply: Except for the nine existing dwelling units in the Non-development areas that will be connected to the City's potable water system, this WSA does not include the water demand for the remainder of the Non-development Areas since it is part of a separate future project. The Non-development Areas are proposed for annexation. Although there is no new water demand, the residences will shift water supply source from an existing private well to City water.

TABLE 4.0-4: PROJECTED WATER DEMAND FOR BUILDOUT OF THE PROPOSED PROJECT

LAND USE	GROSS AREA (ACRES)	DWELLING UNITS (DU)	WATER USE FACTOR		POTABLE WATER DEMAND (AFY)
LDR- Low Density Residential	146.6	827	439 ^(A)	gpd/DU	406.9
Non-Development Areas	19.1	9	439 ^(B)	gpd/DU	4.4
Parks and Open Space	10.9	--	3,600	gpd/acre	44.0
<i>Subtotal</i>	<i>157.5</i>	<i>827</i>			<i>455.3</i>
				UAFW ^(b)	27.3
				Total Demand	482.6

NOTES: GPD/AC = GALLONS PER DAY PER ACRES, GPD/DU = GALLONS PER DAY PER DWELLING UNIT, AFY = ACRE-FEET PER YEAR.

^(A) BASED ON LDR WATER USE FACTOR OF 2,240 GPD/ACRE AND AN AVERAGE DENSITY OF 5.1 DU/ACRE.

^(B) DENSITY OF EXISTING RESIDENCES IS UNKNOWN, SO THE WATER USE FACTOR FROM THE PROPOSED LOW DENSITY RESIDENTIAL IS USED. FUTURE DEVELOPMENT OF REMAINING AREA IS NOT PART OF THIS PROJECT.

SOURCE: LUMINA AT MACHADO RANCH PROJECT WATER SUPPLY ASSESSMENT (WEST YOST ASSOCIATES, 2021).

4.0 OTHER CEQA-REQUIRED TOPICS

Water demands for the proposed Project will be served using the City's existing and future portfolio of water supplies. The inclusion of existing and planned future supplies is specifically allowed by the Water Code:

Water Code section 10631(b): Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).

The applicants for the proposed Project will provide their proportionate share of required funding to the City for the acquisition and delivery of treated potable water supplies to the Project site.

Determination of Water Supply Sufficiency Based on the Requirements of SB 610: Water Code section 10910 states:

10910(c)(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.

Pursuant to Water Code section 10910(c)(4) and based on the technical analyses described in this WSA, the total projected water supplies determined to be available for the Proposed Project during Normal, Single Dry, and Multiple Dry years during a 20-year projection will meet the projected water demand associated with the Proposed Project, in addition to existing and planned future uses.

A comparison of the City's projected potable and raw water supplies and demands is shown in Table 4.0-5 for Normal, Single Dry, and Multiple Dry Years. Demand within the City's service area is not expected to exceed the City's supplies in any Normal year between 2020 and 2040. For purposes of this WSA, no demand reductions are assumed during dry years. With this assumption, the City's water demands are not expected to exceed water supplies in Single Dry Years or Multiple Dry Years.

The technical analyses shows that the total projected water supplies determined to be available for the Proposed Project during Normal, Single Dry, and Multiple Dry years during a 20-year projection will meet the projected water demand associated with the Proposed Project, in addition to existing and planned future uses. The proposed Project would not result in insufficient water supplies available to serve the Project from existing entitlements and resources. Therefore, the proposed Project would result in a **less than significant** and **less than cumulatively considerable** impact relative to this topic.

TABLE 4.0-5: SUMMARY OF POTABLE AND RAW WATER DEMAND VERSUS SUPPLY DURING HYDROLOGIC NORMAL, SINGLE DRY, AND MULTIPLE DRY YEARS

HYDROLOGIC CONDITION		SUPPLY AND DEMAND COMPARISON, AFY			
		2025	2030	2035	2040
NORMAL YEAR					
Available Potable and Raw Water Supply(a)		23,260	25,247	27,569	37,284
Total Water Demand(b)		18,480	21,012	23,891	27,164
Potential Surplus (Deficit)		4,780	4,235	3,678	10,120
Supply Shortfall, Percent of Demand		-	-	-	-
SINGLE DRY YEAR					
Available Potable and Raw Water Supply(a)		23,260	25,247	27,569	37,284
Total Water Demand(b)		18,480	21,012	23,891	27,164
Potential Surplus (Deficit)		4,780	4,235	3,678	10,120
Supply Shortfall, Percent of Demand		-	-	-	-
MULTIPLE DRY YEAR					
Multiple Dry Year 1	Available Potable and Raw Water Supply(a)	23,260	25,247	27,569	37,284
	Total Water Demand(b)	18,480	21,012	23,891	27,164
	Potential Surplus (Deficit)	4,780	4,235	3,678	10,120
	Supply Shortfall, Percent of Demand	-	-	-	-
Multiple Dry Year 2	Available Potable and Raw Water Supply(a)	23,260	25,247	27,569	37,284
	Total Water Demand(b)	18,480	21,012	23,891	27,164
	Potential Surplus (Deficit)	4,780	4,235	3,678	10,120
	Supply Shortfall, Percent of Demand	-	-	-	-
Multiple Dry Year 3	Available Potable and Raw Water Supply(a)	21,409	24,313	27,552	33,376
	Total Water Demand(b)	18,480	21,012	23,891	27,164
	Potential Surplus (Deficit)	2,929	3,301	3,661	6,212
	Supply Shortfall, Percent of Demand	-	-	-	-
Multiple Dry Year 4	Available Potable and Raw Water Supply(a)	21,409	24,313	27,552	33,376
	Total Water Demand(b)	18,480	21,012	23,891	27,164
	Potential Surplus (Deficit)	2,929	3,301	3,661	6,212
	Supply Shortfall, Percent of Demand	-	-	-	-
Multiple Dry Year 5	Available Potable and Raw Water Supply(a)	23,260	25,247	27,569	37,284
	Total Water Demand(b)	18,480	21,012	23,891	27,164
	Potential Surplus (Deficit)	4,780	4,235	3,678	10,120
	Supply Shortfall, Percent of Demand	-	-	-	-

(A) SURFACE WATER SUPPLY FROM TABLE 6-2 PLUS ASSUMED GROUNDWATER SUPPLY FROM TABLE 6-3.

(B) EQUALS THE CITY'S TOTAL PROJECTED POTABLE AND RAW WATER DEMAND (FROM TABLE 5-1 AND TABLE 5-4).

Impact 4.23: Cumulative Impact on Stormwater Facilities (Less than Significant and Less than Cumulatively Considerable)

The proposed Project includes storm drainage improvements. Onsite storm drainage would be installed to serve the proposed Project. As shown in Figure 2.0-14, development of the proposed Project would include construction of a new storm drainage system, including a drainage collection system, storm drain pump stations, and detention basins. The stormwater drainage detention basins will be constructed to meet the City of Manteca Standards. Discharge from the basins will be conveyed through controlled flow pumping facilities to existing City of Manteca and SSJID dual use

main storm drain laterals. It is noted that the locations of the proposed detention basins are conceptual and will be finalized during the design of Improvement Plans.

The proposed public storm drainage and water quality system is planned to function independently from surrounding developments. An internal layout of stormwater collection pipes with various sizes, as necessary, will be installed within the Development Area. A system of drainage swales may be included to treat and convey collected stormwater. All on-site storm drainage runoff will be collected through drain inlets in the landscaped areas and catch basins along the streets and within properties and conveyed via surface swales and underground trunk lines to the detention and water quality basins. The conveyance systems and detention basins may include facilities designed to address water quality standards and requirements. Discharge from the basins will be conveyed through controlled flow pumping facilities to existing City of Manteca and SSJID dual use main storm drain laterals. The duration of the discharge will comply with City of Manteca standards. The water quality detention basins will be designed to comply with SWRCB and City of Manteca specifications and standards.

Final engineering of the storm drainage system will be accomplished through the improvement plan preparation of each phase. Storm drainage infrastructure to serve the proposed Project will include an underground piped drainage system, detention park basins, and pumps as needed. The drainage systems would provide for short-term storm water detention, storm water conveyance for storm waters. The design of such infrastructure considers the drainage volume that flows through the drainage from the entire watershed to ensure that there isn't flooding. Implementation of the proposed Project would have a **less than significant** and **less than cumulatively considerable** impact relative to this topic.

Impact 4.24: Cumulative Impact on Solid Waste Facilities (Less than Significant and Less than Cumulatively Considerable)

Solid waste generated in the City is disposed at the Forward Landfill. Forward Landfill was projected to close in 2020 at current acceptance rates due to reaching its permitted size parameters. To increase the lifespan of the landfill, Forward, Inc. is planning to expand its disposal footprint. The City's projected increase in solid waste generation associated with future buildout of the proposed General Plan is within the permitted capacity of the Forward Sanitary Landfill expansion. The vast majority of landfill disposed from the City of Manteca went to Forward Sanitary Landfill.³ Other landfills that received waste from the City of Manteca include:

- Lovelace Materials Recovery Facility and Transfer Station
- San Joaquin County Hazardous Waste
- Foothill Sanitary Landfill
- North County

Forward Sanitary Landfill has a remaining capacity of 23,700,000 cubic yards, and has a current maximum permitted throughput of 8,668 tons per day. This landfill originally had a cease operation

³ Note: data provided by CalRecycle, based on information provided by County disposal reports.

date in the year 2020. A 17.3-acre expansion was approved in January of 2020 inside the landfill's existing boundaries along Austin Road east of Stockton Metropolitan Airport. The lifespan of the landfill will extend from 2030 to 2036 and an additional 8.2 million cubic yards of waste will be processed on two sites, an 8.7-acre parcel in the northeast corner and an 8.6-acre parcel on the south end of the property. The City will need to secure a new location or expand existing facilities when the Forward Landfill is ultimately closed. There are several options that the City will have to consider for solid waste disposal at that time which is estimated to be 2036, including the construction of new facilities or expansion of existing facilities.

At the closure of the Forward Landfill, the City can potentially utilize the Foothill Landfill and the North County Landfill as locations for solid waste disposal. The permitted maximum disposal at the Foothill Landfill is 1,500 tons per day and the North County Landfill is 825 tons per day. The remaining capacity of these landfills include 125 million cubic yards of solid waste at the Foothill Landfill, with an estimated cease operation date of 2054, and 35.4 million cubic yards of solid waste at the North County Landfill, which has an estimated cease operation date of 2035. The addition of solid waste associated with the proposed Project to the Foothill Landfill and North County Landfill would not exceed the combined landfills' remaining capacity of 160.4 cubic yards.

The Development Area is estimated to generate roughly 10 pounds per day per household (CalRecycle 2020). It is estimated that the proposed 827 residential units would generate 8,270 pounds per day of solid waste. The total solid waste generated by the proposed Project is estimated to be 4.14 tons per day.

The proposed Project would be required to comply with applicable state and local requirements including those pertaining to solid waste, construction waste diversion, and recycling. The addition of the volume of solid waste associated with the proposed Project, approximately 41.4 tons per day at total buildout, to the Forward Landfill would not exceed the landfill's remaining capacity through 2020. After the Foothill Landfill reached capacity, solid waste generated in Manteca would be sent to the Foothill Landfill. The Foothill Landfill has a capacity of 97,900,000 cubic yards and a projected closure date of 2054, which is adequate to serve the City and the Project site under cumulative conditions. As such, implementation of the proposed Project would have a **less than significant** cumulative impact relative to this environmental topic. Thus, impacts related to solid waste facilities would be a **less than cumulatively considerable contribution**.

WILDFIRE

Impact 4.25: Cumulative impact related to wildfire (No Impact and Less than Cumulatively Considerable)

The Project Site is not located in or near any State Responsibility Areas and there are no lands classified as very high fire hazard severity zones within or near the Project Site. Therefore, the proposed Project would have **no impact** related to wildfire risks associated with lands in or near State Responsibility Areas or lands classified as very high fire hazard severity zones. The Project's incremental contribution to cumulative wildfire impacts would be **less than cumulatively considerable**.

4.2 SIGNIFICANT IRREVERSIBLE EFFECTS

LEGAL CONSIDERATIONS

CEQA Section 15126.2(c) and Public Resources Code Sections 21100(b)(2) and 21100.1(a), require that the EIR include a discussion of significant irreversible environmental changes which would be involved in the proposed action should it be implemented. Irreversible environmental effects are described as:

- The project would involve a large commitment of nonrenewable resources;
- The primary and secondary impacts of a project would generally commit future generations to similar uses (e.g., a highway provides access to previously remote area);
- The project involves uses in which irreversible damage could result from any potential environmental accidents associated with the project; or
- The phasing of the proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Determining whether the proposed Project would result in significant irreversible effects requires a determination of whether key resources would be degraded or destroyed such that there would be little possibility of restoring them. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Consumption of Nonrenewable Resources

Consumption of nonrenewable resources refers to the loss of physical features within the natural environment, including the conversion of agricultural lands, loss of access to mining reserves, and nonrenewable energy use. The Project site has nonrenewable resources, including biological resources and agricultural resources.

As discussed in Section 3.4, Biological Resources, all impacts would be less than significant or less than significant with implementation of mitigation measures. As a result, the proposed Project will minimize the potential for impacts to the nonrenewable resources in the Planning Area, including biological resources and water resources, to the greatest extent feasible. More detailed and focused discussions of potential impacts to these nonrenewable resources are contained throughout this Draft EIR.

Nonrenewable agricultural resources such as agricultural land, farmland, and agricultural soils, would be converted during the construction and operation of the Project. The City's General Plan includes a variety of policies that seek to conserve and protect agricultural resources. These include policies that encourage the development of vacant lands within City boundaries prior to conversion of agricultural lands and ensure that urban development near existing agricultural lands will not unnecessarily constrain agricultural practices or adversely affect the economic viability of nearby agricultural operations. Nevertheless, as discussed in Section 3.2, Agricultural Resources, impacts related to the conversion of Important Farmland were determined to be significant and unavoidable. While the proposed Project will contribute fees toward the purchase of conservation easements on agricultural lands through the City's agricultural mitigation fee program and the SJMSCP (as required

by Mitigation Measure 3.2-1), those fees and conservation easements would not result in the creation of new farmland to offset the loss that would occur with Project implementation.

Irretrievable Commitments/Irreversible Physical Changes

Implementation of the proposed Project would result in irretrievable commitments by introducing development onto the site which is presently undeveloped. The conversion of agricultural lands to urban uses would result in an irretrievable loss of agricultural land, wildlife habitat, and open space.

A variety of resources, including land, energy, water, construction materials, and human resources would be irretrievably committed for development and infrastructure installation associated with development and operation of the proposed Project. Buildout of the Project would require the commitment of a variety of other non-renewable or slowly renewable natural resources such as lumber and other forest products, sand and gravel, asphalt, petrochemicals, and metals.

Additionally, a variety of resources would be committed to the ongoing operation and life of the Project. The introduction of new residential and park uses to the Project site will result in an increase energy demand associated with building operations, vehicle travel, equipment operation, and other activities. Fossil fuels are the principal source of energy and the Project will increase consumption of available supplies, including gasoline and diesel fuel, and natural gas. These energy resource demands relate to initial construction, operation, maintenance and the transport of people and goods to and from the Project site that would occur with implementation of the proposed Project.

Additionally, development will physically change the environment in terms of aesthetics, air emission, noise, traffic, open space, and natural resources. These physical changes are irreversible after development occurs.

MANDATORY FINDINGS OF SIGNIFICANCE

CEQA Guidelines Section 15065 states that a lead agency shall find that a project may have a significant effect on the environment where there is substantial evidence that the project has potential environmental effects that are individually limited but cumulatively considerable. As defined in CEQA Guidelines Section 15065(a)(3), cumulatively considerable means “that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.” Cumulative impacts are addressed previously in Section 4.1 for each of the environmental topics.

CEQA Guidelines Section 15065(a)(1) states that a lead agency shall find that a project may have a significant effect on the environment where there is substantial evidence that the project has the potential to (1) substantially reduce the habitat of a fish or wildlife species; (2) cause a fish or wildlife population to drop below self-sustaining levels; or (3) substantially reduce the number or restrict the range of an endangered, rare, or threatened species. These impacts are discussed below.

Additionally, as required by CEQA Guidelines Section 15065(a)(4), a lead agency shall find that a project may have a significant effect on the environment where there is substantial evidence that

the project has the potential to cause substantial adverse effects on human beings, either directly or indirectly. These impacts are discussed below.

Substantial Adverse Effects on Fish, Wildlife, and Plant Species

Section 3.4 (Biological Resources) of this Draft EIR fully addresses any impacts that might relate to the reduction of the fish or wildlife habitat, the reduction of fish or wildlife populations, and the reduction or restriction of the range of special-status species as a result of Project implementation. As described throughout the analysis in this Draft EIR, the proposed Project would not result in any significant impacts that would substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal to the environment. As described in greater detail in Section 3.4 (Biological Resources) any potentially significant impacts related to plant and animal species would be reduced to a less than significant level through implementation of goals, policies and implementation measures provided in the City's General Plan as well as through adherence to state and federal regulations. Therefore, this is considered a **less than significant** impact.

4.4 SIGNIFICANT AND UNAVOIDABLE IMPACTS

CEQA Guidelines Section 15126.2(b) requires an EIR to discuss unavoidable significant environmental effects, including those that can be mitigated but not reduced to a level of insignificance. The following significant and unavoidable impacts of the proposed Project are discussed in Sections 3.1, 3.2, 3.3, and 3.7, and previously in this chapter (cumulative-level). Refer to those discussions for further details and analysis of the significant and unavoidable impact identified below:

- Impact 3.1-1: Project implementation may result in substantial adverse effects on scenic vistas and resources or substantial degradation of visual character;
- Impact 3.2-1: The proposed Project has the potential to result in the conversion of Farmlands, including Prime Farmland and Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses;
- Impact 3.3-1: Project operation would 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;
- Impact 3.7-1: Project implementation would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases;
- Impact 4.2: Cumulative Degradation of the Existing Visual Character of the Region;
- Impact 4.4: Cumulative Impact on Agricultural Resources;
- Impact 4.5: Cumulative Impact on the Region's Air Quality; and,
- Impact 4.9: Cumulative Impact on Climate Change from Increased Project-Related Greenhouse Gas Emissions.

5.1 CEQA REQUIREMENTS

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) analyze a reasonable range of feasible alternatives that meet most or all project objectives while reducing or avoiding one or more significant environmental effects of the project. The range of alternatives required in an EIR is governed by a “rule of reason” that requires an EIR to set forth only those alternatives necessary to permit a reasoned choice (CEQA Guidelines Section 15126.6[f]). Where a potential alternative was examined but not chosen as one of the range of alternatives, the CEQA Guidelines require that the EIR briefly discuss the reasons the alternative was dismissed.

PROJECT OBJECTIVES

The principal objective of the proposed Project is the approval and subsequent implementation of the Lumina at Machado Ranch Project (the proposed Project). The quantifiable objectives of the proposed Project include annexation of 183.46 acres, including the proposed 161.19-acre Development Area, 19.11-acre Non-development area on 15 inhabited residential lots, and 3.16 acres of existing right-of-way. The quantifiable objectives include the development of the subdivision of 161.19 acres into 827 residential lots (100.46 acres), a centralized park totaling 10.87 acres (Lot F), plus 1.28 acres of levee access and pocket park (Lot G). Total parkland is 12.15 acres. In addition, there is open space provided in the form of frontage landscaping strips and a well site (Lots A, B, C, D, I, L, M and N - 38,864 sf frontage landscaping, and Lot J – 28,049 sf for a well site and frontage landscaping).

The proposed Project identifies the following objectives:

- Provide residential housing opportunities that are visually attractive and accommodate the future housing demand in Manteca.
- Establish a mixture of Low-Density Residential project types that collectively provide for local and regional housing and that take advantage of the area’s high level of accessibility.
- Provide infrastructure and park space that meets City standards, is integrated with existing and planned facilities and connections, and increases recreation opportunities for existing and future residents of the City.
- Establish a logical phasing plan designed to ensure that each phase of development would include necessary public improvements required to meet City standards.

ALTERNATIVES NOT SELECTED FOR FURTHER ANALYSIS

A Notice of Preparation (NOP) was circulated to the public to solicit recommendations for a reasonable range of alternatives to the proposed Project. Additionally, a public scoping meeting was held during the public review period to solicit recommendations for a reasonable range of alternatives to the proposed Project. No specific alternatives were recommended by commenting agencies or the general public during the NOP public review process.

5.0 ALTERNATIVES TO THE PROPOSED PROJECT

The City of Manteca considered alternative locations early in the public scoping process. The City's key considerations in identifying an alternative location were as follows:

- Is there an alternative location where significant effects of the Project would be avoided or substantially lessened?
- Is there a site available within the City's Sphere of Influence with the appropriate size and characteristics such that it would meet the basic Project objectives?

The City's consideration of alternative locations for the Project included a review of previous land use planning and environmental documents in Manteca including the General Plan. The search included a review of lands in the south part of Manteca that is located within the Sphere of Influence and is otherwise suitable for development. It was found that there are numerous approved projects and proposed projects that are currently under review in South Manteca. These approved and proposed projects are not available for acquisition by the Project applicant, and are not considered a feasible alternative for the Project applicant. Additionally, much of the undeveloped land located to the west of the Project site is located within a 200-year flood plain. The City has found that there are no feasible alternative locations that exist within the City's Sphere of Influence with the appropriate size and characteristics that would meet the basic Project objectives and avoid or substantially lessen a significant effect. The City has determined that alternative locations outside the Sphere of Influence would not be feasible because an expansion of the Sphere of Influence would induce unplanned growth and cause impacts greater than development on the Project site. For these reasons, the City of Manteca determined that there are no feasible alternative locations.

In addition, as discussed in *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553 (Goleta II), where a project is consistent with an approved general plan, no off-site alternative need be analyzed in the EIR. The EIR "is not ordinarily an occasion for the reconsideration or overhaul of fundamental land-use policy." (Goleta II, supra, 52 Cal.3d at p. 573.) In approving a general plan, the local agency has already identified and analyzed suitable alternative sites for particular types of development and has selected a feasible land use plan. "Informed and enlightened regional planning does not demand a project EIR dedicated to defining alternative sites without regard to feasibility. Such ad hoc reconsideration of basic planning policy is not only unnecessary, but would be in contravention of the legislative goal of long-term, comprehensive planning." (Goleta II, supra, 52 Cal.3d at pp. 572-573.) Here, the proposed Project is generally consistent with the types of uses considered in the Manteca General Plan and associated EIR, and thus, in addition to the reasons discussed above, an off-site alternative need not be further discussed in this EIR.

5.2 ALTERNATIVES CONSIDERED IN THIS EIR

Three alternatives to the proposed Project were developed based on input from City staff and the technical analysis performed to identify the environmental effects of the proposed Project. The alternatives analyzed in this EIR include the following three alternatives in addition to the proposed Project.

- **No Project (No Build) Alternative:** Under this alternative, development of the Project site would not occur, and the Project site would remain in its current existing condition.
- **Increased Density Alternative:** Under this alternative, the proposed Project would be developed with the same amenities as described in the Project Description, but the density of the residential uses would be increased.
- **Agriculture Protection Alternative:** Under this alternative, the proposed Project would be developed in such a way to protect those lands currently identified as prime farmland and farmland of statewide importance, by reducing the overall footprint of the developed areas to a greater extent than the Increased Density Alternative.

NO PROJECT (NO BUILD) ALTERNATIVE

Under the No Project (No Build) Alternative development of the Project site would not occur, and the Project site would remain in its current existing condition. It is noted that the No Project (No Build) Alternative would fail to meet the Project objectives identified by the City of Manteca.

INCREASED DENSITY ALTERNATIVE

Under this alternative, the proposed Project would be developed with the same components as described in the Project Description, but density of the residential uses would be increased. Under the Increased Density Alternative, the same number of residential units as the proposed project (827 units) would be constructed within the Development Area. The residential areas would be clustered throughout the Project site at increased densities to allow for an increase in park/open space areas. The residential density under the Increased Density Alternative would fall within the allowed density for the City's General Plan designation of Low Density Residential (2.1 to 8.0 dwelling units per acre [du/ac]). Under the proposed Project, the residential density would be 5.1 units per gross acre. Under the Increased Density Alternative, the residential density would be 8.0 units per gross acre. The 12.15-acres of total park/open space uses would be increased to 20.0 acres.

AGRICULTURE PROTECTION ALTERNATIVE

The reasoning behind this alternative is to present an alternative to protect some of the farmland on the Project site. Development of the proposed Project would result in the permanent conversion of approximately 10.3 acres of Prime Farmland and 148.0 acres of Farmland of Statewide Importance. Under this alternative, the proposed Project would be developed with the same components as described in the Project Description, but the residential areas would be reduced resulting in an increase of undeveloped land beyond the Increased Density Alternative. Residential units would be reduced from 827 to 620. The total Development Area acreage dedicated to proposed Project would be reduced by approximately 25 percent. The total acreage developed would be 118.15 acres, with 39.38 acres remaining in its current state. The 39.38 acres that would remain undeveloped would include the agricultural land only.

5.3 ENVIRONMENTAL ANALYSIS

The alternatives analysis provides a summary of the relative impact level of significance associated with each alternative for each of the environmental issue areas analyzed in this EIR. Following the analysis of each alternative, Table 5.0-1 summarizes the comparative effects of each alternative.

NO PROJECT (NO BUILD) ALTERNATIVE

Aesthetics and Visual Resources

The No Project (No Build) Alternative would leave the Project site in its existing state and would not result in increases in daytime glare or nighttime lighting. The visual character of the Project site would not change under this alternative compared to existing conditions.

As described in Section 3.1, the visual character of the Project site would be significantly altered as a result of Project implementation. Implementation of the City's Development Standards for Zoning District's for height and bulk and consistency with the General Plan and the Manteca Zoning Ordinance would ensure that impacts are reduced to the greatest extent possible. Nevertheless, impacts related to degradation of the visual character of the site would be significant and unavoidable.

Implementation of the lighting plan required by Mitigation Measure 3.1-1 would ensure that lighting features do not result in light spillage onto adjacent properties and do not significantly impact views of the night sky. Adherence to the mitigation measure would ensure that excessively reflective building materials are not used, and that the proposed Project would not result in significant impacts related to daytime glare. As such, impacts related to nighttime lighting and daytime glare would be less than significant with mitigation.

The proposed Project would result in potentially significant new sources of light and glare. The proposed Project would also result in impacts to the existing visual character or quality of the Project site and its surroundings. However, the No Project (No Build) Alternative would avoid these impacts altogether. As such, this impact would be reduced when compared to the proposed Project.

Agricultural Resources

Currently, the majority of the Project site is used for agricultural purposes. The No Project (No Build) Alternative would result in no development in on the Project site. As such, this alternative would have no impact on agricultural land, no potential for conflicts with existing agricultural resources, and no potential for conflict with regulations and plans intended to protect those resources. As such, this impact would be reduced when compared to the proposed Project.

Air Quality

Under buildout conditions in the San Joaquin County, the San Joaquin Valley Air Basin (SJVAB) would continue to experience increases in criteria pollutants and efforts to improve air quality throughout the basin would be hindered. As described in Section 3.3, San Joaquin County has a

State designation Attainment or Unclassified for all criteria pollutants except for ozone, particulate matter of 10 microns or less in size (PM₁₀), and particulate matter of 2.5 microns or less in size (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 3.3-2 in Section 3.3 presents the State and Federal attainment status for San Joaquin County.

As discussed under Impact 3.3-1 in Section 3.3, the San Joaquin Valley Air Pollution Control District (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 PM₁₀, and 15 tons per year PM_{2.5}.

As shown in Table 3.3-6, operational emissions would exceed the SJVAPCD thresholds of significance for NO_x. Therefore, the proposed Project is required to implement all feasible mitigation to reduce criteria pollutant emissions to below the applicable SJVAPCD thresholds of significance.

The proposed Project is subject to the SJVAPCD Rule 9510 (Indirect Source Rule [ISR]), which could result in substantial mitigation of NO_x and associated ROG emissions. The reductions are accomplished by the incorporation of mitigation measures into projects and/or by the payment of an Indirect Source Rule fee for any required reductions that have not been accomplished through Project mitigation commitments. The actual calculations will be determined and finalized by the SJVAPCD and Project applicants as individual projects are brought forward for approval under Rule 9510.

Under the No Project (No Build) Alternative, the Project site would not be developed, and there would be no net change in emissions and no potential for a conflict with any adopted plans or policies related to air quality. As such, this impact would be reduced when compared to the proposed Project.

Biological Resources

As described in Section 3.4, Biological Resources, construction in the Project site has the potential to result in impacts to special-status species in the region. Although there has been no documented sighting within the immediate area in, or near the Project site, the Project site provides potential habitat for several species, including those discussed in Section 3.4. Mitigation Measure 3.4-1 requires participation with the San Joaquin County Multi-Species Habitat Conservation and Open Space plan (SJMSCP), which includes fees that will be used to purchase conservation lands for a variety of special status species. The SJMSCP was created and adopted to address both the Project and cumulative impacts to biological resources, including special status species. The proposed Project will participate in the SJMSCP, including payment of fees and implementation of all Incidental Take Minimization Measures required by the San Joaquin Council of Governments (SJCOG) through the authorization of SJMSCP coverage. Mitigation Measure 3.4-2 requires a landscape plan that includes tree planting specifications established by the Manteca

5.0 ALTERNATIVES TO THE PROPOSED PROJECT

Municipal Code (17.19.060) for the replacement of any trees, excluding orchard and non-native trees, to be removed at a ratio of 1:1. Replacement trees shall be planted on-site at a location that is agreeable to the City.

Under the No Project (No Build) Alternative, the proposed Project would not be constructed, no habitat would be removed, and no ground disturbing activities would occur. As such, this impact would be reduced when compared to the proposed Project.

Cultural and Tribal Resources

As discussed in Section 3.5, Cultural and Tribal Resources, the CHRIS search for the Project site indicated two historic period resources were previously recorded in the Development Area, including the Tesla-Salado Manteca 115 kV transmission line (#P-39-005337) and the Walthall Slough Dry Land Levee (#P39-005086). Additionally, the field survey identified two on-site residences (20329 South Airport Way and 20333 South Airport Way) that were more than 50 years in age and potentially historic resources. Any previously unknown cultural resources which may be discovered during development of the proposed Project would be required to be preserved, either through preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. With implementation of the mitigation measures provided in Section 3.5, the proposed Project is not anticipated to considerably contribute to a significant reduction in cultural resources in the region.

The No Project (No Build) Alternative would result in no ground disturbing activities related to the proposed Project and would not have the potential to disturb or destroy cultural, historic, and archaeological resources, as well as paleontological resources. While the proposed Project is not anticipated to result in significant impacts to cultural resources with mitigation, the No Project (No Build) Alternative would result in less potential for impacts to cultural resources as the entire Project site would continue to be used for agriculture production. As such, this impact would be reduced when compared to the proposed Project.

Geology and Soils

The No Project (No Build) Alternative would result in the Project site remaining in its existing condition. The current uses on the Development Area are predominantly agricultural and undeveloped, except for two existing houses and barns and/or sheds with associated equipment in the northeastern portion of the site. Non-development Area 1 includes six existing residential homes just north of the Development Area and Woodward Avenue. Non-development Area 2 includes nine existing residential homes just north of Woodward Avenue, and West of Airport Way. The structures on the Project site would continue to be subject to seismic or geologic risks, including earthquakes, liquefaction, subsidence, etc. The No Project (No Build) Alternative would not involve new construction that could be subject to seismic, geologic or soils hazards; thus, this alternative would have no potential for impact. As such, this impact would be reduced when compared to the proposed Project.

Greenhouse Gases, Climate Change and Energy

As stated previously, short-term construction greenhouse gas (GHG) emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of the proposed Project. Short-term construction emissions of GHGs are estimated at a maximum of approximately 1,435 metric tons of CO₂ equivalent (MT CO₂e) per year. The Project is estimated to generate approximately 2,623 residents during the Project's operational phase.¹ Dividing this number of estimated residents generated by the Project by the total annual operational GHG emissions at Project buildout yields approximately 4.62 MT CO₂e/SP/Year, which is above the 2.62 MT CO₂e/SP/year in 2030 threshold based on emissions for the land use-driven emission sectors in the CARB GHG Inventory. Construction emissions, when amortized², would equal approximately emissions 47.8 MT CO₂e, which is equivalent to approximately 0.02 MT CO₂e/SP/Year. Therefore, the total annual GHG emissions at Project buildout would still yield approximately 4.62 MT CO₂e/SP/Year, after inclusion of the amortized construction emissions. The proposed Project is required to implement Mitigation Measure 3.7-1 in an effort to reduce GHG emissions to the extent possible. However, even with implementation of all feasible mitigation, it may not be feasible for the Project to reduce GHG emissions at full Project buildout below the applicable threshold.

Under the No Project (No Build) Alternative, the Project site would not be developed, and there would be no net change in emissions and no potential for a conflict with any adopted plans or policies related to GHG reductions. As such, this impact would be reduced when compared to the proposed Project.

Hazards and Hazardous Materials

The proposed Project includes components which will likely use a variety of common household hazardous materials including: paints, cleaners, cleaning solvents, pesticides, fertilizers, and fuel. There will be a risk of release of these materials into the environment if they are not stored and handled in accordance with best management practices approved by San Joaquin County Department of Environmental Health.

Under the No Project (No Build) Alternative, no new land uses would be introduced to the Project site, and the potential for hazardous material release on the Project site would be eliminated. As such, this impact would be reduced when compared to the proposed Project.

Hydrology and Water Quality

As described in Section 3.9, implementation of the proposed Project has the potential to result in the violation of water quality standards and the discharge of pollutants into surface waters during both construction and long-term operations. Construction operations could result in temporary increases in runoff, erosion, sedimentation, soil compaction and wind erosion effects that could

¹ This estimate is based on the CalEEMod model's per-dwelling unit (du) estimate for Single Family Residences of approximately 3.17 persons per Single Family Residential du, and a total Project Single Family Residences count of 827.

² The amortization period used for this calculation is 30 years.

5.0 ALTERNATIVES TO THE PROPOSED PROJECT

adversely affect soils and reduce the revegetation potential at construction sites and staging areas. The long-term operation of the proposed Project could result in long-term impacts to surface water quality from urban stormwater runoff and could enter groundwater or surface water systems. Mitigation measures provided in Section 3.9 reduce potential water quality impacts to a less than significant level. The proposed Project would not significantly impact groundwater recharge or place persons or structures in a flood hazard zone.

Under the No Project (No Build) Alternative, potential water quality impacts from construction and operation of the proposed Project would be eliminated. While groundwater recharge is not considered a significant impact under the proposed Project, under this alternative, the land will be kept in its present state with the majority of the Project site being used for agricultural purposes. The infiltration rate of the soils on the Project site is primarily considered high. The Project site is not a major source of groundwater recharge due to the lack of precipitation and the absence of a major water source. The No Project (No Build) Alternative will have a greater chance of groundwater recharge because it does not introduce large areas of impervious surfaces as would the proposed Project. As such, potential impacts related to hydrology and water quality would be reduced under the No Project (No Build) Alternative when compared to the proposed Project.

Land Use, Population, and Housing

The proposed Project is not expected to induce population growth that has not already been accounted for as a part of the existing General Plan, or analyzed in detail in this EIR. The proposed Project does not displace substantial numbers of persons or housing units. The Project would require a zoning and general plan amendment for land use changes, as well as annexation to the City of Manteca. However, impacts to land use are considered less than significant.

The No Project (No Build) Alternative would result in no changes to land use and would have no development. The proposed Project is not expected to induce substantial population increase that has not already been accounted for as a part of the approved General Plan, or analyzed in detail in this EIR. The proposed Project does not displace substantial numbers of persons or housing units. However, because the No Project (No Build) Alternative would not add any additional population and would not change land use patterns, impacts related to land use and population would be reduced when compared to the proposed Project.

Noise

The proposed Project could increase noise-generating activities associated with the maintenance and operation of the proposed Project, as well as from vehicular traffic. Mitigation measures provided in Section 3.12 would reduce all potential impacts to a less than significant level. Under the No Project (No Build) Alternative, the Project site would not be developed and there would be no potential for new noise sources. As such, this impact would be reduced when compared to the proposed Project.

Public Services and Recreation

Under the No Project (No Build) Alternative, the Project site would remain undeveloped and there would be no increased demand for public services or recreation. The recreational amenities within the proposed Project, however, would not be developed for community use. The No Project (No Build) Alternative would have a reduced impact when compared to the proposed Project because demand on public services would be reduced with compared to the proposed Project, with the possible exception of recreational park facilities.

Transportation and Circulation

The No Project (No Build) Alternative would not introduce additional vehicle, pedestrian, or bicycle travel on the area roadways. It was determined that the proposed Project would not result in vehicle-miles-traveled (VMT) increases that are greater than 85 percent of Baseline conditions, conflict with a program, plan, policy or ordinance addressing the circulation system, including transit, bicycle, and pedestrian facilities, or increase hazards due to a design feature, incompatible uses, or inadequate emergency access. The No Project (No Build) Alternative would have a reduced traffic impact when compared to the proposed Project.

Utilities

Implementation of the proposed Project would result in increased flows to the public wastewater system. The wastewater system is capable of handling the increased flows with their existing permit and infrastructure.

Implementation of the proposed Project would result in increased demand for potable water. The City has adequate water supply to handle the increased demand with their existing supply and infrastructure.

Implementation of the proposed Project would result in increased storm drainage from new impervious surfaces. The proposed Project includes a storm drainage collection system to handle the increased storm drainage.

Implementation of the proposed Project would result in increased generation of solid waste. However, the landfill has adequate capacity to dispose the solid waste.

Under the No Project (No Build) Alternative the Project site would not increase the demand for any utilities, including wastewater services, potable water supplies, or solid waste disposal. There would be no need to construct stormwater drainage infrastructure. Overall, the demand for utilities would be reduced under the No Project (No Build) Alternative when compared to the proposed Project.

Wildfire

The Project Site is not located in or near any State Responsibility Areas and there are no lands classified as very high fire hazard severity zones within or near the Project Site. Therefore, the proposed Project would have no impact related to wildfire risks associated with lands in or near State Responsibility Areas or lands classified as very high fire hazard severity zones.

5.0 ALTERNATIVES TO THE PROPOSED PROJECT

Under the No Project (No Build) Alternative, development of the Project site would not occur and the Project site would remain in its current existing condition. Although the Project would result in no impact related to wildfires, the No Project (No Build) Alternative would not introduce new residents to a vacant area of the City which could be subject to fires. Overall, impacts related to wildfires would be reduced under the No Project (No Build) Alternative when compared to the proposed Project.

INCREASED DENSITY ALTERNATIVE

Aesthetics and Visual Resources

As described in Section 3.1, the visual character of the Project site would be significantly altered as a result of proposed Project implementation. Implementation of the City's Development Standards for Zoning District's for height and bulk and consistency with the General Plan and the Manteca Zoning Ordinance would ensure that impacts are reduced to the greatest extent possible. Nevertheless, impacts related to degradation of the visual character of the site would be significant and unavoidable.

Implementation of the lighting plan required by Mitigation Measure 3.1-1 would ensure that lighting features do not result in light spillage onto adjacent properties and do not significantly impact views of the night sky. Adherence to the mitigation measure would ensure that excessively reflective building materials are not used, and that the proposed Project would not result in significant impacts related to daytime glare. As such, impacts related to nighttime lighting and daytime glare would be less than significant with mitigation.

These impacts would be similar with the Increased Density Alternative as this alternative is located on the same site and would have similar uses. This alternative would result in the same number of residential units and an increase in park/open space uses. The impacts of light and glare would still occur and could be mitigated to a less than significant level. The impacts to the existing visual quality would be similar to the proposed Project as the Project site would be developed with the same uses as under the proposed Project, just at a higher density. However, due to the increase in park/open space areas, the Increased Density Alternative would have a slightly reduced impact on visual resources when compared to the proposed Project.

Agricultural Resources

Currently, the majority of the Project site is used for agricultural purposes. The Increased Density Alternative would result in development of the entire Project site. While this alternative would increase the amount of park/open space areas, these areas would still be converted from agricultural use. As such, this alternative would not reduce the impacts to agricultural lands when compared to the proposed Project. The loss of the agricultural land, including prime farmland, would be a significant and unavoidable impact under both the Increased Density Alternative and the proposed Project. Therefore, the Increased Density Alternative would have equal impacts on agricultural resources when compared to the proposed Project.

Air Quality

Under buildout conditions in the San Joaquin County, the SJVAB would continue to experience increases in criteria pollutants and efforts to improve air quality throughout the basin would be hindered. As described in Section 3.3, San Joaquin County has a State designation Attainment or Unclassified for all criteria pollutants except for ozone, PM₁₀, 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 3.3-2 in Section 3.3 presents the State and Federal attainment status for San Joaquin County.

As discussed under Impact 3.3-1 in Section 3.3, 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 CO, 10 tons per year of NO_x, 10 tons per year of ROG, 27 tons per year of SO_x, 15 tons per year PM₁₀, and 15 tons per year PM_{2.5}.

As shown in Table 3.3-6, operational emissions would exceed the SJVAPCD thresholds of significance for NO_x. Therefore, the proposed Project is required to implement all feasible mitigation to reduce criteria pollutant emissions to below the applicable SJVAPCD thresholds of significance.

The proposed Project is subject to the SJVAPCD Rule 9510 (ISR), which could result in substantial mitigation of NO_x and associated ROG emissions. The reductions are accomplished by the incorporation of mitigation measures into projects and/or by the payment of an Indirect Source Rule fee for any required reductions that have not been accomplished through Project mitigation commitments. The actual calculations will be determined and finalized by the SJVAPCD and Project applicants as individual projects are brought forward for approval under Rule 9510.

Implementation of the proposed Project would cause an increase in traffic, which is the dominant source of air emissions associated with the proposed Project. Under the Increased Density Alternative, the proposed Project would be developed with the same components as described in the Project Description, but the amount of park/open space uses would be increased. The total development would be equal to the proposed Project. Therefore, the amount of traffic generated from the Project site would be equal under this alternative and the proposed Project. Mobile source air emissions are directly correlated to traffic volume; therefore, it is estimated that the similar trip volume would result in a similar amount of the mobile source emissions. Additionally, the area source emissions would be similar to the Project.

Uses in the Increased Density Alternative would be required to adhere to the same mitigation measures as the proposed Project. The Increased Density Alternative would result in similar air emissions when compared to the proposed Project.

Biological Resources

As described in Section 3.4, Biological Resources, construction in the Project site has the potential to result in impacts to special-status species in the region. Although there has been no

5.0 ALTERNATIVES TO THE PROPOSED PROJECT

documented sighting within the immediate area in, or near the Project site, the Project site provides potential habitat for several species, including those discussed in Section 3.4. Mitigation Measure 3.4-1 requires participation with the SJMSCP, which includes fees that will be used to purchase conservation lands for a variety of special status species. The SJMSCP was created and adopted to address both the Project and cumulative impacts to biological resources, including special status species. The proposed Project will participate in the SJMSCP, including payment of fees and implementation of all Incidental Take Minimization Measures required by the SJCOG through the authorization of SJMSCP coverage. Mitigation Measure 3.4-2 requires a landscape plan that includes tree planting specifications established by the Manteca Municipal Code (17.19.060) for the replacement of any trees, excluding orchard and non-native trees, to be removed at a ratio of 1:1. Replacement trees shall be planted on-site at a location that is agreeable to the City.

The Increased Density Alternative would result in development of the entire Project site. Under this alternative, there would be approximately 9.1 more acres of park/open space land that may provide habitat for a variety of species. This addition of park and open space land would provide biological benefits even though the remainder of the Project site would be developed. As such, the Increased Density Alternative would result in slightly less impact to biological resources when compared to the proposed Project.

Cultural and Tribal Resources

As discussed in Section 3.5, Cultural and Tribal Resources, the CHRIS search for the Project site indicated two historic period resources were previously recorded in the Development Area, including the Tesla-Salado Manteca 115 kV transmission line (#P-39-005337) and the Walthall Slough Dry Land Levee (#P39-005086). Additionally, the field survey identified two on-site residences (20329 South Airport Way and 20333 South Airport Way) that were more than 50 years in age and potentially historic resources. Any previously unknown cultural resources which may be discovered during development of the proposed Project would be required to be preserved, either through preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. With implementation of the mitigation measures provided in Section 3.5, the proposed Project is not anticipated to considerably contribute to a significant reduction in cultural resources in the region.

The Increased Density Alternative would result in development of the entire Project site, but would increase the amount of park/open space areas by 9.1 acres. Although the amount of park/open space areas would increase as compared to the proposed Project, the entire Project site would be disturbed. This would result in a similar potential to disturb or destroy cultural, historic, and archaeological resources, as well as paleontological resources. While the proposed Project is not anticipated to result in significant impacts to cultural resources with mitigation, the Increased Density Alternative would result in a similar potential for impacts to cultural resources.

Geology and Soils

As described in Section 3.6, implementation of the proposed Project would result in the construction of new structures on the Project site. The new structures would be subject to

seismic, geologic, and soils hazards for the life of the Project. Mostly notably, the proposed Project would be subject to liquefaction, liquefaction induced settlement, and lateral spreading. Mitigation measures identified in Section 3.6 would reduce the potential impacts to a less than significant level.

Under the Increased Density Alternative, the amount of developed area would be similar to the Project and an equal number of structures would be subject to hazardous geological conditions. While the proposed Project is not anticipated to result in significant impacts from geology and soils with mitigation, the Increased Density Alternative would result in similar potential for impacts when compared to the proposed Project.

Greenhouse Gases, Climate Change and Energy

As stated previously, short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of the proposed Project. Short-term construction emissions of GHGs are estimated at a maximum of approximately 1,435 MT CO₂e per year. The Project is estimated to generate approximately 2,623 residents during the Project's operational phase.³ Dividing this number of estimated residents generated by the Project by the total annual operational GHG emissions at Project buildout yields approximately 4.62 MT CO₂e/SP/Year, which is above the 2.62 MT CO₂e/SP/year in 2030 threshold based on emissions for the land use-driven emission sectors in the CARB GHG Inventory. Construction emissions, when amortized⁴, would equal approximately emissions 47.8 MT CO₂e, which is equivalent to approximately 0.02 MT CO₂e/SP/Year. Therefore, the total annual GHG emissions at Project buildout would still yield approximately 4.62 MT CO₂e/SP/Year, after inclusion of the amortized construction emissions. The proposed Project is required to implement Mitigation Measure 3.7-1 in an effort to reduce GHG emissions to the extent possible. However, even with implementation of all feasible mitigation, it may not be feasible for the Project to reduce GHG emissions at full Project buildout below the applicable threshold.

Under the Increased Density Alternative, the Project site would be developed with the same types of uses and structures as the proposed Project, but the amount of park/open space areas would be increased. All uses in the Increased Density Alternative would be required to adhere to the same mitigation measure as the proposed Project. The equal number of residential units would result in a corresponding equal level of GHG emissions when compared to the proposed Project. As such, the GHG emissions impact would be equal when compared to the proposed Project.

Hazards and Hazardous Materials

The proposed Project includes components which will likely use a variety of common household hazardous materials including: paints, cleaners, cleaning solvents, pesticides, fertilizers, and fuel. There will be a risk of release of these materials into the environment if they are not stored and

³ This estimate is based on the CalEEMod model's per-dwelling unit (du) estimate for Single Family Residences of approximately 3.17 persons per Single Family Residential du, and a total Project Single Family Residences count of 827.

⁴ The amortization period used for this calculation is 30 years.

5.0 ALTERNATIVES TO THE PROPOSED PROJECT

handled in accordance with best management practices approved by San Joaquin County Department of Environmental Health.

Under the Increased Density Alternative, the type and quantity of residential uses on the site would not change when compared to the proposed Project, but the amount of park/open space areas would increase. This alternative would still use the hazardous materials identified under the proposed Project. As such, this alternative would have equal impacts from hazards and hazardous materials impacts when compared to the proposed Project.

Hydrology and Water Quality

As described in Section 3.9, implementation of the proposed Project has the potential to result in the violation of water quality standards and the discharge of pollutants into surface waters during both construction and long-term operations. Construction operations could result in temporary increases in runoff, erosion, sedimentation, soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas. The long-term operation of the proposed Project could result in long-term impacts to surface water quality from urban stormwater runoff and could enter groundwater or surface water systems. Mitigation measures provided in Section 3.9 reduce potential water quality impacts to a less than significant level. The proposed Project would not significantly impact groundwater recharge or place persons or structures in a flood hazard zone.

Under the Increased Density Alternative, potential construction-related and long-term operational impacts to water quality or waste discharge related to stormwater runoff would be slightly reduced equivalent to the amount of land area that remains as park/open space under this alternative. The increased areas of park and open space under this alternative will remain pervious to precipitation, which will facilitate groundwater recharge and the natural biofiltration of stormwater. This alternative will still include stormwater detention/basins, and provide natural BMPs to reduce pollutants in stormwater runoff. As such, potential impacts related to hydrology and water quality would be slightly reduced under the Increased Density Alternative when compared to the proposed Project.

Land Use, Population, and Housing

The proposed Project is not expected to induce population growth that has not already been accounted for as a part of the existing General Plan, or analyzed in detail in this EIR. The proposed Project does not displace substantial numbers of persons or housing units. The Project would require a zoning and general plan amendment for land use changes, as well as annexation to the City of Manteca. However, impacts to land use are considered less than significant.

The Increased Density Alternative is not expected to induce substantial population growth in the area. Both the proposed Project and the Increased Density Alternative would not displace substantial numbers of persons or housing units. Similar to the proposed Project, development of the Increased Density Alternative would remove the housing units onsite, and add 827 residential units. Therefore, impacts relating to land use, population and housing would be equal under this alternative.

Noise

The proposed Project could increase noise-generating activities associated with the maintenance and operation of the proposed Project, as well as from vehicular traffic. Mitigation measures provided in Section 3.12 would reduce all potential impacts to a less than significant level. The Increased Density Alternative would result in the same number of residential units as the Project; therefore, the noise impacts associated with the alternative would be equal to the vehicular and operational activities of the proposed Project. All noise issues would be mitigated, as appropriate, through noise attenuation and best management practices; therefore, under this alternative, noise impacts are equal when compared to the proposed Project.

Public Services and Recreation

Development in the proposed Project will pay all applicable fees and assessments required to fund its fair share of public services and recreation. This funding would assist in the development of facilities in order to meet the City's standards. The proposed Project would have a less than significant impact to fire, police, and schools, and recreational facilities.

Under the Increased Density Alternative, the site would be developed with the same range of allowable uses as described in the Project Description, and number of the residential units would be equal. The increase in park/open space areas may result in an increase in irrigation water demand; however, these open space areas would increase the potential for on-site stormwater detention. Additionally, the increase in park/open space areas would provide for an increase in recreational opportunities for the proposed residents as compared to the Project. As such, this impact would be slightly reduced when compared to the proposed Project.

Transportation and Circulation

It was determined that the proposed Project would not result in VMT increases that are greater than 85 percent of Baseline conditions, conflict with a program, plan, policy or ordinance addressing the circulation system, including transit, bicycle, and pedestrian facilities, or increase hazards due to a design feature, incompatible uses, or inadequate emergency access.

Under this alternative, the proposed Project would be developed with the same components as described in the Project Description, but density of the residential uses would be increased. Under the Increased Density Alternative, the same number of residential units as the proposed project (827 units) would be constructed within the Development Area. The equal number of residential uses would result in an equal amount of vehicle trips generated from the Project site. Therefore, the Increased Density Alternative would result in similar traffic related impacts when compared to the proposed Project.

Utilities

Implementation of the proposed Project would result in potential impacts to the public storm drainage system. Mitigation Measure 3.14-1 provided in Section 3.14 would reduce this potential impact to a less than significant level. Project impacts to wastewater, water, stormwater and solid waste facilities are all less than significant.

5.0 ALTERNATIVES TO THE PROPOSED PROJECT

Under the Increased Density Alternative, the proposed Project would be developed with the same components and number of residential units as described in the Project Description, but an increase in park/open space. This would result in an equal amount of wastewater, water demand, and solid waste generated from the Project site. There would be approximately 9.1 more acres of pervious soils, thereby increasing opportunities for stormwater retention at the Project site. However, uses in the Increased Density Alternative would be required to adhere to the same mitigation measure as the proposed Project, and the equal amount of dwelling units would result in similar utility demands. The Increased Density Alternative would result in similar demand on utility systems when compared to the proposed Project.

Overall, this alternative would have equal wastewater treatment demand, equal water demand, equal solid waste generated, and equal storm water runoff when compared to the proposed Project. As such, this alternative would have equal impacts when compared to the proposed Project.

Wildfire

The Project Site is not located in or near any State Responsibility Areas and there are no lands classified as very high fire hazard severity zones within or near the Project Site. Therefore, the proposed Project would have no impact related to wildfire risks associated with lands in or near State Responsibility Areas or lands classified as very high fire hazard severity zones.

Under this alternative, the proposed Project would be developed with the same components as described in the Project Description, but density of the residential uses would be increased. Under the Increased Density Alternative, the same number of residential units as the proposed project (827 units) would be constructed within the Development Area. Both the proposed Project and this alternative would result in no impact related to wildfires. Overall, impacts related to wildfires would be equal under the Increased Density Alternative when compared to the proposed Project.

AGRICULTURE PROTECTION ALTERNATIVE

Aesthetics and Visual Resources

As described in Section 3.1, the visual character of the Project site would be significantly altered as a result of Project implementation. Implementation of the City's Development Standards for Zoning District's for height and bulk and consistency with the General Plan and the Manteca Zoning Ordinance would ensure that impacts are reduced to the greatest extent possible. Nevertheless, impacts related to degradation of the visual character of the site would be significant and unavoidable.

Implementation of the lighting plan required by Mitigation Measure 3.1-1 would ensure that lighting features do not result in light spillage onto adjacent properties and do not significantly impact views of the night sky. Adherence to the mitigation measure would ensure that excessively reflective building materials are not used, and that the proposed Project would not result in significant impacts related to daytime glare. As such, impacts related to nighttime lighting and daytime glare would be less than significant with mitigation.

Under the Agriculture Protection Alternative, a portion of the Project site would remain under agricultural production, and therefore, would retain the existing visual character. However, portions of the Project site that are currently agricultural land would be converted to urban uses. As such, there would still be an impact to the visual character under this alternative. The impact associated with increased light and glare in the developed area would be mitigated. Under this alternative, the changes to the existing visual quality would be similar to the proposed Project in the areas that are developed, but would be significant less in the areas that are not developed. As such, this alternative would have a reduced impact that is proportionate to the reduced development area, when compared to the proposed Project.

Agricultural Resources

Currently, the majority of the Project site is used for agricultural purposes. The Agriculture Protection Alternative would reduce the amount of converted Prime Farmland and Farmland of Statewide Importance. Provisions for payment of compensatory fees would partially offset conversions of farmland on the portion that would be developed; however, no new farmland would be made available, and the productivity of existing farmland would not be improved as a result of these measures. Therefore, full compensation for losses of Important Farmland under the Agriculture Protection Alternative would not be achieved resulting in a significant and unavoidable impact.

While this alternative would still result in a significant and unavoidable impact to agriculture, the land lost to urban uses is less than under the proposed Project. As such, this alternative would have a reduced impact that is proportionate to the reduced development area, when compared to the proposed Project.

Air Quality

Under buildout conditions in the San Joaquin County, the SJVAB would continue to experience increases in criteria pollutants and efforts to improve air quality throughout the basin would be hindered. As described in Section 3.3, San Joaquin County has a State designation Attainment or Unclassified for all criteria pollutants except for ozone, PM₁₀, 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 3.3-2 in Section 3.3 presents the State and Federal attainment status for San Joaquin County.

As discussed under Impact 3.3-1 in Section 3.3, 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 CO, 10 tons per year of NO_x, 10 tons per year of ROG, 27 tons per year of SO_x, 15 tons per year PM₁₀, and 15 tons per year PM_{2.5}.

As shown in Table 3.3-6, operational emissions would exceed the SJVAPCD thresholds of significance for NO_x. Therefore, the proposed Project is required to implement all feasible mitigation to reduce criteria pollutant emissions to below the applicable SJVAPCD thresholds of significance.

5.0 ALTERNATIVES TO THE PROPOSED PROJECT

The proposed Project is subject to the SJVAPCD Rule 9510 (ISR), which could result in substantial mitigation of NO_x and associated ROG emissions. The reductions are accomplished by the incorporation of mitigation measures into projects and/or by the payment of an Indirect Source Rule fee for any required reductions that have not been accomplished through Project mitigation commitments. The actual calculations will be determined and finalized by the SJVAPCD and Project applicants as individual projects are brought forward for approval under Rule 9510.

Implementation of the proposed Project would cause an increase in traffic, which is the dominant source of air emissions associated with the proposed Project. Under the Agricultural Protection Alternative, the proposed Project would be developed with the same components as described in the Project Description, but the number of units and the Project footprint would be reduced resulting in an increase of undeveloped land. The total development would be reduced by approximately 25 percent. This residential units would represent an approximately 25 percent reduction in the amount of traffic generated from the Project site. Mobile source air emissions are directly correlated to traffic volume; therefore, it is estimated that the reduced trip volume would reduce the mobile source emissions by approximately the same 25 percent. Additionally, this alternative would have a reduction in area source emissions proportional to the reduction in residential units.

While uses in the Agricultural Protection Alternative would be required to adhere to the same mitigation measures as the proposed Project, the decrease in residential units and reduced traffic volumes would result in reductions in air emissions. Therefore, the Agricultural Protection Alternative would result in reduced air emissions when compared to the proposed Project.

Biological Resources

As described in Section 3.4, Biological Resources, construction in the Project site has the potential to result in impacts to special-status species in the region. Although there has been no documented sighting within the immediate area in, or near the Project site, the Project site provides potential habitat for several species, including those discussed in Section 3.4. Mitigation Measure 3.4-1 requires participation with the SJMSCP, which includes fees that will be used to purchase conservation lands for a variety of special status species. The SJMSCP was created and adopted to address both the Project and cumulative impacts to biological resources, including special status species. The proposed Project will participate in the SJMSCP, including payment of fees and implementation of all Incidental Take Minimization Measures required by the SJCOG through the authorization of SJMSCP coverage. Mitigation Measure 3.4-2 requires a landscape plan that includes tree planting specifications established by the Manteca Municipal Code (17.19.060) for the replacement of any trees, excluding orchard and non-native trees, to be removed at a ratio of 1:1. Replacement trees shall be planted on-site at a location that is agreeable to the City.

The Agriculture Protection Alternative would result in development on the Project site, but the development would be significantly reduced with 39.38 acres remaining in its current condition. The 39.38 acres that would remain undeveloped would include the agricultural land only. Under this alternative, there would be more acres of agricultural land that would provide open space

habitat for a variety of wildlife species, predominately associated with foraging (i.e., protected raptors including Swainson's hawk, migratory birds). This additional agricultural land would provide biological benefits to wildlife in the region even though a portion of the Project site would still be developed. As such, the Agriculture Protection Alternative would have a reduced impact that is proportionate to the reduced development area, when compared to the proposed Project.

Cultural and Tribal Resources

As discussed in Section 3.5, Cultural and Tribal Resources, the CHRIS search for the Project site indicated two historic period resources were previously recorded in the Development Area, including the Tesla-Salado Manteca 115 kV transmission line (#P-39-005337) and the Walthall Slough Dry Land Levee (#P39-005086). Additionally, the field survey identified two on-site residences (20329 South Airport Way and 20333 South Airport Way) that were more than 50 years in age and potentially historic resources. Any previously unknown cultural resources which may be discovered during development of the proposed Project would be required to be preserved, either through preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. With implementation of the mitigation measures provided in Section 3.5, the proposed Project is not anticipated to considerably contribute to a significant reduction in cultural resources in the region.

Under this Agricultural Protection Alternative, there would be less ground disturbing activities related to development and there would be a reduced potential to disturb or destroy cultural, historic, and archaeological resources, as well as paleontological resources. While the proposed Project is not anticipated to result in significant impacts to cultural resources with mitigation, the Agricultural Protection Alternative would have a reduced impact that is proportionate to the reduced development area, when compared to the proposed Project.

Geology and Soils

As described in Section 3.6, implementation of the proposed Project would result in the construction of new structures on the Project site. The new structures would be subject to seismic, geologic, and soils hazards for the life of the Project. Mostly notably, the proposed Project would be subject to liquefaction, liquefaction induced settlement, and lateral spreading. Mitigation measures identified in Section 3.6 would reduce the potential impacts to a less than significant level.

Under the Agriculture Protection Alternative, there would be less developed area, resulting in fewer structures that would be subject to geological conditions. The Agricultural Protection Alternative would result in more of the Project site remaining in its existing undeveloped condition. While the proposed Project is not anticipated to result in significant impacts from geology and soils with mitigation, the Agricultural Protection Alternative would have a reduced impact that is proportionate to the reduced development area when compared to the proposed Project.

Greenhouse Gases, Climate Change and Energy

As stated previously, short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of the proposed Project. Short-term construction emissions of GHGs are estimated at a maximum of approximately 1,435 MT CO₂e per year. The Project is estimated to generate approximately 2,623 residents during the Project's operational phase.⁵ Dividing this number of estimated residents generated by the Project by the total annual operational GHG emissions at Project buildout yields approximately 4.62 MT CO₂e/SP/Year, which is above the 2.62 MT CO₂e/SP/year in 2030 threshold based on emissions for the land use-driven emission sectors in the CARB GHG Inventory. Construction emissions, when amortized⁶, would equal approximately emissions 47.8 MT CO₂e, which is equivalent to approximately 0.02 MT CO₂e/SP/Year. Therefore, the total annual GHG emissions at Project buildout would still yield approximately 4.62 MT CO₂e/SP/Year, after inclusion of the amortized construction emissions. The proposed Project is required to implement Mitigation Measure 3.7-1 in an effort to reduce GHG emissions to the extent possible. However, even with implementation of all feasible mitigation, it may not be feasible for the Project to reduce GHG emissions at full Project buildout below the applicable threshold.

Under the Agriculture Protection Alternative, the Project site would be developed with the same uses as the proposed Project in the developed area, but the total footprint and number of residential units would be significantly reduced. While uses in the Agricultural Protection Alternative would be required to adhere to the same mitigation measure as the proposed Project, the decrease in total residential unit count would decrease the total GHG emissions. As such, the GHG emissions impact is reduced when compared to the proposed Project.

Hazards and Hazardous Materials

The proposed Project includes components which will likely use a variety of common household hazardous materials including: paints, cleaners, cleaning solvents, pesticides, fertilizers, and fuel. There will be a risk of release of these materials into the environment if they are not stored and handled in accordance with best management practices approved by San Joaquin County Department of Environmental Health.

Under the Agriculture Protection Alternative, the type of residential uses on the site would not change when compared to the proposed Project, but the number of residences would decrease. This alternative would still use the hazardous materials identified under the proposed Project, but in smaller quantities, given the reduction in development intensity. As such, this alternative would have reduced impacts from hazards and hazardous materials impacts when compared to the proposed Project.

⁵ This estimate is based on the CalEEMod model's per-dwelling unit (du) estimate for Single Family Residences of approximately 3.17 persons per Single Family Residential du, and a total Project Single Family Residences count of 827.

⁶ The amortization period used for this calculation is 30 years.

Hydrology and Water Quality

As described in Section 3.9, implementation of the proposed Project has the potential to result in the violation of water quality standards and the discharge of pollutants into surface waters during both construction and long-term operations. Construction operations could result in temporary increases in runoff, erosion, sedimentation, soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas. The long-term operation of the proposed Project could result in long-term impacts to surface water quality from urban stormwater runoff and could enter groundwater or surface water systems. Mitigation measures provided in Section 3.9 reduce potential water quality impacts to a less than significant level. The proposed Project would not significantly impact groundwater recharge or place persons or structures in a flood hazard zone.

Under the Agricultural Protection Alternative, potential construction-related and long-term operational impacts to water quality or waste discharge related to stormwater runoff would be reduced equivalent to the amount of land area that remains undisturbed. The undeveloped land will remain pervious to precipitation and will not have the potential to discharge urban pollutants into surface water resources. This alternative would include a stormwater detention/basin, and provide natural BMPs to reduce pollutants in stormwater runoff from the developed areas. As such, potential impacts related to hydrology and water quality would be reduced proportionate to the reduced development area under the Agricultural Protection Alternative when compared to the proposed Project.

Land Use, Population, and Housing

The proposed Project is not expected to induce population growth that has not already been accounted for as a part of the existing General Plan, or analyzed in detail in this EIR. The proposed Project does not displace substantial numbers of persons or housing units. The Project would require a zoning and general plan amendment for land use changes, as well as annexation to the City of Manteca. However, impacts to land use are considered less than significant.

The Agricultural Protection Alternative is not expected to induce substantial population growth in the area but would displace persons and remove housing units. The amount of population growth and the number of housing units removed under this alternative would be reduced when compared to the proposed Project. The land use impacts would be reduced under this alternative by reducing agricultural land that is converted to residential and commercial uses. Therefore, impacts relating to land use, population, and housing would be reduced under this alternative proportionate to the reduced development area.

Noise

The proposed Project could increase noise-generating activities associated with the maintenance and operation of the proposed Project, as well as from vehicular traffic. Mitigation measures provided in Section 3.12 would reduce all potential impacts to a less than significant level. Because the Agricultural Protection Alternative would result in less development, the noise impacts associated with future uses would be reduced when compared to the proposed Project. The

5.0 ALTERNATIVES TO THE PROPOSED PROJECT

preserved agriculture area would involve the use of farming equipment and haul trucks that would cause a noise impact; however, the noises related to the agricultural activities already exist, and therefore, this would not introduce a new source of noise to the area. All other noise issues in the developed areas would be similar to the proposed Project, but on a reduced scale given the 25 percent decrease in development intensity under this alternative. Under this alternative, noise impacts would be reduced proportionate to the reduced development area when compared to the proposed Project.

Public Services and Recreation

Development in the proposed Project will pay all applicable fees and assessments required to fund its fair share of public services and recreation. This funding would assist in the development of facilities in order to meet the City's standards. The proposed Project would have a less than significant impact to fire, police, and schools, and recreational facilities.

Under the Agricultural Protection Alternative, the site would be developed with the same type of uses as described in the Project Description, but the number of residential units would be reduced, resulting in an increase of undeveloped land by 25 percent. The total development would be reduced by approximately 25 percent. This reduction in total residential housing units would represent an approximately 25 percent reduction in the amount of public service needs from the Project site. As such, this impact would be reduced when compared to the proposed Project.

Transportation and Circulation

It was determined that the proposed Project would not result in VMT increases that are greater than 85 percent of Baseline conditions, conflict with a program, plan, policy or ordinance addressing the circulation system, including transit, bicycle, and pedestrian facilities, or increase hazards due to a design feature, incompatible uses, or inadequate emergency access.

Under this alternative, the proposed Project would be developed with the same components as described in the Project Description, but the residential areas would be reduced resulting in an increase of undeveloped land beyond the Increased Density Alternative. Residential units would be reduced from 827 to 620. The reduction of residential units would result in a reduced amount of vehicle trips generated from the Project site. Therefore, the Agricultural Protection Alternative would result in reduced traffic related impacts when compared to the proposed Project.

Utilities

Implementation of the proposed Project would result in potential impacts to the public storm drainage system. Mitigation Measure 3.14-1 provided in Section 3.14 would reduce this potential impact to a less than significant level. Project impacts to wastewater, water, stormwater and solid waste facilities are all less than significant.

Under the Agricultural Protection Alternative, the proposed Project would be developed with the same components as described in the Project Description, but the overall Project footprint and number of units would be reduced resulting in an increase of undeveloped land. The total

development would be reduced by approximately 25 percent. This reduction in square footage and footprint would represent an approximately 25 percent reduction in the amount of wastewater and solid waste generated from the Project site. This reduction would also reduce water demand by approximately 25 percent. There would be approximately 39.38 more acres of pervious soils, thereby reducing the amount of storm drainage from the Project site. While uses in the Agricultural Protection Alternative would be required to adhere to the same mitigation measures as the proposed Project, the decrease in residential units would reduce the utility demands.

Overall, this alternative would have less wastewater treatment demand, less water demand, less solid waste generated, and less storm water runoff when compared to the proposed Project. As such, this alternative would have a reduced impact when compared to the proposed Project.

Wildfire

The Project Site is not located in or near any State Responsibility Areas and there are no lands classified as very high fire hazard severity zones within or near the Project Site. Therefore, the proposed Project would have no impact related to wildfire risks associated with lands in or near State Responsibility Areas or lands classified as very high fire hazard severity zones.

Under this alternative, the proposed Project would be developed with the same components as described in the Project Description, but the residential areas would be reduced resulting in an increase of undeveloped land beyond the Increased Density Alternative. Residential units would be reduced from 827 to 620. Both the proposed Project and this alternative would result in no impact related to wildfires. Overall, impacts related to wildfires would be equal under Agricultural Protection Alternative when compared to the proposed Project.

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires that an environmentally superior alternative be identified among the alternatives that are analyzed in the EIR. If the No Project (No Build) Alternative is the environmentally superior alternative, an EIR must also identify an environmentally superior alternative among the other alternatives (CEQA Guidelines Section 15126.6(e)(2)). The environmentally superior alternative is that alternative with the least adverse environmental impacts when compared to the proposed Project.

As Table 5.0-1 presents a comparison of the alternative Project impacts with those of the proposed Project. As shown in the table, the No Project (No Build) Alternative is the environmentally superior alternative. However, as required by CEQA, when the No Project (No Build) Alternative is the environmentally superior alternative, the environmentally superior alternative among the others must be identified. Therefore, the Agricultural Protection Alternatives would be the environmentally superior alternative because all environmental issues would have reduced impacts compared to the proposed Project. It is noted that neither the Agricultural Protection Alternative nor the Increased Density Alternative fully meet all of the Project objectives.

5.0 ALTERNATIVES TO THE PROPOSED PROJECT

TABLE 5.0-1: COMPARISON OF ALTERNATIVE PROJECT IMPACTS TO THE PROPOSED PROJECT

<i>ENVIRONMENTAL ISSUE</i>	<i>NO PROJECT (NO BUILD) ALTERNATIVE</i>	<i>INCREASED DENSITY ALTERNATIVE</i>	<i>AGRICULTURE PROTECTION ALTERNATIVE</i>
Aesthetics and Visual Resources	Less (Best)	Less (3rd Best)	Less (2nd Best)
Agricultural Resources	Less (Best)	Equal (3rd Best)	Less (2nd Best)
Air Quality	Less (Best)	Equal (3rd Best)	Less (2nd Best)
Biological Resources	Less (Best)	Less (3rd Best)	Less (2nd Best)
Cultural and Tribal Resources	Less (Best)	Equal (3rd Best)	Less (2nd Best)
Geology and Soils	Less (Best)	Equal (3rd Best)	Less (2nd Best)
Greenhouse Gases, Climate Change and Energy	Less (Best)	Equal (3rd Best)	Less (2nd Best)
Hazards and Hazardous Materials	Less (Best)	Equal (3rd Best)	Less (2nd Best)
Hydrology and Water Quality	Less (Best)	Less (3rd Best)	Less (2nd Best)
Land Use, Population, and Housing	Less (Best)	Equal (3rd Best)	Less (2nd Best)
Noise	Less (Best)	Equal (3rd Best)	Less (2nd Best)
Public Services and Recreation	Less (Best)	Less (3rd Best)	Less (2nd Best)
Transportation and Circulation	Less (Best)	Equal (3rd Best)	Less (2nd Best)
Utilities	Less (Best)	Equal (3rd Best)	Less (2nd Best)
Wildfire	Less (Best)	Equal (3rd Best)	Less (2nd Best)

GREATER = GREATER IMPACT THAN THAT OF THE PROPOSED PROJECT

LESS = LESS IMPACT THAN THAT OF THE PROPOSED PROJECT

EQUAL = NO SUBSTANTIAL CHANGE IN IMPACT FROM THAT OF THE PROPOSED PROJECT

 REPORT PREPARERS

City of Manteca

Chris Erias..... Development Services Director
 J.D. Hightower..... Deputy Director of Planning
 Lea Simvoulakis.....Senior Planner

JB Anderson Land Use Planning

John Anderson City Contract Planning Consultant
 Mark Niskanen City Contract Planning Consultant

De Novo Planning Group

Steve McMurtry Principal Planner/Project Manager
 Ben Ritchie Principal Planner
 Elise CarrollSenior Planner
 Josh SmithSenior Planner
 Zach Dahla.....Associate Planner
 Jeff Setterlund..... Assistant Planner

Fehr and Peers – Traffic Consultant

Fred Choa..... Principal Engineer
 Carly Panos..... Transportation Engineer

JC Brennan & Associates – Noise Consultant

Luke Saxelby, INCE Bd. Cert. Senior Consultant

Peak Associates – Cultural Consultant

Melinda Peak Principal Investigator
 Robert A. Gerry.....Senior Archeologist

West Yost – Water Supply Consultant

Jim Connell, P.E..... Principal Engineer

This page intentionally left blank.

REFERENCES

- Association of Environmental Professionals. 2018. 2018 California Environmental Quality Act (CEQA) Statute and Guidelines. January 1, 2018.
- Barbour and Major. 1988. Terrestrial vegetation of California.
- Baumhoff, Martin A. 1963 Ecological Determinants of Aboriginal California Populations. University of California Publications in American Archaeology and Ethnology 49(2):155-236. Berkeley.
- Bay Area Air Quality Management District (BAAQMD). 2017. Spare the Air: Cool the Climate. April. San Francisco, CA. Available: http://www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en
- Beardsley, Richard K. 1954 Temporal and Areal Relationships in Central California Archeology (parts 1 and 11). University of California Archaeological Survey Reports 24, 25. Berkeley.
- Bennyhoff, James A. 1977 Ethnogeography of the Plains Miwok. Center for Archaeological Research at Davis, Publications 5. University of California, Davis.
- Bennyhoff, James A. and Robert F. Heizer 1958 Cross-Dating Great Basin Sites by Californian Shell Beads. University of California Archaeological Survey Report, 42:60-92. Berkeley.
- C. Donald Ahrens. 2006. Meteorology Today: An Introduction to Weather, Climate, & the Environment.
- California Air Pollution Control Officers Association (CAPCOA). 2010. Quantifying Greenhouse Gas Mitigation Measures. Available: <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>
- California Air Pollution Control Officers Association (CAPCOA). 2016. Air Toxics Hotspot Program. Available: <http://www.capcoa.org/wp-content/uploads/2016/08/CAPCOA%20Prioritization%20Guidelines%20-%20August%202016%20FINAL.pdf>
- California Air Pollution Control Officers Association (CAPCOA). 2017. Appendix A, Calculation Details for CalEEMod. November 8, 2017.
- California Air Resources Board. 2005. Air Quality and Land Use Handbook: A Community Health Perspective. Available: <https://ww3.arb.ca.gov/ch/handbook.pdf>
- California Air Resources Board. 2014. Background Material: Almanac of Emissions and Air Quality 2013 Edition - Chapter 4 Regional Trends and Forecasts. Page last reviewed on February 7, 2014. Available: <https://ww3.arb.ca.gov/aqd/almanac/almanac13/chap413.htm>
- California Air Resources Board. 2017. EMFAC2017 Web Database. Available: <https://arb.ca.gov/emfac/2017/>

- California Air Resources Board. 2018 (November). Progress Report, California's Sustainable Communities and Climate Protection Act. Available: https://ww2.arb.ca.gov/sites/default/files/2018-11/Final2018Report_SB150_112618_02_Report.pdf. Accessed December 2, 2020.
- California Air Resources Board. 2018b. Area Designations Maps/State and National. This page last reviewed December 28, 2018. Available: <https://www.arb.ca.gov/desig/adm/adm.htm>
- California Air Resources Board. 2019. 2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals. Available: <https://ww2.arb.ca.gov/resources/documents/carb-2017-scoping-plan-identified-vmt-reductions-and-relationship-state-climate>. Accessed February 4, 2020.
- California Air Resources Board. 2019a. California Ambient Air Quality Standards (CAAQS). Available: <http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm>
- California Air Resources Board. 2019b. ARB Databases: Aerometric Data Analysis and Management System (ADAM). Available at: <https://www.arb.ca.gov/adam/trends/trends1.php>
- California Air Resources Board. 2019c. Carbon Monoxide and Health. Available: <https://ww3.arb.ca.gov/research/aaqs/caaqs/co/co.htm>
- California Air Resources Board. 2019d. What is Carbon Monoxide? Available: <https://ww2.arb.ca.gov/resources/carbon-monoxide-and-health>.
- California Air Resources Board. 2019e. California Ambient Air Quality Standards (CAAQS). Available at: <http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm>
- California Air Resources Board. 2020a. ARB Databases: Aerometric Data Analysis and Management System (ADAM). Available: <http://www.arb.ca.gov/html/databases.htm>.
- California Air Resources Board. 2020b. Maps of State and Federal Area Designations. Available: <https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations>
- California Air Resources Board. 2020c. GHG Current California Emission Inventory Data. Available: <https://ww2.arb.ca.gov/ghg-inventory-data>
- California Department of Fish and Wildlife. 2009. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities.
- California Department of Fish and Wildlife. 2021. California Natural Diversity Database (CNDDB)
- California Department of Fish and Wildlife. 2020. "State and Federally Listed Endangered, Threatened, and Rare Plants of California."
- California Department of Fish and Wildlife. 2020. "Special Animals List." Natural Diversity Database.

- California Department of Fish and Wildlife. 2020. "Special Vascular Plants, Bryophytes, and Lichens List." Natural Diversity Database.
- California Department Fish and Wildlife. 2020. "State and Federally Listed Endangered, Threatened, and Rare Animals of California."
- California Department of Water Resources. 2016. Integrated Report (CWA Section 303(d) List / 305(b) Report).
- California Department of Resources Recycling and Recovery. 2020. <http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx>.
- California Department of Toxic Substances Control. 2007. Voluntary Cleanup Agreement, Satellite Housing. Available at: https://www.envirostor.dtsc.ca.gov/public/deliverable_documents/2915158927/06.21.07%20VCA%20Cover%20Letter%20and%20VCA.pdf
- California Department of Toxic Substances Control. 2008. Preliminary Endangerment Assessment Equivalent Approval Letter: Satellite Housing. Available at: https://www.envirostor.dtsc.ca.gov/public/deliverable_documents/2404118180/10.28.08%20Additional%20Investigation%20Approval.pdf
- California Department of Toxic Substances Control. 2020. Envirostor Database. <http://www.envirostor.dtsc.ca.gov/public/>.
- California Energy Commission. 2016 Building Energy Efficiency Standards. Abstract, pg. 5.
- California Energy Commission. 2020. Energy Almanac. Available: <http://energyalmanac.ca.gov/overview/index.html>
- California Environmental Protection Agency. 2010. Climate Action Team Report to Governor Schwarzenegger and the Legislature. December 2010. Available: http://www.climatechange.ca.gov/climate_action_team/reports/
- California Department of Finance. 2007. State of California, Department of Finance, *E-8 Historical Population and Housing Estimates for Cities, Counties, and the State, 1990-2000*. Sacramento, California, August 2007.
- California Department of Finance. 2020 (January 1). Table 2: E-5 City/County Population and Housing Estimates. Available: <http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/>. Accessed September 18, 2020.
- California Department of Finance. 2020. Table E-5, Population and Housing Estimates for Cities, Counties and the State, January 1, 2011-2020, with 2010 Benchmark. Sacramento, California, May 1, 2020.

- California Department of Forestry and Fire Protection. San Joaquin County Fire Hazard Severity Zones in LRA. Accessed July 2016. Available at: http://www.fire.ca.gov/fire_prevention/fhsz_maps_sanjoaquin.
- California Department of Forestry and Fire Protection. San Joaquin County Fire Hazard Severity Zones in SRA. Accessed July 2016. Available at: http://www.fire.ca.gov/fire_prevention/fhsz_maps_sanjoaquin.
- California Department of Forestry and Fire Protection and State Board of Forestry and Fire Protection. 2010. 2010 Strategic Fire Plan for California.
- California Department of Transportation. 2008 (October). Caltrans Deputy Directive 64-R1: Complete Streets – Integrating the Transportation System. Available: <https://dot.ca.gov/-/media/dot-media/programs/local-assistance/documents/bike/f0011235-dd-64-r1-signed.pdf>. Accessed: December 2, 2020.
- California Department of Transportation. 2017. Caltrans Director’s Policy 22 (DP-22), Director’s Policy on Context Sensitive Solutions. Available: <https://dot.ca.gov/-/media/dot-media/programs/local-assistance/documents/ob/2017/ob17-01.pdf>. Accessed: December 2, 2020.
- California Department of Transportation. 2018. *2018 Standard Plans and Standard Specifications*. Available: <https://dot.ca.gov/programs/design/ccs-standard-plans-and-standard-specifications>. Accessed December 2, 2020.
- California Department of Transportation. 2020 (May 20). Caltrans Vehicle Miles Traveled-Focused Transportation Impact Study Guide. Available: <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-05-20-approved-vmt-focused-tisg-a11y.pdf>. Accessed December 2, 2020.
- California Department of Transportation. 2020 (July 1) Interim Land Development and Intergovernmental Review (LDIGR) Safety Review Practitioners Guidance. Available: <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-07-01-interim-ldigr-safety-guidance-a11y.pdf>. Accessed December 2, 2020.
- California Department of Transportation, Division of Aeronautics. 2001. California Airport Land Use Planning Handbook.
- California Governor’s Office of Planning and Research. 2017. General Plan Guidelines. Available: <https://opr.ca.gov/planning/general-plan/guidelines.html>. Accessed December 2, 2020.
- California Governor’s Office of Planning and Research. 2018. Technical Advisory on Evaluating Transportation Impacts in CEQA. Available: http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf. Accessed January 31, 2020.
- California Water Resources Control Board. 2020. <https://geotracker.waterboards.ca.gov/>.

- CalWater, California Interagency Watershed Mapping Committee. California Watershed Boundary Dataset (WBD).
- City of Manteca. 2003. Manteca General Plan 2023.
- City of Manteca. 2003. Manteca General Plan 2023 Draft EIR.
- City of Manteca. 1998. Manteca Downtown Improvement Plan & Streetscape Improvements Program.
- City of Manteca. 2010. Manteca General Plan Housing Element. Adopted June 15, 2010.
- City of Manteca. 2011. Municipal Code, 17.52.110, Required Bicycle Parking. Available: https://qcode.us/codes/manteca/view.php?topic=17-iii-17_52-17_52_110&frames=on. Accessed December 2, 2020.
- City of Manteca. 2011 (June 15). City of Manteca General Plan 2023. Available: <https://www.ci.manteca.ca.us/CommunityDevelopment/Documents/City%20of%20Manteca%20General%20Plan.pdf>. Accessed April 12, 2017.
- City of Manteca. 2018 (January 1). City of Manteca Public Facilities Implementation Plan. Available: <https://www.ci.manteca.ca.us/Engineering/Pages/PFIP.aspx>. Accessed November 30, 2020.
- City of Manteca. 2019 (April). Manteca Transit Short Range Transit Plan. Available: <https://www.ci.manteca.ca.us/CommunityDevelopment/MantecaTransit/Documents/SRTP.pdf>. Accessed September 3, 2020.
- City of Manteca. 2020 (January 21). Manteca Transit Ride Guide. Available: <https://www.ci.manteca.ca.us/CommunityDevelopment/MantecaTransit/Pages/FixedRouteService.aspx>. Accessed November 16, 2020.
- City of Manteca. 2020 (July 20). City of Manteca Proposed Truck Routes.
- City of Manteca. 2020 (September). Active Transportation Plan.
- City of Manteca. Undated. City of Manteca Design and Construction Standards. Available: <https://www.ci.manteca.ca.us/Engineering/Pages/default.aspx>. Accessed November 30, 2020.
- City of Manteca. Undated. City of Manteca Designated S.T.A.A. Truck Routes.
- Cook, Sherburne F. 1955 The Aboriginal Populations of the San Joaquin Valley, California. University of California Anthropological Records 16(2). Berkeley.
- Davis, James T. 1961 Trade Routes and Economic Exchange among the Indians of California. University of California Archaeological Survey Reports 54:1-71. Berkeley.

- De Novo Planning Group. Analysis of Public Health Risks for the Manteca General Plan Update, Manteca, California. March 16, 2021.
- De Novo Planning Group. Manteca General Plan Update Existing Conditions Report. October 2017.
- Delta Stewardship Council. 2013. The Delta Plan. May 2013, as amended through March 2020.
- Fehr & Peers. Supporting Transportation Data and Analysis – City of Manteca General Plan Draft Environmental Impact Report. December 3, 2020.
- Fredrickson, David A. 1973 Early Cultures of the North Coast Ranges, California. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Davis.
- Gudde, Erwin 1969 California Place Names: The Origin and Etymology of Current Geographical Names. University of California Press, Berkeley.
- Hickman, James C. 1993. Jepson Manual: Higher Plants of California.
- Hillman, Raymond W. and Leonard A. Covello 1985 Cities & Towns of San Joaquin County Since 1847. Panorama West Books, Fresno.
- Holland, R.F., 1986. Preliminary descriptions of the terrestrial natural communities of California. State of California, The Resources Agency, Nongame Heritage Program, Dept. Fish & Game, Sacramento, Calif. 156 pp.
- Hoover, Mildred, Hero E. Rensch, Ethel G. Rensch and William N. Abeloe. 1990 Historic Spots in California (Fourth Edition), revised by Douglas E. Kyle. Stanford University Press, Stanford.
- Intergovernmental Panel on Climate Change (IPCC). 2013. "Climate Change 2013: The Physical Science Basis, Summary for Policymakers." Available at: http://www.climatechange2013.org/images/report/WG1AR5_SPM_FINAL.pdf
- Kroeber, Alfred L. 1953 Handbook of the California Indians. California Book Company, Ltd., Berkeley.
- Latta, F. F. 1949 Handbook of the Yokuts Indians. Bear State Books, Oildale, California.
- Lillard, Jeremiah B. and William K. Purves. 1936 The Archeology of the Deer Creek-Cosumnes Area, Sacramento County, California. Sacramento Junior College, Department of Anthropology Bulletin 1. Sacramento.
- Lillard, Jeremiah B., Robert F. Heizer and Franklin Fenenga. 1939 An Introduction to the Archaeology of Central California. Sacramento Junior College, Department of Anthropology Bulletin 2. Sacramento.
- McNulty, M. Eliza and Wickland, Matthew. University of California, Berkeley. 2003. Redesigning Marsh Creek Dam to allow Chinook salmon passage, flood protection, and mercury sedimentation.

- Moratto, Michael J. 1984 California Archaeology. Academic Press, New York.
- National Aeronautics and Space Administration (NASA). Jet Propulsion Laboratory. 2015. NASA: Background Ozone is a Major Issue in U.S. West. Available: <https://www.jpl.nasa.gov/news/news.php?feature=4723>
- National Resources Defense Council (NRDC). 2014. NRDC Fact Sheet: California Snowpack and the Drought. April 2014. Available at: <https://www.nrdc.org/sites/default/files/ca-snowpack-and-drought-FS.pdf>
- National Transportation Safety Board. Accessed July 27, 2017. Available at: http://www.nts.gov/_layouts/nts.aviation/index.aspx.
- Ragir, Sonia. 1972 The Early Horizon in Central California Prehistory. University of California Research Contributions 15. Berkeley.
- San Joaquin County. 2014. San Joaquin County 2035 General Plan Draft EIR.
- San Joaquin County. 2016. San Joaquin General Plan Policy Document.
- San Joaquin County. 2016. San Joaquin County General Plan. December 2016.
- San Joaquin County. 2016. Parcel Data provided by the County Assessor's Office. October 2016.
- San Joaquin Council of Governments. 2014. 2014-2023 Regional Housing Needs Plan.
- San Joaquin Council of Governments. 2009. Airport Land Use Compatibility Plan Update – San Joaquin County Aviation System, San Joaquin County, California. June 2009, as amended January 2018.
- San Joaquin Council of Governments. 2016. Airport Land Use Compatibility Plan Update for Stockton Metropolitan Airport. May 2016, as amended February 2018.
- San Joaquin Council of Governments. 2016. Measure K Renewal 2016 Ordinance and Expenditure Plan. Available: <https://www.sjcog.org/300/Measure-K>. Accessed August 12, 2019.
- San Joaquin Council of Governments. 2018 (June). 2018 Regional Transportation Plan and Sustainable Community Strategy. Available: <https://www.sjcog.org/278/Adopted-2018-RTPSCS>. Accessed November 5, 2020.
- San Joaquin Council of Governments. 2020. San Joaquin County Regional Congestion Management Program Monitoring Report. Available: <https://www.sjcog.org/398/Regional-Congestion-Management-Program-R>. Accessed December 1, 2020.
- San Joaquin Valley Air Pollution Control District (SJVAPCD). 2015. Guidance for Assessing and Mitigating Air Quality Impact. Available: http://www.valleyair.org/transportation/ceqa_idx.htm

- San Joaquin Valley Air Pollution Control District (SJVAPCD). 2016. 2016 Plan for the 2008 8-Hour Ozone Standard. Available: http://valleyair.org/Air_Quality_Plans/Ozone-Plan-2016/Adopted-Plan.pdf
- San Joaquin Valley Air Pollution Control District (SJVAPCD). 2018 Plan for the 1997, 2006, and 2012 PM2.5 Standards. Available: <http://valleyair.org/pmplans/documents/2018/pm-plan-adopted/2018-Plan-for-the-1997-2006-and-2012-PM2.5-Standards.pdf>
- San Joaquin Valley Air Pollution Control District (SJVAPCD). 2020. Frequently Asked Questions, http://www.valleyair.org/general_info/frequently_asked_questions.htm#What%20is%20being%20done%20to%20improve%20air%20quality%20in%20the%20San%20Joaquin%20Valley
- Sawyer, John and Todd Keeler-Wolf. 1995. A Manual of California Vegetation.
- Saxelby Acoustics. Environmental Noise Assessment – City of Manteca General Plan EIR, City of Manteca, California. December 18, 2020.
- Schulz, Peter D. 1981 Osteoarchaeology and Subsistence Change in Prehistoric Central California. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Davis.
- Schenck, W. Egbert and Elmer Dawson. 1929 Archaeology of the Northern San Joaquin Valley. University of California Publications in American Archaeology and Ethnology 25(4):289-413. Berkeley.
- Seaber, P.R., Kapinos, F.P., and Knapp, G.L., 1987, Hydrologic Unit Maps: U.S. Geological Survey Water-Supply Paper 2294, 63 p.
- Skinner, Mark W. and Bruce M. Pavlik, Eds. 2001. California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California.
- Thompson & West. 1879 History of San Joaquin County with Illustrations. Thompson & West, Publishers. Reprinted in 1968 by Howell-North Books, Berkeley.
- United States Census Bureau. 2000. 2000 U.S. Census Population, Household, and Housing Unit Counts.
- United States Census Bureau. 2010. 2010 U.S. Census Population, Housing, and Housing Unit Counts.
- United States Census Bureau. 2015. QuickFacts, Manteca city, California. Available: <http://www.census.gov/quickfacts/table/PST045215/0645484>.
- United States Census Bureau. 2018. American Community Survey Table S0801 Commuting Characteristics by Sex. Available: <https://data.census.gov/cedsci/>. Accessed September 9, 2020.
- United States Energy Information Administration (U.S. EIA). 2020a. Analysis and Projections. Short-term Energy Outlook. Release date: September 9, 2020. Available at: https://www.eia.gov/outlooks/steo/report/global_oil.php

- United States Energy Information Administration (U.S. EIA). 2020b. California State Energy Profile. Last updated January 16, 2020. Available at: <https://www.eia.gov/state/print.php?sid=CA>
- United States Energy Information Administration (U.S. EIA). 2020c. Independent Statistics and Analysis. Frequently Asked Questions. Last updated September 4, 2020. Available at: <https://www.eia.gov/tools/faqs/faq.php?id=33&t=6>
- United States Environmental Protection Agency (USEPA). 2016. Basic Information about Carbon Monoxide (CO) Outdoor Air Pollution. Available: <https://www.epa.gov/co-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution#Effects>
- United States Environmental Protection Agency (USEPA). 2017. Sulfur Dioxide Concentrations – EPA. Available: https://cfpub.epa.gov/roe/indicator_pdf.cfm?i=91
- United States Environmental Protection Agency (USEPA). 2019a. Health Effects of Ozone Pollution. Available: <https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution>
- United States Environmental Protection Agency (USEPA). 2019b. Health Effects of Ozone In the General Population. Available: <https://www.epa.gov/ozone-pollution-and-your-patients-health/health-effects-ozone-general-population>
- United States Environmental Protection Agency (USEPA). 2019c. Health and Environmental Effects of Particulate Matter (PM). Available: <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm>
- United States Environmental Protection Agency (USEPA). 2019d. Basic Information About Lead Pollution. Available: <https://www.epa.gov/lead-air-pollution/basic-information-about-lead-air-pollution#how>
- United States Fish and Wildlife Service. 2012. Proposed Expansion San Joaquin River National Wildlife Refuge. Available at: https://www.fws.gov/cno/refugeprogram/Planning/SJNWR-Expansion-docs/SJR_Exp_EA_Web.pdf
- West Yost. Lumina at Machado Water Supply Assessment. July 2021.

This page left intentionally blank.