

5. AIR QUALITY

The Air Quality Section of this EIR evaluates potential impacts on air quality resulting from the implementation of the proposed General Plan 2023. This Section incorporates guidance and air quality data from the San Joaquin Valley Air Pollution Control District (SJVAPCD). (1)

5.1 EXISTING CONDITIONS

5.1.1 San Joaquin Air Quality Designation

The San Joaquin Valley is currently designated as “severe nonattainment” for the state ozone 1-hour standard, and “serious nonattainment” for the federal 1-hour ozone and 24-hour fine particulate matter (PM10) standards, as shown in Table 5-1. (1)

Table 5-1
Attainment Status for San Joaquin County

Pollutant	Designation	
	National Standards	State Standards
Ozone- One hour	Nonattainment/Serious	Nonattainment/Severe
Ozone- Eight hour	Designation to be Determined	No State Standard
PM10	Nonattainment/Serious	Nonattainment
PM2.5	Designation to be Determined	No State Standard
CO (San Joaquin County)	Unclassified/Attainment	Attainment
Nitrogen Dioxide	Unclassified/Attainment	Attainment
Sulfur Dioxide	Unclassified/Attainment	Attainment
Lead (Particulate)	No designation	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified

Source: San Joaquin Valley Air Pollution Control District (SJVAPCD)

5.1.2 Setting

Ironically, the long, warm summers that make the area especially suited for agriculture are the same conditions that contribute to the Valley's air quality problems. Heat and sunlight transform volatile organic compounds and nitrogen oxides from vehicle exhaust, industrial processes, and other operations into ground-level ozone, also known as smog. The surrounding mountain ranges pose an additional challenge, as they trap smog in the Valley, not allowing it to dissipate.

In addition to smog, dry weather conditions and topography allow small particles of man-made compounds, as well as soot, ash and dust to become suspended in the air, creating another harmful pollutant -- particulate matter.

The Valley does not currently meet health-based standards set by the United States Environmental Protection Agency (EPA) for ozone and particulate matter, nor the state standards for ozone. These health standards have been established to protect public health, as both smog and particulate matter can cause or aggravate respiratory and cardiac conditions. Research indicates that long-term exposure to either pollutant can contribute to the premature death of people and animals.

In addition to grave health concerns, these pollutants also have a significant impact on other quality of life issues. Ozone damages crops, ornamental vegetation, and man-made materials, affecting the Valley's economy. Particulates obscure visibility, notably distant views, and diminish the natural beauty of the area.

Topography

Air quality in the northern San Joaquin Valley is significantly influenced by topography. The City of Manteca lies within the northern portion of the San Joaquin Valley Air Basin, which in turn occupies the southern half of the Great Central Valley of California. The San Joaquin Valley is bounded by the coastal mountain ranges on the west, rising to an average elevation of 3,000 feet, and the Sierra Nevada mountain range on the east. The Carquinez Strait is 55 miles northwest of the Study Area and the intervening terrain is flat. The Strait is a sea level gap in the coastal range where the San Joaquin-Sacramento Delta empties into San Francisco Bay. Prevailing winds from the ocean blow through the Carquinez Strait, carrying pollutants from the more populous Bay Area.

Climate

The winters in the San Joaquin Valley are usually mild and fairly humid, and the summers are hot, dry, and nearly cloudless. This climate is the result of both the topography and the mean position of the seasonal mid-latitude storm track.

Temperature

In winter, the storm systems moving in from the Pacific Ocean bring a decidedly maritime influence to the San Joaquin Valley. The Sierra Nevada mountain range on the east prevents the cold, continental air masses from influencing the Valley. Temperatures below freezing are unusual. Average high temperatures in the winter are in the 50's (F), but highs in the 30's and 40's can occur with persistent fog and low cloudiness.

In summer, high temperatures often exceed 100 degrees, with averages in the low 90's in the northern valley and the high 90's in the southern valley. Summer low temperatures average in the high 50's in the northern valley and the upper 60's in the southern valley.

Precipitation

Precipitation in the San Joaquin Valley is strongly influenced by the position of the semi-permanent subtropical high pressure belt located off the Pacific coast (referred to as the Pacific High). In the winter, this high pressure system moves southward, allowing Pacific storms to move through the Valley. The majority of the precipitation in the Valley is winter rain produced by these storms. Snowstorms, hailstorms, and icestorms occur infrequently in the Valley, and severe occurrences are very rare. Precipitation during the summer is in the form of convective rain showers, and is rare.

Precipitation on the Valley floor and in the Sierra Nevada decreases from north-to-south. This is primarily because the Pacific storm track often passes through the northern part of the state, while the southern part of the state remains protected by the Pacific High.

The northern end of the Valley (Manteca and Stockton area) receives approximately 20 inches of rain per year. The central portion of the Valley (Fresno area) receives approximately 10 inches of rain per year. The southern end of the Valley (Bakersfield area) receives less than 6 inches of rain per year.

Wind Patterns

The topography of the San Joaquin Valley has a dominating effect on wind patterns. Winds tend to blow somewhat parallel to the Valley and mountain range orientation. In spring and early summer, thermal low-pressure systems develop over the interior basins east of the Sierra Nevada mountain range, and the Pacific High moves northward. These developments and the topography produce the high incidence of relatively strong northwesterly winds in the spring and early summer.

The San Joaquin Valley receives a combination of sea breeze-land breeze and mountain-valley regimes. The sea breeze-land breeze regime has a sea breeze flowing into the Valley from the north during the day, and a land breeze flowing out of the Valley at night.

The prevailing wind direction in the City of Manteca is from the northwest, resulting from marine breezes through the Carquinez Strait. During the winter, the sea breeze diminishes.

Tule Fog

Between winter storms, high pressure and light winds allow cold moist air to pool on the Valley floor. This creates strong low-level temperature inversions and very stable air conditions. The Valley's well-known Tule Fog is the result of these conditions.

5.1.3 Sensitive Receptors

Sensitive receptors located in or near the vicinity of known air emissions sources, including freeways and intersections, are of particular concern. Sensitive receptors are located throughout the City of Manteca, and typically include the following: residences, athletic facilities, schools, health care facilities, playgrounds, convalescent centers, child care centers, and rehabilitation centers.

Land use compatibility issues relative to siting of pollution-emitting sources or siting of sensitive receptors must also be considered. In the case of schools, state law requires that siting decisions consider potential for toxic or harmful air emissions in the surrounding area.

5.2 REGULATORY SETTING AND STANDARDS

5.2.1 Applicable Federal Regulation

U. S. Environmental Protection Agency National Ambient Air Quality Standards

Pursuant to the Federal Clean Air Act of 1970 and subsequent amendments, the Environmental Protection Agency (EPA) has established ambient air pollutant concentration standards and maximum allowable emission rates (National Ambient Air Quality Standards (NAAQS)), for certain individual sources of air pollutants. Air quality is managed through the attainment and maintenance of these ambient standards and enforcement of the emission limits.

There are six Primary NAAQS "criteria" air pollutants (so called because they were established on the basis of health criteria):

- Ozone (O₃)
- Carbon Monoxide (CO)
- Nitrogen Dioxide (NO₂)
- Sulfur Dioxide (SO₂)
- Fine Particulate Matter (PM₁₀)
- Lead (Pb)

The U.S. Environmental Protection Agency (EPA) also recently adopted standards for fine particulate matter (PM2.5).

These air pollutants are further discussed below in Subsection 5.2.3

5.2.2 Applicable State Regulation

California Air Resources Board

The California Air Resources Board (CARB) coordinates and oversees the air pollution control activities performed in California by the local air districts. One of their tasks is to compile data from the numerous air quality monitoring stations throughout the state. Data collected at those stations are used to classify areas and air basins as attainment or nonattainment for each criteria air pollutant based on whether the federal ambient air quality standards have been achieved. CARB has established state ambient air quality standards, many of which are more stringent than the corresponding federal standard. State standards attempt to protect “sensitive” people. Children, the elderly, athletes, and people with existing respiratory ailments (e.g. asthma, emphysema), and heart disease are much more sensitive to air pollution than the average citizen.

Central California Air Quality Studies (CCAQS) (2)

CARB’s Central California Air Quality Studies (CCAQS) comprise two (2) studies: the California Regional Particulate Air Quality Study (CRPAQS), and the Central California Ozone Study (CCOS).

The CCAQS is a multi-year effort of meteorological and PM10/PM2.5 air quality monitoring, emission inventory development, data analysis, and air quality simulation modeling. The objectives of the study are to: 1) provide an improved understanding of emissions, PM10 and PM2.5 composition, and dynamic atmospheric processes; 2) establish a strong scientific foundation for informed decisions making; and 3) develop methods to identify the most efficient and cost-effective emission control strategies to achieve the PM10 and PM2.5 standards in Central California. The concept for the plan was initiated in 1991 by the agricultural community when they approached the U.S. EPA for funding. Government entities and industries endorsed the study, and full-scale planning began in 1992. Large-scale field monitoring programs were begun in 1999.

The CCOS consists of a field program, data analysis, emission inventory development, and modeling. The field program of the CCOS was conducted during the summer of 2000. Emission inventory development, data analysis and modeling are on-going projects. The entire effort is expected to be completed by 2005. The CARD and Air Pollution Control Districts plan to use the results of the CCOS to prepare the demonstration of attainment for the ozone standard for non-attainment areas in central California.

5.2.3 Ambient Air Quality Standards

The federal (national) and California State ambient air quality standards are shown below in Table 5-2.

Ozone (O₃)

As shown in Table 5-2, the one-hour California Ambient Air Quality Standard for ozone is 0.09 part per million (PPM), and is not to be exceeded. The one-hour National (Federal) Ambient Air Quality Standard for ozone is 0.12 ppm (measured at the highest hour during the day), and is not to be exceeded more than three (3) times in any three-year period.

Ground-level ozone (the primary constituent of smog) is the most complex, difficult to control, and pervasive in the six principal pollutants. Unlike other pollutants, ozone is not emitted directly into the air by specific sources. Ozone is a “photochemical” pollutant, created by a complex series of chemical reactions between reactive organic gases (ROG), nitrogen oxides (NO_x), and sunlight.

Scientific evidence indicates that ground-level ozone not only affects people with impaired respiratory systems (such as asthmatics), but healthy adults and children as well. Exposure to ozone for six to seven hours, even at relatively low concentrations, significantly reduces lung function and induces respiratory inflammation in normal, healthy people during periods of moderate exercise. It can be accompanied by symptoms such as chest pain, coughing, nausea, and pulmonary congestion. Recent studies provide evidence of an association between elevated ozone levels and increases in hospital admissions for respiratory problems in several U.S. cities. Ozone is also responsible for several billion dollars of agricultural crop yield loss in the U.S. each year. Ozone damages natural ecosystems such as forests and foothill communities, as well as some man-made materials such as rubber, paint, and plastics.

The Valley’s long, hot summers, stagnant weather conditions, frequent inversions, and bowl shape with surrounding mountain barriers, create the perfect conditions to form and trap ground-level ozone. A fast growing population driving approximately 90 million miles per day compounds the problem.

There are literally thousands of sources of the reactive organic gases (ROG) and nitrogen oxides (NO_x) which react with sunlight to form ozone. ROG and NO_x are emitted from fuel combustion, and agricultural and industrial processes. Some of the more common sources include gasoline vapors, chemical solvents, combustion products of various fuels, and consumer products. They can originate from large industrial facilities, gas stations, and small businesses such as bakeries and dry cleaners. Often these “precursor” gases are emitted in one area, but the actual chemical reactions, stimulated by sunlight and temperature, take place in another.

Table 5-2
Ambient Air Quality Standards

Pollutant	Averaging Time	Concentration	
		National Standards	California Standards
Ozone (O3)	8-hour	0.08 ppm	N/A
	1-hour	0.12 ppm	0.09 ppm
Carbon Monoxide (CO)	8-hour	9 ppm	9 ppm
	1-hour	35 ppm	20 ppm
Nitrogen Dioxide (NO2)	Annual Avg.	0.053 ppm	N/A
	1-hour	N/A	20 ppm
Sulfur Dioxide (SO2)	Annual Avg.	0.03 ppm	N/A
	24-hour	0.14 ppm	0.04 ppm
	1-hour	N/A	0.25 ppm
Particulate Matter (PM10)	24-hour	150 micrograms/ cubic meter	50 micrograms/ cubic meter
Lead (Pb)	30-day average	N/A	1.5 micrograms/ cubic meter
	Calendar Quarter	1.5 micrograms/ cubic meter	N/A
Particulate Matter (PM2.5)	24-hour	65 micrograms/ cubic meter	N/A

Source: CARB and San Joaquin Valley Unified Air Pollution Control District

Combined emissions from motor vehicles and stationary sources can be transported and spread by wind hundreds of miles from their origins, forming high ozone concentrations over very large regions.

Approximately 60 percent of the Valley's smog problems come from cars, diesel trucks, and other internal combustion engines such as lawnmowers and boats. These are collectively called "mobile sources." The other 40 percent comes from business and industrial sources.

Carbon Monoxide (CO)

State and federal CO standards have been set for both 1-hour and 8-hour averaging periods. The state 1-hour CO standard is 20 parts per million (ppm) by volume, while federal 1-hour standards are 35 ppm. Both state and federal standards are 9 ppm for the 8-hour averaging period. State CO standards are phrased as values not to be exceeded; federal CO standards are phrased as values not to be exceeded more than once per year.

Nitrogen Dioxide (NO₂)

Nitrogen dioxide belongs to a family of highly reactive gases called nitrogen oxides (NO_x). These gases form when fuel is burned at high temperatures, and come principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. A suffocating, brownish gas, nitrogen dioxide is a strong oxidizing agent that reacts in the air to form corrosive nitric acid, as well as toxic organic nitrates. It also plays a major role in the atmospheric reactions that produce ground-level ozone (or smog).

Nitrogen dioxide can irritate the lungs and lower resistance to respiratory infections such as influenza. The effects of short-term exposure are still unclear, but continued or frequent exposure to concentrations that are typically much higher than those normally found in the ambient air may cause increased incidence of acute respiratory illness in children. EPA's health-based national air quality standard for NO₂ is 0.053 ppm (measured as an annual average). Nitrogen oxides are important in forming ozone and may affect both terrestrial and aquatic ecosystems.

Sulfur Dioxide (SO₂)

Sulfur dioxide belongs to the family of sulfur oxide gases (SO_x). These gases are formed when fuel containing sulfur (mainly coal and oil) is burned, and during metal smelting and other industrial processes.

The major health concerns associated with exposure to high concentrations of SO₂ include effects on breathing, respiratory illness, alterations in pulmonary defenses, and aggravation of existing cardiovascular disease. Major subgroups of the population that are most sensitive to SO₂ include asthmatics and individuals with cardiovascular disease or chronic lung disease (such

as bronchitis or emphysema) as well as children and the elderly. EPA's health-based national air quality standard for SO₂ is 0.03 ppm (measured on an annual average) and 0.14 ppm (measured over 24 hours). Emissions of SO₂ also can damage the foliage of trees and agricultural crops. Together, SO₂ and NO_X are the major precursors to acid rain, which is associated with the acidification of lakes and streams, accelerated corrosion of buildings and monuments, and reduced visibility.

Particulate Matter (PM₁₀)

Particulate matter is the term for solid or liquid particles found in the air. Some particles are large or dark enough to be seen as soot or smoke. Others are so small they can be detected only with an electron microscope. Because particles originate from a variety of mobile and stationary sources (diesel trucks, wood stoves, power plants, etc.), their chemical and physical compositions vary widely.

Also shown in Table 5-2, the 24-hour California Ambient Air Quality Standard for PM₁₀ is 50 micrograms per cubic meter, and is not to be exceeded. The 24-hour National Ambient Air Quality Standard for PM₁₀ is 150 micrograms per cubic meter, and is not to be exceeded more than once per year.

In 1987, EPA replaced the earlier Total Suspended Particulate (TSP) air quality standard with a PM₁₀ standard. The newer standard focuses on smaller particles that are likely to result in adverse health effects because of their ability to reach the lower regions of the respiratory tract. The PM₁₀ standard includes particles with a diameter of 10 micrometers or less (0.0004 inches or one-seventh the width of a human hair).

Major concerns for human health from exposure to PM₁₀ are effects on breathing and respiratory systems, damage to lung tissue, cancer, and premature death. The elderly, children, and people with chronic lung disease, influenza, or asthma, tend to be especially sensitive to the effects of particulate matter. Acidic PM₁₀ can also damage manmade materials and is a major cause of reduced visibility in many parts of the U.S.

Primary man-made sources of PM₁₀ in the San Joaquin Valley are agricultural operations, agricultural burning, demolition and construction activities, entrainment of dust by motor vehicles on paved and unpaved roads, and residential wood burning. Wind erosion of agricultural land also represents a significant source of airborne dust in the Valley.

Approximately 58% of the Valley's PM₁₀ pollution comes from man-made sources and activities. Approximately 38% comes from natural causes, and approximately 4% can be attributable to unplanned fires.

Lead (Pb)

Smelters and battery plants are the major sources of the pollutant "lead" in the air. The highest concentrations of lead are found in the vicinity of nonferrous smelters and other stationary sources of lead emissions.

Exposure to lead mainly occurs through inhalation of air and ingestion of lead in food, paint, water, soil, or dust. Lead accumulates in the body in blood, bone, and soft tissue. Because it is not readily excreted, lead can also affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause anemia, kidney disease, reproductive disorders, and neurological impairments such as seizures, mental retardation, and/or behavioral disorders. Even at low doses, lead exposure is associated with changes in fundamental enzymatic, energy transfer, and other processes in the body. Fetuses and children are especially susceptible to low doses of lead, often suffering central nervous system damage or slowed growth. Recent studies show that lead may be a factor in high blood pressure and subsequent heart disease in middle-aged white males. Lead may also contribute to osteoporosis in postmenopausal women. EPA's health-based national air quality standard for lead is 1.5 micrograms per cubic meter (measured as a quarterly average).

Particulate Matter (PM2.5)

The recently adopted 24-hour National Ambient Air Quality Standard for PM2.5 (particles 2.5 micrometers or less in size) is 65 micrograms per cubic meter within a 24-hour period. California has not yet set a standard for PM2.5. However, the California Air Resources Board (CARB) has developed a PM2.5 monitoring network to implement the national standard. The San Joaquin Valley Air Pollution Control District (SJVAPCD) is participating in collection of the PM2.5 data as required by the EPA.

Toxic Air Pollutants

Toxic air pollutants, such as asbestos, can be emitted during demolition of buildings containing toxic contaminants, and during operation of industries that utilize toxic substances. The Federal and State governments have implemented a number of programs to control toxic air emissions.

The Federal Clean Air Act provides a program for the control of hazardous air pollutants. The California legislature has enacted programs including the Tanner Toxics Act (AB1807), the Air Toxics Hot Spot Assessment Program (AB2588), the Toxics Emissions Near Schools Program (AB3205), and the Disposal Site Air Monitoring Program (AB3374).

The San Joaquin Valley Air Pollution Control District (SJVAPCD) has developed an Integrated Air Toxic Program. This program integrates both state and federal requirements and is aimed at protecting public health. The District is implementing rules to control emissions from specific

sources of toxic air pollutants. As part of the District's Risk Management Policy, certain businesses are required to obtain a permit to emit toxic air pollutants.

In 1998, the California Air Resources Board (CARB), in conjunction with the California EPA, classified diesel particulate as a toxic air contaminant. Particulate matter and other gases including nitrogen oxides (NO_x) are air pollutants emitted by diesel engines. Heavy-duty trucks, buses, and heavy off-road engines are key sources of nitrogen oxides (NO_x) emissions within the Valley. In addition to nitrogen oxides, particulate matter, and other gases from diesel exhaust contain potential cancer-causing substances such as arsenic, benzene, formaldehyde, nickel, and polycyclic aromatic hydrocarbons.

In order to reduce the particulate matter, nitrogen oxide (NO_x), and sulfur oxide (SO_x) emissions from diesel engines, the CARB has adopted many important regulations. These include:

- Low sulfur/low diesel fuel requirement that reduces particulate matter, NO_x, and SO_x emissions.
- Emission standards that restrict the amount of particulate matter emitted by new diesel trucks, buses, cars, and heavy-duty trucks.
- Emission standards for NO_x emissions from diesel cars, trucks and buses.
- Roadside testing of heavy-duty on-road vehicles for excessive particulate emissions.
- Fleet inspection and maintenance of heavy-duty vehicles.
- Emission standards that restrict the amount of particulate matter and that can be emitted from many diesel utility engines built after 1995.
- Provision of funds for Carl Moyer Memorial Air Quality Standards Attainment Program, which provides grants for the incremental cost of lower-emission diesel engines for heavy-duty vehicles.

5.2.4 San Joaquin Valley Air Pollution Control District (SJVAPCD)

Manteca falls under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The District was formed in 1991, and maintains its headquarters in Fresno.

The SJVAPCD is responsible for regulating stationary, indirect, and area sources of air pollution in the Valley. The eight counties that comprise the District are divided into three regions. These include the Northern Region, (Merced, San Joaquin, and Stanislaus Counties), the Central Region (Madera, Fresno, and Kings Counties), and the Southern Region (Tulare County and the Valley portion of Kern County).

Air districts have the primary responsibility for control of air pollution from all sources other than emissions directly from motor vehicles, which are the responsibility of the California Air Resources Board (ARB) and the U.S. Environmental Protection Agency (EPA). Air districts

adopt and enforce rules and regulations to achieve state and federal ambient air quality standards, and enforce applicable state and federal law.

Air districts are charged with controlling stationary sources of pollution, including industrial processes and equipment. Air districts are also required to implement transportation control measures.

Nearly all pollution control programs developed to date have relied on development and application of cleaner technology and add-on emission control devices to clean up vehicular and industrial sources, such as catalytic converters for automobiles. Only recently have efforts been directed at better use of existing emission sources (e.g. through inspection and maintenance programs, heavy-duty engine emission reduction programs, High Occupancy Vehicle or HOV Lanes, and maintenance procedures on industrial sources).

The SJVAPCD has entered into a Memorandum of Understanding (MOU) with the transportation planning agencies of the eight counties in the San Joaquin Valley Air Basin. This MOU will ensure a coordinated approach in the development and implementation of transportation plans throughout the Valley. This action will help the Regional Transportation Planning Agencies comply with pertinent provisions of the federal and State Clean Air Acts, as well as related transportation legislation.

The SJVAPCD has adopted two Attainment Plans in an attempt to achieve state and federal air quality standards:

1. 1991 California Clean Air Act Air Quality Attainment Plan (AQAP) for ozone and carbon monoxide.
2. 1991 and 1992 PM10 Nonattainment Area Plan

After the area was re-designated as “serious nonattainment” for PM10 by the EPA, the SJVAPCD submitted a Serious Area PM10 Nonattainment Plan in September 1994.

However, the SJVAPCD is considering voluntarily seeking the federal government's worst air quality designation for ground-level ozone. There has been a 45 percent reduction since 1980 in the number of days the Valley's air violates health-based levels for ground-level ozone. However, improvements have not come quickly enough to meet clean air deadlines, prompting the EPA's serious nonattainment designation. This means that the Valley must now meet the ozone standard by 2005 by reducing total emissions inventory by an additional 30- percent or 300 tons per day.

The SJVAPCD has not been able to submit an implementation plan demonstrating such drastic reductions. The District is exploring an option of requesting an “extreme” non-attainment

designation. With this designation, the new attainment date for the Valley would be 2010, instead of 2005.

5.3 IMPACT EVALUATION CRITERIA

In accordance with CEQA Guidelines, Appendix G, the proposed project would have a significant adverse impact on the environment if the project would:

- 1) conflict with or obstruct implementation of the applicable air quality plan;
- 2) violate any air quality standard or substantially contribute to an existing or projected air quality violation;
- 3) result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- 4) expose sensitive receptors to substantial pollutant concentrations; or
- 5) create objectionable odors affecting a substantial number of people.

URBEMIS Emissions Model

The California Air Resources Board (CARB) URBEMIS 2001 for Windows, Version 6.2.2, Emissions Estimation for Land Use Development Project Modeling Program, was used to derive emissions from construction, area sources, and operational (vehicle) emissions. The estimate of air quality impact is based on the land use assumptions established in Section 2 and Section 11 of this EIR, shown in Table 5-3 below.

The effects of development anticipated in the General Plan will occur incrementally over twenty years or more. Therefore, the methods of analysis typically applied to evaluate new development proposals provide only broad, generic indicators of future impacts. The cumulative effect of each increment of new development over a twenty year horizon creates significant impacts that can only be approximated. The actual mix of land use that will occur over time are very difficult to predict. Commercial, business professional and industrial uses, in particular, provide a broad range of development opportunities and characteristics.

Table 5-3
Projected Land Use Mix at Full Development of the
Primary Urban Service Area in the General Plan 2023

LAND USE	Proposed New Land Use	Existing Urbanized Land Use	Total 2023 Land Use
	Acres	Acres	Acres
AG Agriculture	3960.0		3960.0
GC General Commercial	518.0	154	672.0
NCC Neighborhood Commercial	111.8	380	491.8
CMU Commercial Mixed Use	255.0		255.0
HI Heavy Industrial	715.0	194.9	909.9
LI Light Industrial	798.1	226	1024.1
BIP Business Industrial Park	258.0		258.0
BP Business Professional	133.0		133.0
HDR High Density Residential (15.1 to 25 du/ac)	251.0	191	442.0
MDR Medium Density Residential (8.1 to 15 du/ac)	359.0	187.6	546.6
LDR Low Density Residential (2.1 to 8 du/ac)	3685.9	2741.7	6427.6
VLDR Very Low Density Residential (0.5 to 2 du/ac)	1181.0	109.8	1290.8
P/QP/ Public/Quasi-public Schools/Utilities	317.6	788.3	1105.9
OS Open Space	516.0	27	543.0
P Park	175.7	342.4	518.1
Subtotal	12302.1	5342.7	18577.8

Source: DRAFT Manteca General Plan 2023, Table 2-1.

Construction Emissions

Emissions caused during construction would be due to site preparation and construction of the proposed uses. During construction, emissions would be generated by tailpipe emissions of particulate, carbon monoxide and nitrous oxide from diesel-powered earth moving equipment, particulate emissions from vehicular traffic on unpaved roads, and particulates emissions from soil disturbance (actual amount depends on total acreage disturbed). These impacts will not be sustained over time, but rather will occur sporadically over a period of years as the project is developed. Grading and other earth disturbance will occur in discrete periods as new phases of the project are developed.

Area Source Emissions

Area source emissions were estimated for wood stoves, fireplaces, landscaping and consumer products. Landscape maintenance includes emissions from fuel-powered maintenance equipment. Consumer products include reactive organic compound emissions released through the use of products such as hair sprays and deodorants.

Vehicle Source Emissions

The precursor emissions for vehicle sources is evaluated by the URBEMIS 2001 program based on the target year, trip characteristics, temperature data, variable starts, vehicle fleet percentages, road dust, and pass-by trips. The URBEMIS 2001 default settings for vehicle mix, variable starts and other factors are used in the evaluation. Both summer and winter conditions were evaluated. Summer conditions create the worst case scenario for precursor emissions.

Table 5-4
Summary of Winter Emissions (Pounds/Day)

<i>Construction Emission Estimates</i>	ROG	NOx	CO	PM10
Totals (lbs/day, unmitigated)	173,438.78	381.04	722.14	73.05
Totals (lbs/day, mitigated)	173,438.78	381.04	722.14	73.05
<i>Area Source Emission Estimates</i>	ROG	NOx	CO	PM10
Totals (lbs/day, unmitigated)	2430.32	582.64	246.2	1.11
Totals (lbs/day, mitigated)	2430.14	580.23	245.24	1.10
<i>Operational (Vehicle) Emission Estimates</i>	ROG	NOx	CO	PM10
Totals (lbs/day, unmitigated)	4338.05	4520.73	50887.04	347.84
Totals (lbs/day, mitigated)	3690.92	3839.92	43238.72	295.40

Source: URBEMIS 2001 for Windows v. 6.2.2 (Detailed Report Included in DRAFT EIR FOR GENERAL PLAN 2023, Volume 2, Technical Appendix.)

Table 5-5
Summary of Summer Emissions (Pounds/Day)

<i>Construction Emission Estimates</i>	ROG	NOx	CO	PM10
Totals (lbs/day, unmitigated)	173,438.78	381.04	722.14	73.05
Totals (lbs/day, mitigated)	173,438.78	381.04	722.14	73.05
<i>Area Source Emission Estimates</i>	ROG	NOx	CO	PM10
Totals (lbs/day, unmitigated)	2448.76	587.31	440.74	1.28
Totals (lbs/day, mitigated)	2448.59	584.89	439.77	1.28
<i>Operational (Vehicle) Emission Estimates</i>	ROG	NOx	CO	PM10
Totals (lbs/day, unmitigated)	4838.42	2986.06	52559.58	347.84
Totals (lbs/day, mitigated)	4301.01	2536.54	44652.11	295.40

Source: URBEMIS 2001 for Windows v. 6.2.2 (Detailed Report Included in DRAFT EIR FOR GENERAL PLAN 2023, Volume 2, Technical Appendix)

5.4 IMPACTS AND MITIGATION

POTENTIAL IMPACT AQ-1: **Implementation of the General Plan 2023 could conflict with or obstruct implementation of the applicable air quality plan.**

Level of Significance: **Potentially Significant**

The San Joaquin Valley Air Pollution Control District (SJVAPCD) has adopted an Air Quality Management Plan and an Integrated Air Toxic Program. The SJVAPCD has also adopted two Attainment Plans and a Serious Area PM10 Nonattainment Plan.

Mitigation Measures:

AQ-1.1: The General Plan 2023 includes the following goal, policy (P) and implementation measures (I) to direct cooperation with San Joaquin Valley Air Pollution Control District's air quality plans, including air toxic plans:

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- Goal AQ-1 Improve Manteca’s air quality by:
- Minimizing public exposure to toxic or hazardous air pollutants.
- 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.
- AQ-I-1 Work with the San Joaquin Valley Air Pollution Control District (SJVAPCD) 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 to develop a local airshed model.
 - Cooperate with the APCD in their efforts to develop a cost/benefits 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.

Residual Level of Significance: Less Than Significant with Mitigation

The above goal, policy and implementation measures are intended to reduce conflicts between the proposed General Plan 2023 and applicable air quality plans. The cooperation required in the above goal, policy and implementation measures will help achieve the SJVAPCD’s Air Quality Management Plan, Integrated Air Toxic Program, Attainment Plans, as well as any future air quality plans.

POTENTIAL IMPACT AQ-2: Implementation of the General Plan 2023 could violate air quality standards or contribute substantially to the current nonattainment status for ozone and PM10.

Level of Significance: Significant and Unavoidable

The San Joaquin Valley is currently designated as “severe nonattainment” for the state ozone 1-hour standard, and “serious nonattainment” for the federal 1-hour ozone and 24-hour fine particulate matter (PM10) standards. Table 5-6 shows the ozone trends summary from 1993 –

2002 for the San Joaquin Valley Air Basin. Table 5-7 gives the PM10 trends summary for the same period.

Any additional sources of these pollutants will contribute to this nonattainment status. Therefore, there are no mitigation measures which will reduce the increase of these air pollutants to a less-than-significant level. However, the policies (P) and implementation measures (I) listed below are intended to reduce the net increase from implementation of the General Plan 2023.

**Table 5-6
Ozone Trends Study
San Joaquin Valley Air Basin**

YEAR	DAYS > STANDARDS FOR OZONE			1-HOUR MAX	8-HOUR MAX
	1-Hour State	1-Hour National	8-Hour National	(ppm)	AVG (ppm)
2002	127	31	125	0.164	0.132
2001	123	32	109	0.149	0.120
2000	114	30	103	0.165	0.131
1999	123	28	117	0.155	0.123
1998	90	39	84	0.169	0.136
1997	110	16	95	0.147	0.127
1996	120	56	114	0.165	0.137
1995	124	44	109	0.173	0.134
1994	118	43	108	0.175	0.129
1993	125	43	104	0.160	0.125

Source: Extracted from California Air Resources Board (CARB), Air Quality and Emissions/Air Quality Data, www.arb.ca.gov.

Table 5-7
PM10 Trends Study
San Joaquin Valley Air Basin

YEAR	DAYS > STANDARDS FOR PM10		Annual Average	Maximum
	State	National	(micrograms/m3)	(micrograms/m3)
2002	267	8	59.2	189
2001	236	12	57.4	205
2000	237	0	53.1	145
1999	216	12	59.5	183
1998	185	6	39.9	160
1997	188	3	48.2	199
1996	225	0	54.1	153
1995	246	8	58.2	279
1994	253	8	50.1	190
1993	233	11	56.3	239

Source: Extracted from California Air Resources Board (CARB), Air Quality and Emissions/Air Quality Data, www.arb.ca.gov.

AQ-2.1: The General Plan 2023 includes the following goals, policies (P), and implementation measures (I) to help meet air quality standards and reduce the net contribution to the current ozone and PM10 nonattainment status.

Goal AQ-1 Improve Manteca's air quality by:

Achieving and maintaining ambient air quality standards established by the U.S. Environmental Protection Agency, the California Air Resources Board, and the San Joaquin Valley Air Pollution Control District.

Goal AQ-2 Integrate air quality planning with land use and transportation planning processes in order to reduce vehicle miles traveled in the City and by commuters.

Goal AQ-3 Increase opportunities for alternatives to internal combustion automobiles including, but not limited to, public transportation, bicycles, walking and alternative fuel vehicles including hybrid gas-electric, electric and compressed natural gas.

Goal AQ-4 Reduce air emissions through energy conservation.

- 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.
- 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.

Air quality issues relating to construction activities are also addressed in the Air Quality Section of the General Plan 2023:

- AQ-P-7 New construction will be managed to minimize fugitive dust and construction vehicle emissions.
- AQ-I-4. 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.

POTENTIAL IMPACT AQ-3: Implementation of the General Plan 2023 would result in a cumulatively considerable net increase in ozone and PM10 air pollutants.

Given that the Valley is nonattainment for ozone and PM10, there are no mitigation measures to reduce the cumulative increase of these air pollutants when proposing additional urban development. However, the following policies (P) and implementation measures (I) are intended to reduce the net increase to the region's cumulative air pollution from the proposed General Plan 2023. The Air Quality Element works with the Circulation Element and the Land Use Element to provide measures to reduce air pollution.

Air Quality and 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-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 density 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.

Air Quality and 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.
- AQ-I-9 Maintain acceptable traffic levels of service (LOS~~E~~) as specified in the Circulation Element.
- AQ-I-10 In new subdivisions, require the internal street system design to include the installation of dedicated pedestrian/bicycle pathways connecting to adjacent residential and commercial areas as well as schools, parks and recreational areas.

POTENTIAL IMPACT AQ-4: **Implementation of the General Plan 2023 could expose sensitive receptors to substantial pollutant concentrations.**

Level of Significance: **Potentially Significant**

Sensitive receptors located in or near the vicinity of known air emissions sources, including freeways and intersections, are of particular concern. Sensitive receptors are located throughout the City of Manteca, and typically include the following: residences, athletic facilities, schools, health care facilities, playgrounds, convalescent centers, child care centers, and rehabilitation centers. In the case of schools, state law requires that siting decisions consider potential for toxic or harmful air emissions in the surrounding area.

Mitigation Measures:

AQ-4.1: The General Plan 2023 includes the following implementation measures (I) to help reduce exposure of sensitive receptors to pollutants:

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 ~~Locate air pollution point sources, such as manufacturing and extracting facilities, in areas designated for industrial development and separated from residential areas and sensitive receptors (e.g., homes, schools, and hospitals).~~

AQ-I-15 Design review criteria shall include the following considerations, at a minimum:

The developer of a sensitive air pollution point receptor shall submit documentation that the project design includes appropriate buffering ~~Establish buffer zones (e.g., distance, setbacks, landscaping) within residential and other sensitive receptor site plans~~ to separate the use ~~those uses~~ from highways, arterial streets, hazardous material locations and other sources of air pollution or odor.

Residual Level of Significance: **Less Than Significant With Mitigation**

Implementation of the above implementation measures will help protect sensitive receptors from exposure to air pollutants. These measures require land use siting and separation, and the use of buffers to protect sensitive receptors.

POTENTIAL IMPACT AQ-5: **Implementation of the General Plan 2023 could create objectionable odors affecting a substantial number of people.**

Level of Significance: **Potentially Significant**

There are no proposed land uses in the General Plan 2023 which are expected to create objectionable odors that would affect a substantial number of people. However, it may be a possibility that odors could be produced by the proposed heavy industrial land uses.

Mitigation Measures:

AQ-5.1: The General Plan 2023 includes the following goal and policy (P) to help reduce the possibility of exposing people to objectionable odors:

Goal AQ-1: Improve Manteca's air quality by:

Minimizing public exposure to pollutants that create a public nuisance, such as unpleasant odors.

AQ-P-3 Segregate and provide buffers between land uses that typically generate hazardous or obnoxious fumes and residential or other sensitive land uses.

Residual Level of Significance: **Less Than Significant with Mitigation**

Implementation of the above goal will help reduce the possibility of exposing people to objectionable odors. ~~If odors do result from the proposed heavy industrial land uses, it is required that these odors be minimized.~~ While exposure to objectionable odor pollutants can be minimized through design and separation to a less than significant level, there is no way to fully mitigate the impact due to prevailing winds, atmospheric conditions, and peripheral pollutant point sources.

References:

- (1) San Joaquin Valley Air Pollution Control District. Air Quality Guidelines for General Plans. 1994.
- (2) California Air Resources Board. Air Quality and Emissions/Air Quality Data, www.arb.ca.gov.

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6. BIOLOGICAL RESOURCES

This biological resources section discusses impacts to wildlife and habitat in the area within and adjacent to the General Plan Study Area boundary. Existing habitat types are identified, as well as an inventory of special status plant and animal species that are known to occur, or may potentially occur, in the area.

6.1 EXISTING CONDITIONS

The Study Area outside the urbanized center and surrounding residential areas is predominantly farmland, including alfalfa, orchards, row crops, and pasture. Agriculture lands have become important foraging resources for a number of species, including Swainson's Hawk, which is a California State and federally protected species.

Although no major watercourse lies within the Study Area, the San Joaquin River flows ~~approximately four (4) miles to~~ along the west side of the Study Area boundary. Walthall Slough is a tributary to the river. The Slough's northern boundary is contiguous with the southwestern boundary of the Study Area.

Riparian woodland is found mainly along the San Joaquin River and Walthall Slough. Wetlands have also been identified along ~~Highway I-20~~ State Route 120 in the western portion of the Study Area. These are irrigation runoff impoundments which function as seasonal wetlands. Some of the numerous Study Area irrigation and drainage ditches and canals also support riparian vegetation.

6.1.1 Special Status Biological Resources

Special status biological resources include California State or federal listed, candidate, or proposed rare, threatened, and endangered, and sensitive animals, plants, and natural communities that have been afforded special status by public agencies or major conservation organizations.

California Department of Fish and Game

A computerized search of the California Department of Fish and Game (CDFG) California Natural Diversity Database (CNDDDB) was requested for the Manteca area 7.5 minute USGS topographic quadrangles (1). This search was conducted to determine if there are any known occurrences, or potential occurrences, of special status federal, California State, and California Native Plant Society (CNPS) listings. The database included a total of six (6) species (four wildlife and two plant species) that have been identified as occurring, or potentially occurring, within or adjacent to the Study Area, shown in Table 6-1. The general locations of these Special

Status Species are shown on Figure 6-1. The results of this search are included as Appendix D in the Technical Appendix to this EIR (Volume 2).

Table 6-1

Special Status Species Potentially Occurring Within or Adjacent to the Study Area

<p>1.</p> <p>State “Threatened Species”^a; Federal “Species of Concern”^b; MBTA^c</p>	<p>Swainson’s Hawk (<i>Buteo swainsoni</i>)</p>
<p>2.</p> <p>State “Species of Special Concern”^d; Federal “Candidate Species”^e</p>	<p>California Tiger Salamander (<i>Ambystoma californiense</i>)</p>
<p>3.</p> <p>State “Species of Special Concern”; Federal “Species of Concern”; MBTA</p>	<p>Tricolored Blackbird (<i>Agelaius tricolor</i>)</p>
<p>4.</p> <p>State “Species of Special Concern”; No Federal Status; MBTA</p>	<p>Burrowing Owl (<i>Athene cunicularia</i>)</p>
<p>5.</p> <p>State “Endangered Species”^f; Federal “Species of Concern”</p>	<p>Delta Button-Celery (<i>Eryngium racemosum</i>)</p>
<p>6.</p> <p>CNPS 2^g; No State or Federal Status</p>	<p>Wright’s Trichocoronis (<i>Trichocoronis wrightii</i> var <i>wrightii</i>)</p>

Notes:

State Threatened Species: Likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.

b) Federal Species of Concern: (Former Category 2) Informal term that refers to those species which might be in need of concentrated conservation actions, which may range from periodic monitoring to listing as Federal Threatened or Endangered. Species of Concern receive no legal protection, and the use of the term does not necessarily mean that the species will eventually be proposed for listing.

c) MBTA: Birds protected under the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.), which implements treaties with Great Britain (for Canada), Mexico, Japan and Russia for protection of migratory birds whose welfare is a federal responsibility.

d) State Species of Special Concern: Considered to be indicators of regional habitat changes, or are considered to be potential future protected species.

e) *Federal Candidate Species: (Former Category 1) Expected proposal for listing based on available scientific information and USFWS Study of biological vulnerability.*

f) *State Endangered Species: Survival and reproduction in the wild is in immediate jeopardy. In danger of extinction within the foreseeable future throughout all or a significant portion of its range.*

g) *CNPS (California Native Plant Society) 2: Plants rare, threatened or endangered in California, but more common elsewhere.*

(Listing: Classified as Endangered or Threatened under the State and/or Federal Endangered Species Acts)

Source: California Department of Fish and Game (CDFG) California Natural Diversity Database (CNDDDB), August 21, 2001; update March 2003.


Swainson's Hawk (*Buteo swainsoni*)

Swainson's hawks were once found throughout California except in the mountainous regions of the state. Today, Swainson's hawks are mostly limited to a few areas of the Great Central Valley and the Great Basin. Historically, there may have been a population in excess of 17,000 pairs; their estimated population in 1992 was 550 pairs in the state. The best remaining habitat for these hawks is found along permanent waterways with a continuous canopy of trees for nesting, with grassland, irrigated pasture, alfalfa or grain fields nearby for foraging. (San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), page 2-48) (3)


California Tiger Salamander (*Ambystoma californiense*)


The California tiger salamander is an amphibian found in the Great Central Valley and the Coast Ranges of California, generally at elevations below 1,000 feet. There are records for this species on both the west and east side of San Joaquin County; the project database includes 38 occurrences, of which 30 define occupied habitat. The California tiger salamander requires both an aquatic and terrestrial habitat for completing its life cycle, and cannot survive in a landscape that does not provide proper conditions for both. This salamander inhabits grasslands, but requires water for successful reproduction. Temporary pools, such as vernal pools and stock ponds, are the optimal breeding ponds for this salamander; permanent pools generally contain predators of the larval salamanders such as introduced fish and bullfrogs. The temporary pools hold water for the several months required for larval transformation. At the onset of the dry season, tiger salamanders return to the nearby uplands (grasslands) for estivation (a state of inactivity). Estivation burrows are found at an average of 3,000 feet from the breeding ponds (ranging from 330 feet to one mile). Holes and crevices created by ground squirrels and other animals are used for these burrows. After approximately nine months of estivation, the adult salamanders migrate back to the breeding ponds. (San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), pages 2-40,41) (3)


LEGEND


 Study Area Boundary


Species

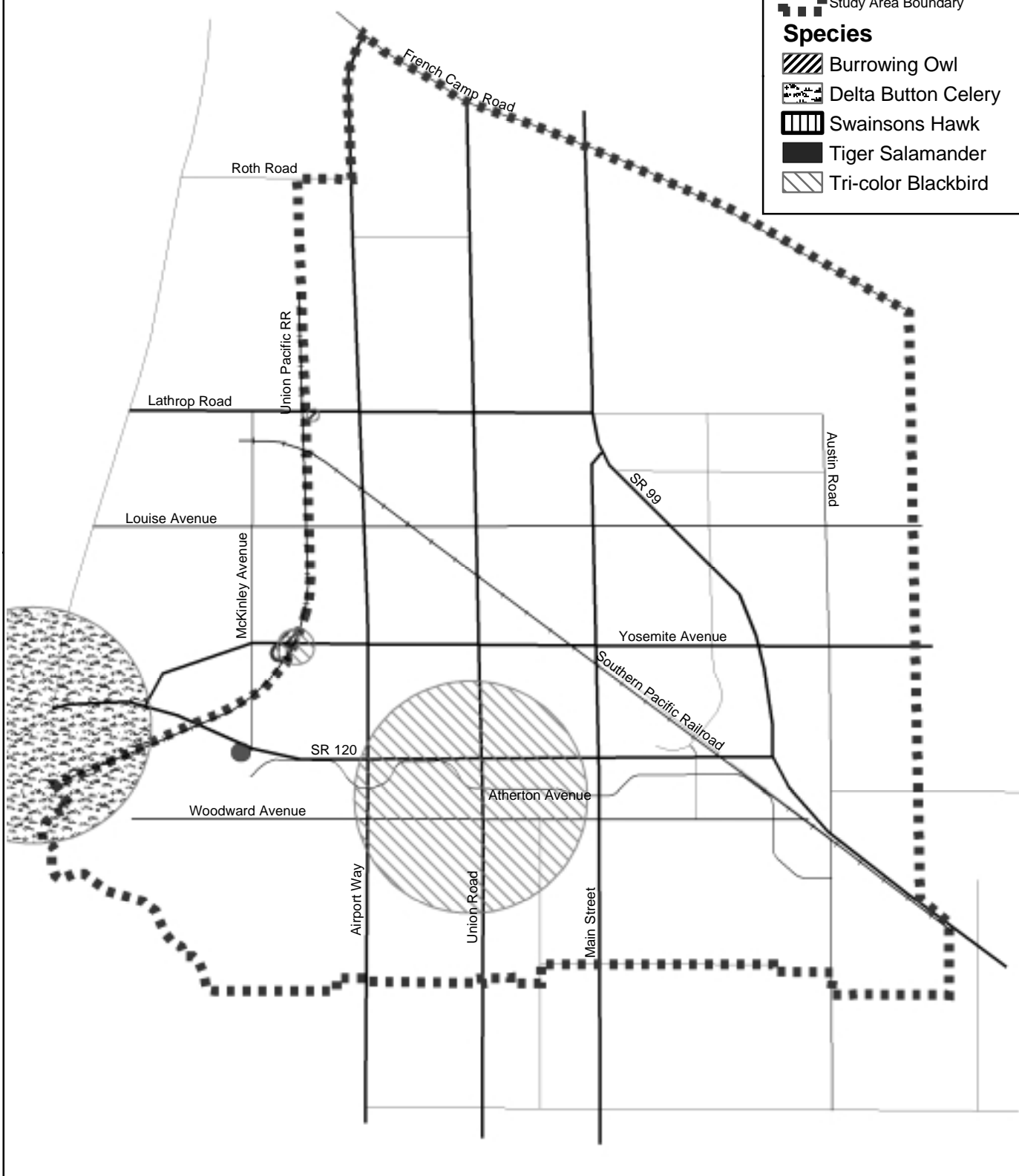
 Burrowing Owl

 Delta Button Celery

 Swainsons Hawk

 Tiger Salamander

 Tri-color Blackbird



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Tricolored Blackbird (*Agelaius tricolor*)

Tricolored blackbirds occur chiefly in California in the Central Valley, surrounding foothills, coastal areas, and scattered inland areas of northern and southern California. The Central Valley population of this blackbird declined by perhaps more than 50% from 1937 to 1972. The total population of the tricolored blackbird continues to decline. San Joaquin, as part of the Sacramento-San Joaquin Delta, may be important wintering habitat for this bird. Low reproductive success has recently been found in deep water marshes of cattails (*Typha spp.*) and bulrush (*Scirpus acuta*), due primarily to predation from black-crowned night herons and great blue herons. In contrast, reproductive success is often high for colonies nesting in armored vegetation, especially the Himalaya blackberry (*Rubus procerus*), which protects nests from many predators. Foraging areas must be within a few miles of the nesting site. High-value foraging habitats for breeding tricolored blackbirds include grasslands and pastures (irrigated and non-irrigated), vernal pool-grassland complexes, and hay fields of alfalfa or other species, especially if recently cut and flood-irrigated. (San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), pages 2-45,46) (3)

Burrowing Owl (*Speotyto cunicularia*)

Burrowing owls inhabit open grasslands and shrublands in the Central Valley, coastal regions, and deserts of California. Burrowing owls occur in a patchy distribution throughout San Joaquin County, but recent studies have shown a decline of over 50% in the numbers of breeding pairs in the Central Valley. Burrowing owls occur in open ground and forage on small rodents and larger insects. They live and breed in burrows created by mammals such as ground squirrels and badgers. The owls take over the burrows when abandoned by the original residents. (San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), page 2-52) (3)

Delta Button-Celery (*Eryngium racemosum*)

The Delta button-celery plant species is an annual or perennial herb in the carrot, or celery, family. Its historic range is somewhat disjunct within the San Joaquin Valley and eastern foothills of the Sierra Nevada. However, populations in the San Joaquin and Stanislaus Counties are considered by the California Native Plant Society to have been extirpated. The project database includes 11 collections from San Joaquin County, including the Lathrop USGS Quad coverage area; however, none is used to define occupied habitat. The habitat of this plant species consists of vernal mesic (wet during the spring season) clay depressions, often with riparian scrub. (San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), pages 2-26,27) (3)

Wright's Trichocoronis (*Trichocoronis wrightii* var *wrightii*)

The Wright's trichocoronis plant species is an annual member of the aster, or sunflower, family. Its historic range is in the Central Valley of California from Sutter and Colusa Counties south to Merced County, a disjunct population in Riverside County, and in Texas. It is not clear whether the California populations constitute a separate species. It is presumed extirpated from all known localities in the Central Valley, including the single record from the Lathrop U.S.G.S. Quad. The habitat for this plant species is reported as moist places, mudflats, and shores. (San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), page 2-30) (3)

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (USFWS), Sacramento Fish and Wildlife Office, also provided a compilation of special status species that may occur in or be affected by projects within the Manteca Area Quadrangles and San Joaquin County (2). This compilation is included as Appendix E` in the Technical Appendix to this EIR (Volume 2).

6.1.2 The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) (3,4,5)

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) is a multi-species, multi-habitat, multi-purpose open space management program for all of San Joaquin County. The impetus for the Plan arose from conflicts between proposed development and habitat lands for the Swainson's Hawk and San Joaquin Kit Fox, species that are protected under the California Endangered Species Act (CESA) and the Federal Endangered Species Act (ESA). The Plan covers 97 fish, plant, and wildlife species which are afforded varying degrees of protection under the California Environmental Quality Act (CEQA), CESA, ESA, the Migratory Bird Treaty Act (MBTA), and other local, state, and federal regulations. The six Special Status Species discussed above are among the 97 species covered by the SJMSCP.

Because the habitats for these species span multiple jurisdictions, local jurisdictions approached the San Joaquin County Council of Governments (SJCOG) to coordinate a regional strategy to open space planning. A Memorandum of Understanding (MOU) to prepare the SJMSCP was adopted on October 10, 1994 by participating city, county, state, and federal jurisdictions. The Plan is administered on behalf of Plan participants by a Joint Powers Authority (JPA) that has adequate authority to carry out the Plan.

The SJMSCP's stated purpose is to:

"...provide a strategy for balancing the need to conserve Open Space, which contributes to the quality of life of the residents of San Joaquin County, with the on-going pressure to convert Open Space to accommodate a growing population, while at the same time

protecting the region's agricultural economy, preserving landowner property rights, and providing long-term management of plant, fish and wildlife.”

The Manteca City Council adopted the SJMSCP (Resolution #R2001-46) on February 5, 2001, signing a Joint Powers Agreement with other city, county, state, and federal agencies.

Description of SJMSCP

The SJMSCP is a 50-year plan (2001-2051) that 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. The specific compensation options are shown in Table 6-2. The Plan also includes some compensation to offset the impacts of open space conversions on non-wildlife related resources such as recreation, agriculture, scenic values, and other beneficial open space. The Plan proposes preserves that contain habitat for many species, not just the targeted species. It is possible that more common plant, fish and animal species may be evaluated for listing in the future; a primary factor in determining the status of those species is likely to be loss of habitat. The SJMSCP preserves benefit these more common species and may help avoid future listings.

SJMSCP Conservation Strategy

The SJMSCP conservation strategy relies on minimizing, mitigating, and avoiding impacts for the covered species.

Minimization

Minimization of impacts to SJMSCP covered species takes a species-based approach emphasizing the implementation of Incidental Take Avoidance Measures aimed at averting the actual killing or injury of individual SJMSCP covered species, and minimization of impacts to habitat for such species in Open Space Lands converted to non-open space uses.

Mitigation

Mitigation of unavoidable impacts to SJMSCP covered species takes a habitat-based approach which emphasizes compensation for habitat losses through the establishment, enhancement and management-in-perpetuity of preserves composed of a specific vegetation type or association of vegetation types upon which discrete groups of covered species rely. Within these preserves, impacts to occupied or potential habitat of covered species will be offset by preserving lands containing potential or occupied habitat for the covered species or group of covered species impacted or for which impacts are assumed. Preserves will normally be located outside of designated existing and planned urban boundaries predominantly on productive agricultural lands located throughout the County. The purchase of easements from landowners willing to sell urban development rights will be the primary method of acquiring preserves.

To ensure that permitted activities will not result in jeopardy to covered species, the Plan also establishes, as part of the mitigation component of its conservation strategy:

- limits to the number of acres of Natural Lands which may be converted from Open Space Lands Countywide;
- limits to the number of acres of occupied and/or potential habitat that may be converted for selected covered species;
- special conservation and mitigation requirements for San Joaquin kit fox, valley elderberry longhorn beetle, valley oak woodlands, and vernal pools;
- mitigation emphasizing changes in project design for linear projects which may create barriers to dispersal of covered species or other plants, fish, or wildlife.

Avoidance

The SJMSCP provides an alternative mitigation approach which allows complete avoidance of covered species and jurisdictional wetlands through project re-design as a substitute for SJMSCP compensation. Wherever covered species or jurisdictional wetlands are entirely avoided, no compensation is required provided that the project proponent complies with the standards established by the SJMSCP.

Monitoring and Adaptive Management

The SJMSCP conservation strategy also relies on monitoring the status of covered species and the success of its minimizing and mitigating actions, and responding to deficiencies in those strategies through the application of an Adaptive Management Plan.

Open Space Categories

The SJMSCP classifies each vegetation type/habitat into one of four (4) general open space land categories for the purposes of evaluating impacts of open space conversions to non-open space uses, and to assist in determining compensation to offset these conversions

Natural Lands: Lands that remain natural vegetation and which are not irrigated or cultivated agricultural lands. These include primarily **riparian, vernal pools, and grassland habitats**. Natural lands are considered to have the highest Open Space value since they provide the most valuable plant, fish and wildlife habitat, provide opportunities for recreational trails along linear waterways, and provide outstanding scenic value.

Agricultural Habitat Lands: Lands that include **perennial and annual croplands**.

Multi-Purpose Open Space Lands: Lands that, if converted, would contribute to the overall loss of Open Space for agriculture, recreation, scenic values, and other beneficial Open Space uses. Multi-Purpose Open Space Lands are primarily **barren lands, or orchards and vineyards**.

Urban Lands: Lands that are already converted from Open Space use by urban uses as of January 11, 2000. These include **urban/industrial/built and scraped/paved** lands.

SJMSCP Permitted Activities

The SJMSCP compensates for conversion of open space for the following activities:

urban development, mining, expansion of existing urban boundaries, non-agricultural activities occurring outside of urban boundaries, agricultural activities which may trigger Section 404 of The Federal Clean Water Act and/or which are subject the Endangered Species Act, levee maintenance undertaken by the San Joaquin Area Flood Control Agency, transportation projects, school expansions, non-federal flood control projects, new parks and trails, non-federal irrigation district projects, utility installation, maintenance activities, managing reserves, and similar public agency projects.

Voluntary Plan

The SJMSCP is a voluntary plan for project proponents. Project proponents who opt not to accept Plan coverage must proceed under the project-by-project application process, including consultation with individual local, state and federal permitting agencies. Project proponents who opt for Plan coverage have four (4) options as shown in Table 6-2.

Table 6-2

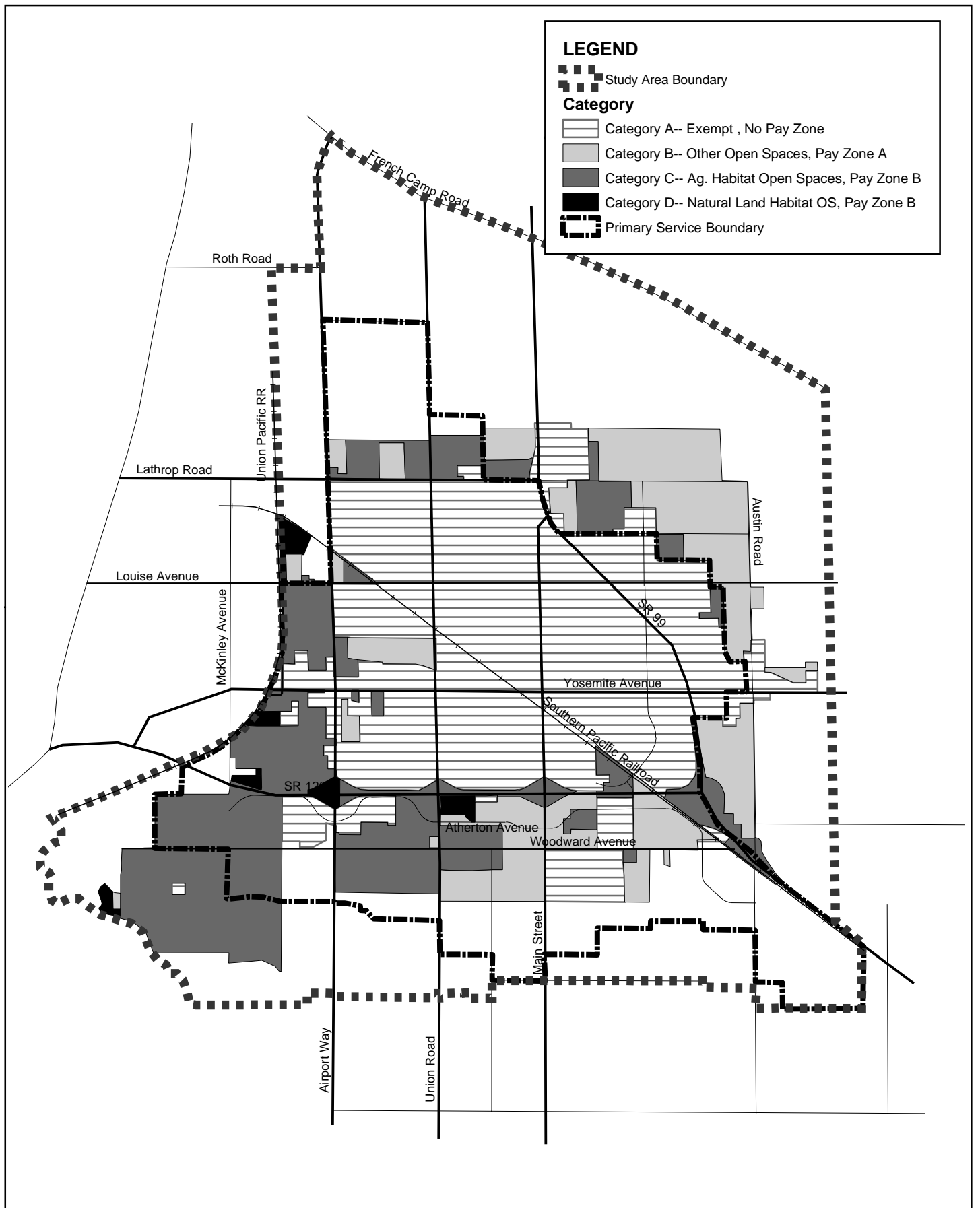
Project Proponent Options Under SJMSCP

PROJECT PROPONENTS WHO OPT FOR PLAN COVERAGE:
--

Option 1. Pay appropriate fee.

The Plan includes a program to allocate a proportionate share of the Plan costs to those undertaking new development projects that would result in conversion of open space land, through payment of ~~the following~~ across-the-board fees (these open space land categories are further discussed below):

Category A Exempt (Urban/Developed Lands)	No Pay Zone
Category B Other Open Space (orchards, vineyards, etc.)	\$750/ per acre
Category C Agricultural Open Space	\$1,500/ per acre
Category D Natural Habitat Open Space (non-vernal pool)	\$1,500/ per acre



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any covered land use conversion. The Plan therefore forms the basis for acquiring these binding agreements, known as "incidental take permits," from:

- Federal agencies (Section 10(a)(1)(B) Federal Endangered Species Act (ESA)); and
- State agencies (Section 2081(b) California Fish and Game Code, relating to species listed under California Endangered Species Act (CESA)).

The SJMSCP also applies to species that receive coverage through mitigation pursuant to CEQA.

Incidental Take is described in two ways under the SJMSCP:

- As Conversion of habitat of the covered species to urban and agricultural uses (expressed in acres) under the regulatory definition of "harm"; and
- As direct killing, injury, or harassment of individual animals.

Incidental Take will be minimized under the SJMSCP through implementation of Incidental Take Minimization Measures to reduce the levels of Take, and will be mitigated through measures to compensate for the effects of such Take as is unavoidable under the Plan.

Open Space Land Conversions Permitted Pursuant to SJMSCP

The goal of the SJMSCP is to provide 100,841 acres of Preserves based on an estimated conversion acreage of 109,302 acres. The SJMSCP anticipates acquiring land primarily through conservation easements and fee title at a ratio of approximately 90% easements to 10% fee title acquisition. Establishment and/or use of mitigation banks, and in-lieu land dedications also will play a role in preserving habitats under the SJMSCP. (SJMSCP Chapter 5, Sections 5.3.2 and 5.3.3)

Table 6-3 lists estimates of overall open space and habitat conversions anticipated for the 50-year term of the SJMSCP.

The SJMSCP limits the conversion of Natural Lands to 14,202 acres within 50 years, or not more than 15% of the total acreage of Open Space conversion for SJMSCP permitted activities within any five-year period, whichever is less. The SJMSCP limits the conversion of Natural Lands for both SJMSCP permitted activities and non-SJMSCP permitted activities to 25,912 acres (10% of the existing Natural Lands mapped in San Joaquin County as detailed in Section 2, Table 2-1 of the Plan document) during the 50-year term of the Plan.

The SJMSCP limits the conversions of Agricultural Habitat Lands to 57,635 acres and Multi-Purpose Open Space Lands to 37,465 acres.

Table 6-3**Anticipated Open Space and Habitat Conversions Under 50-Year SJMSCP**

FULL BUILDOUT OF GENERAL PLANS (a) (Acres)	
CONVERSION ACRES TRIGGERING PRESERVE COMPENSATION (b)	
Natural Lands to be converted including submerged aquatic habitats (c)	14,202
Agricultural Habitat Lands (d) to be converted (non-orchard and non-vineyard)	57,635
SJMSCP Covered Species Habitat Conversions (b)	
Subtotal	71,837 (b)
MULTI-PURPOSE OPEN SPACE CONVERSIONS	
Multi-Purpose Open Space Lands to be converted (e)	37,465
Lands to be converted after 1999 Total	109,302
NEIGHBORING LAND PROTECTION PRESERVES	
Preserve Lands required to compensate for potential impacts to SJMSCP Covered Species which wander off SJMSCP Preserves and onto lands neighboring SJMSCP Preserves	600
Preserve Lands required to compensate for impacts to SJMSCP Covered Species (f)	$14,202 \times 3 = 42,606$ $57,635 \times 1 = 57,635$ $\underline{600 \times 1 = 600}$ 100,841

Notes:

(a) See SJMSCP Table 1-2 for details on the distribution of this acreage across the various

habitat types.

*(b) Per Sections 4.1 and 4.3, conversion of Agricultural Habitat Lands and Natural Lands triggers requirements to create Preserves. Conversions of Multi-Purpose Open Space Lands is not considered to result in Incidental Take, but is considered to contribute to cumulative impacts to common plant, fish, and wildlife species and to other impacts associated with converting Open Spaces to non-Open Space uses (e.g., agricultural impacts, scenic impacts). Therefore, fees collected due to conversions of Multi-Purpose Open Space uses will contribute to the overall cost of creating Preserves, but conversion of Multi-Purpose Open Spaces does not trigger requirements to add new Preserve acres to the SJMSCP Preserve system. **These compensation requirements apply only to SJMSCP permitted activities.** Agricultural activities are not covered by the SJMSCP (except that conversion of wetlands as a result of agricultural activities requiring a Section 404 permit pursuant to the Federal Clean Water Act and/or subject to the Federal Endangered Species Act (ESA) may be covered pursuant to the SJMSCP). Therefore, conversion of Agricultural Habitat Lands, Natural Lands, Multi-Purpose Open Space Lands, or any lands by agricultural activities, except as noted above, triggers no actions or requirements related to the SJMSCP. Conversions of Agricultural Habitat Lands, Natural Lands, Multi-Purpose Open Space Lands, or any lands by agricultural activities remain subject to the same legal requirements, including the need to comply with the ESA and/or California Endangered Species Act (CESA) even when permits are not required pursuant to the Federal Clean Water Act, as were in effect before adoption of the SJMSCP. Individuals are encouraged to consult with local, state and federal agencies to determine applicable regulations.*

(c) SJMSCP permitted activities affecting submerged aquatic habitat are listed in Section SJMSCP Section 8.2.1(4).

(d) The term “Agricultural Habitat Land” is not equivalent to similar terms used in the 1996 “Federal Farm Bill.

(e) See SJMSCP Glossary (Chapter 10) and Section 2.2.1.3 for a description of Multi-Purpose Open Space Lands.

(f) Per compensation ratios established by the SJMSCP in Section 4.1. See Section 1.1.5 for a summary of compensation ratios.

Source: SJMSCP Table 1-1, page 1-4.

The SJMSCP limits the conversion of Natural Lands to 14,202 acres within 50 years, or not more than 15% of the total acreage of Open Space conversion for SJMSCP permitted activities within and five-year period, whichever is less. The SJMSCP limits the conversion of Natural Lands for both SJMSCP permitted activities and non-SJMSCP permitted activities to 25,912 acres (10% of the existing Natural Lands mapped in San Joaquin County as detailed in Section 2, Table 2-1 of the Plan document) during the 50-year term of the Plan.

The SJMSCP limits the conversions of Agricultural Habitat Lands to 57,635 acres and Multi-Purpose Open Space Lands to 37,465 acres.

In addition to the 71,837 acres of Open Space conversion that will result in Incidental Take, 37,465 acres of Multi-Purpose Open Space Lands are anticipated for conversion. Multi-Purpose Open Space Land conversion is not anticipated to result in Incidental Take, but is addressed in the SJMSCP because of their value for the following purposes:

- common plant, fish, and wildlife species which are not included in the list of SJMSCP covered species;
- recreational areas;
- agricultural use;
- flood control or water regeneration uses,
- scenic areas;
- educational purposes;
- other beneficial open space uses.

Pay-As-You-Go

The requirement for compensation is triggered by new development. The SJMSCP is a “Pay-As-You-Go” Plan. This means that acquisition of Preserve lands will occur when, and at roughly the same pace, that new development occurs. While compensation is not required until development occurs, the Joint Powers Agreement (JPA) is permitted to purchase surplus lands to “get ahead” and establish Preserves in advance of Open Space conversions whenever feasible.

SJMSCP Index Zones

The conservation strategy for the SJMSCP is built upon the division of the County into five (5) distinctive zones:

- Central Zone
- Southwest Zone
- Vernal Pool Zone
- Primary Zone of the Delta
- Southwest/Central Transition Zone.

Each of the SJMSCP Index Zones is distinguished by a discrete association of soil types, water regimes, elevation, topography, and vegetation types.

The City of Manteca is located in the Central Zone. This zone encompasses the lands surrounding each of the County’s seven incorporated cities and most of the County’s unincorporated defined communities. The Central Zone is composed primarily of Agricultural Habitat Lands on the floor of the Central Valley including, primarily, row and field crops both ditched and unditched. The bulk of the County’s Multi-Purpose Open Space Land, in the form of orchards and vineyards, is also located within this Zone. The majority of existing urban

development and proposed new development in the County exists or will exist within the Central Zone.

Coverage Not Included in SJMSCP

Clean Water Act

The SJMSCP does not currently include coverage under the Clean Water Act (CWA) (Gerald Park, SJCOG, personal communication, December 2002 and May 2003). The SJCOG Joint Powers Authority intends to pursue a CWA regional general permit, or equivalent, from the U.S. Army Corps of Engineers. This permit is expected to cover activities which may trigger Section 404 of the Federal Clean Water Act and/or which are subject to the Endangered Species Act. Until issuance of the CWA regional general permit or its equivalent, acquisition of a Section 404 permit by project proponents will continue to occur as required by existing regulations.

There are areas within the Study Area that may contain jurisdictional waters of the United States.

Streambed Alteration (Fish and Game Code Division 2, Chapter 6)

Streambed alteration is not currently covered by the SJMSCP; however, the JMSPC Joint Powers Authority intends to pursue a Programmatic Streambed Alteration Agreement with the California Department of Fish and Game.

Agricultural Activities

Any agricultural activity located on agriculturally zoned land which is not covered by the SJMSCP remains subject to the ESA, CESA, CWA and other state and federal regulations.

Dredging

Dredging activities are not covered by the SJMSCP, except for those dredging activities of limited size already permitted.

Water Diversion and Conveyance

Existing Biological Opinions

Activities currently receiving "Take" authorization under an existing biological opinion are not listed as permitted activities in the SJMSCP.

Study Area Vegetation Types and Habitats

The SJMSCP Biological Analysis identified the following four (4) vegetation types and habitats within the Study Area:

Riparian

The primary area of riparian vegetation and habitat is associated with Walthall Slough. The Slough's northern boundary is contiguous with the southwestern boundary of the Study Area.

There are irrigation water impoundments along State Route 120 in the western portion of the Study Area. These impoundments appear to have been constructed for irrigation runoff from the adjacent farm plots. They function as seasonal wetland vegetation communities. These seasonal wetlands are found within SJMSCP Natural Lands Habitat Open Space areas, shown along State Route 120 in Figure 6-2 above.

There are irrigation and drainage ditches and canals within the Study Area that support riparian vegetation. The major canal within the Study Area is the French Camp Outlet Canal which runs generally north-south along the east side of the Union Pacific Railroad. The lateral drainage ditches empty into the French Camp Outlet Canal. The French Camp Outlet Canal and lateral ditches are periodically cleared of vegetation to remove obstruction to the flow of water.

Croplands

Orchards and Vineyards

Golf Course/Cultivated Parklands

Study Area "Riparian" areas are found in the SJMSCP Natural Lands Habitat Open Spaces, Category D (Shown on Figure 6-2 above).

Study Area "Croplands" are found in the SJMSCP Agricultural Habitat Open Spaces, Category C (shown on Figure 6-2 above).

Study Area "Orchards and Vineyards" and "Golf Course/Cultivated Parkland" are found in the SJMSCP Other Open Spaces, Category B (shown on Figure 6-2 above).

6.2 REGULATORY SETTING

6.2.1 Applicable Federal Regulation

United States Fish and Wildlife Service Regulation

The United States Fish and Wildlife Service (USFWS) implements the Migratory Bird Treaty Act (16 USC Section 703-711), the Federal Endangered Species Act (ESA, 16 USC Section 153 et seq.), and the Bald and Golden Eagle Protection Act (16 USC Section 668).

Migratory Bird Treaty Act (MBTA)

The Federal Migratory Bird Treaty Act implements domestically a series of treaties between the United States and Great Britain (acting for Canada), Mexico, Japan and Russia. The Act, first enacted in 1918, protects international migratory birds, and authorizes the Secretary of the Interior to regulate the “taking” of migratory birds. The USFWS interprets the Act’s protection to be “zero loss” of migratory birds. However, the courts have recognized that liability for birds flying into such obstacles as structures, plate glass windows, and aircraft is unreasonable, and that the test of compliance is good faith and reasonable care. Precedence exists that reasonable mitigation measures are acceptable where complete avoidance of migratory bird loss was infeasible.

Federal Endangered Species Act (ESA)

Section 9 of the ESA prohibits the “take” of federally listed threatened and endangered fish and wildlife species. In general, ESA does not protect listed plants located on nonfederal lands unless such species are already protected by state law. “Take” is defined to include harassing, harming (including significantly modifying or degrading habitat), pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species, or any attempt to engage in such conduct (16 US Government Code 1532, 50 CFR 17.3). Actions that result in a take may result in civil or criminal penalties

Projects that would result in adverse effects on any federally listed threatened or endangered species are required to consult with, and mitigate through consultation, with the USFWS. This consultation can be pursuant to either Section 7 or Section 10 of the Endangered Species Act. Section 7 outlines the procedures for federal interagency cooperation. Federal agencies are required to consult with the USFWS to ensure that their federal projects do not jeopardize a listed species or critical habitat. Section 10 applies when a federal project is not involved, but “take” of a listed species may occur. Section 10 allows the USFWS to permit an incidental take of a listed species if such take is accompanied by a Habitat Conservation Plan (HCP) that includes measures to minimize and mitigate the impact. The objective of consultation is to determine whether the project would jeopardize a protected species, and what mitigation measures would be required to avoid jeopardizing the species. Species that are identified as candidates for listing do not have the full protection of the Endangered Species Act; however, the USFWS advises project applicants that a candidate species could be elevated to listed status at any time.

The ESA requires the development of recovery plans for listed species. The primary goal of USFWS is to restore endangered or threatened animal and plant species to the point that they can be downlisted or delisted. USFWS has no specific legislative mandate to require federal, state, or local agencies, or private entities, to implement tasks for endangered and threatened species recovery; however, the recovery plans indicate potentially “responsible parties” that may be interested in carrying out particular recovery tasks.

U.S. Army Corps of Engineers Regulation

Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (Corps) has authority to regulate activity that could discharge fill or dredge material, or otherwise adversely modify wetlands or other waters of the United States.

Clean Water Act

The Clean Water Act and the guidelines outlined in a Memorandum of Agreement (MOA) between the Environmental Protection Agency and the Corps dated November 15, 1989, established the goal of restoring and maintaining existing aquatic resources. The MOA directed the Corps (1) to strive to avoid adverse impacts, and offset unavoidable adverse impacts, to existing aquatic resources; and (2) to strive to achieve a goal of “no overall net loss” of the values and functions of wetlands. These guidelines apply to all waters of the United States, and require mitigation based on “values and functions” for all aquatic resources that are impacted.

Waters of the United States include perennial and intermittent streams, their tributaries, lakes, rivers, ponds and adjacent wetlands. Wetlands are defined as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils conditions.”

In 2001, the U.S. Supreme Court ruled that the Corps has jurisdiction only over wetlands that are adjacent to navigable Waters of the United States, interstate water, all other waters where the use, degradation, or destruction could affect interstate or foreign commerce, or tributaries to any of these waters. The Corps has historically claimed jurisdiction over “isolated” water as well. This court ruling also substantially weakened federal protection over non-tidal wetlands that are not part of or adjacent to navigable Waters of the United States. The Corps is currently evaluating its jurisdiction over isolated wetlands on a case-by-case basis.

The Corps has developed a number of nationwide general permits for activities which have only minimal individual and cumulative impacts where the work meets certain criteria and conditions. Nationwide Permits (NWP) cover minor road crossings, utility line backfills, repair of existing structures, bank stabilization, and other routine discharges of dredged or fill material. Some work authorized by nationwide permits requires pre-construction notification, or reporting, and individual water quality certification or a waiver, from the California Regional Water Control Board under Section 401 of the Clean Water Act. Typically, permits issued by the Corps are a condition of a project as mitigation to offset unavoidable impacts on wetlands and other waters of the United States, in a manner that achieves the goal of “no net loss” of wetland acres or values as required by Executive Order 11990.

If the nationwide permit conditions cannot be met, then those projects may be authorized by other general permits or individual permits. The range of project alternatives should include

alternatives that avoid impacts to wetlands or other waters of the United States. When it can be clearly demonstrated that there are no practicable alternatives to filling these waters, mitigation plans should be developed to compensate for the project impacts.

On January 15, 2002, the Corps announced the re-issuance of all existing NWP's to be effective on March 18, 2002 and to expire on March 19, 2007. The new NWP's maintain the less-than-one-half acre average threshold for use of NWP's, as previously modified in March of 2000, when the Corps reduced the acreage threshold from three (3) acres to one-half (1/2) acre. Therefore, any project that impacts more than one-half acre of wetlands will require an individual permit. Also, any project that impacts more than 300 linear feet of streambed will require an individual permit.

6.2.2 Applicable State Regulation

California Department of Fish and Game Regulation

The California Department of Fish and Game (CDFG) derives its authority from the Fish and Game Code of California. Species listed under the California Endangered Species Act (CESA) cannot be "taken" without adequate mitigation and compensation.

The CESA definition for take is defined as any activity that would directly or indirectly kill an individual of a species, but does not include "harm" or "harass" as in the FESA. As a result, habitat modification is not necessarily considered a take under CESA. The take of state-listed species requires an incidental take permit under the Fish and Game Code Section 2081. CDFG also coordinates with USFWS during the Section 10 process to make the federal permit consistent with CESA.

CDFG receives its authority to designate and protect rare plants under the California Native Plant Protection Act of 1977 (CDFG Code Section 1900 et seq.). CEQA Guidelines Section 15380 defines "rare" in a broader sense than the definitions of threatened, endangered, or species of special concern. Guidelines issued by the Director of CDFG state that plants in the California Native Plant Society (CNPS) 1B category fulfill the criteria of "rare" under Section 15380 of the CEQA Guidelines, and should be included in environmental impact reports and mitigations. CDFG guidelines do not carry the obligations of law or regulation, but CDFG views this policy as a means to avoid project delays in addressing species issues of which the applicant was not formerly notified. CDFG can request additional consideration of species not otherwise protected under this definition.

Fish and Game Code Section 3511 describes bird species, primarily raptors, which are "fully protected." These birds may not be taken or possessed except under specific permit. Section 3503.5 of the Code protects all birds of prey, and their eggs and nests.

Section 1601 through 1607 of the CDFG Code prohibit all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources, without the consent of CDFG. The limit of CDFG jurisdiction is up to the 100-year flood level. This would apply to any channel modifications that would be required to meet drainage, transportation, or flood-control objects of the projects.

Species of Special Concern (CSC) is a category conferred by CDFG for those species which are considered to be indicators of regional habitat changes, or are considered to be potential future protected species. CSC do not have any special legal status, but are intended by CDFG for use as a management tool to take these species into special consideration when decisions are made concerning the future of any land parcel.

California Endangered Species Act (CESA)

The California Endangered Species Act (Fish and Game Code Section 2050 et seq.) is similar to the Federal ESA, but it pertains to state-listed endangered and threatened plant and wildlife species. CESA requires state agencies to consult with the California Department of Fish and Game (CDFG) when preparing CEQA documents in order to ensure that lead agency actions do not jeopardize listed species. It directs agencies to consult with CDFG on projects or actions that could affect listed species, directs CDFG to determine whether jeopardy would occur, and allows CDFG to identify “reasonable and prudent alternatives” to a project consistent with conserving the species. A lead agency can approve a project that affects a listed species if it is determined that there are “overriding considerations;” however, agencies are prohibited from approving projects that would cause the extinction of a listed species. At this time, based upon the opinion of the California Attorney General’s Office, “take” does not prohibit indirect harm by way of habitat modification.

6.2.3 City of Manteca 1988 General Plan

The Natural Resources Element (Section VI) of the existing 1988 General Plan includes the following Goal and Policies which intend to protect, preserve, and enhance biological resources in the City of Manteca:

Goal C To protect sensitive native vegetation and wildlife communities and habitat in the Manteca Area.

- Policy C-1 The City shall attempt to ensure in approving new development that its impact on native vegetation and wildlife will be minimized.

- Policy C-2 New development in the vicinity of the San Joaquin River shall be conditioned to promote and protect riparian, wetlands, and other native vegetation and wildlife communities and habitats.

Policy C-3 The City shall discourage the removal of existing mature trees (both native and introduced).

6.3 **IMPACT EVALUATION CRITERIA**

In accordance with CEQA Guidelines, Appendix G, the proposed project would have a significant adverse impact on the environment if the project would:

- 1) have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- 2) have a substantial effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- 3) have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- 4) interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- 5) conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

6.4 **IMPACTS AND MITIGATION**

POTENTIAL IMPACT B-1: Implementation of the General Plan 2023 (proposed project) could result in the loss of identified special status species.

Increased development within the Study Area could lead to the loss of habitat and individuals of special status species.

The special status species identified by the California Department of Fish and Game (CDFG) California Natural Diversity Database (CNDDDB) as occurring, or potentially occurring, within or adjacent to the Study Area are shown in Figure 6-1. The general locations of the potential special status species within the Study Area are shown in Figure 6-1. These six (6) special status species are covered by the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP).

Level of Significance: Potentially Significant

Mitigation Measures:

B-1.1 The Resource Conservation Element of the proposed City of Manteca General Plan 2023 provides the following policies (P) and implementation (I) measures to protect and maintain special status species.

RC-P-29 Minimize impact of new development on native vegetation and wildlife.

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

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.

Residual Level of Significance: Less Than Significant With Mitigation

The level of significance will be mitigated to less than significant if the above policies and implementation measures are implemented.

Compliance with the SJMSCP will mitigate the impact to these covered special status species. Project proponents who opt not to participate in the SJMSCP must mitigate any impact to these

special status species through the “project-by-project” evaluation and mitigation process with each permitting agency. The major permitting agencies are discussed above in Section 6.2.

POTENTIAL IMPACT B-2: Implementation of the City of Manteca General Plan 2023 could result in the loss of riparian habitat or other sensitive natural communities.

Increased development within the Study Area could lead to the loss of riparian habitat or other sensitive natural communities.

A major area of riparian habitat is ~~approximately four (4) miles outside~~ located on the west side of the Study Area along the San Joaquin River. The riparian vegetation along Walthall Slough is contiguous with the southwestern Study Area boundary. This area of the proposed General Plan 2023 will be left undisturbed in open space.

The seasonal wetland areas (impounded irrigation runoff) along State Route 120 in the western portion of the Study Area also support riparian vegetation and associated wildlife. These wetland areas are located within the SJMSCP Natural Lands Habitat Open Space category. The General Plan 2023 proposes business/industrial park, commercial, and public/quasi-public/utility land uses near these seasonal wetlands.

Level of Significance: Potentially Significant

Mitigation Measures:

B-2.1: The Resource Conservation Element of the proposed City of Manteca General Plan 2023 provides the following goal, policies (P), and implementation (I) measures to protect and maintain riparian and other sensitive habitats.

- Goal RC-10 Protect sensitive native vegetation and wildlife communities and habitat in Manteca.
- RC-P-32 Condition new development in the vicinity of the San Joaquin River and Walthall Slough to ~~promote and~~ protect riparian habitat, wetlands, and other native vegetation and wildlife community.
- RC-P-36 Consider the development of new drainage channels planted with native vegetation, which would provide habitat as well as drainage.
- 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-36 Limit the access of pedestrians and cyclists to wetland areas so that access is compatible with long-term protection of these natural resources.

Residual Level of Significance: Less Than Significant With Mitigation

The level of significance will be mitigated to less than significant if the above goal, policies, and implementation measures are implemented.

The proposed General Plan 2023 protects the riparian habitat associated with Walthall Slough by designating the contiguous Study Area land as “open space.” Policy RC-P-32 further protects this important riparian habitat area by placing conditions upon new development in the vicinity.

Possible impacts to the seasonal wetlands along State Route 120 are covered by the SJMSCP Natural Lands Habitat Open Space category. Project proponents who opt not to participate in SJMSCP coverage will be required to conduct site-specific investigations, and to protect such areas through the “project-by-project” evaluation and mitigation process with each permitting agency.

POTENTIAL IMPACT B-3: The General Plan 2023 may have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, or hydrological interruption.

Federally protected (jurisdictional) “waters of the United States” include perennial and intermittent streams, their tributaries, lakes, rivers, ponds and adjacent wetlands. Impoundments of these waters may also be jurisdictional. Wetlands are defined as “those areas that are

inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils conditions.”

The SJMSCP does not currently include coverage under the Clean Water Act (CWA). The SJCOG Joint Powers Authority intends to pursue a CWA regional general permit, or equivalent, from the U.S. Army Corps of Engineers. This permit is expected to cover activities which may trigger Section 404 of the Federal Clean Water Act and/or which are subject to the Endangered Species Act.

The proposed land use adjacent to the Walthall is open space; therefore, this tributary to the San Joaquin River should not be adversely impacted by implementation of the General Plan 2023.

There are no free-running streams or natural bodies of water within the Study Area. The majority of the Study Area has been historically leveled and any naturally occurring drainages have been channelized or otherwise disturbed. Some of the numerous Study Area irrigation and drainage ditches/canals support riparian vegetation. The irrigation runoff impoundments along State Route 120 on the west side of the Study Area function as seasonal wetlands. If the Corps determines that the irrigation and drainage ditches/canals, or the irrigation water impoundments on the western edge of the Study Area represent waters “adjacent” to the San Joaquin River, these features would be regulated pursuant to Section 404.

No vernal pools are recorded by the SJMSCP within the Study Area.

Level of Significance: Potentially Significant

Mitigation Measures:

B-3.1: The Resource Conservation Element of the proposed City of Manteca General Plan 2023 provides the following implementation (I) measure to protect federally protected wetlands.

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.

Residual Level of Significance: Less Than Significant With Mitigation

The level of significance will be mitigated to less than significant if the above implementation measure is implemented.

If the Corps determines that there are jurisdictional waters within the Study Area, project proponents in those areas must pursue required permits. If the nationwide permit conditions cannot be met, then those projects may be authorized by other general or individual permits. The range of project alternatives must include alternatives that avoid impacts to the jurisdictional wetlands. When it can be clearly demonstrated that there are no practicable alternatives to filling these waters, mitigation plans must be developed to compensate for the project impacts.

POTENTIAL IMPACT B-4: Implementation of the General Plan 2023 could substantially interfere with the movement of wildlife species or with established native or migratory wildlife corridors.

The urban/suburban central area of the Study Area is surrounded by intensely farmed agricultural fields and orchards. There are no known native wildlife corridors passing through this developed and intensely farmed Study Area. However, some species of birds may forage in the agricultural fields during migration.

Level of Significance: Potentially Significant

Mitigation Measures:

B-4.1: The Resource Conservation Element of the proposed City of Manteca General Plan 2023 provides the following implementation (I) measures to reduce the impact of loss of agricultural lands to foraging migratory birds.

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).

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.

Residual Level of Significance: Less Than Significant With Mitigation

The level of significance will be mitigated to less than significant if the above implementation measures are implemented.

Compliance with the SJMSCP will mitigate the loss of agricultural lands to any foraging migratory birds. As a SJMSCP participating agency, the U.S. Fish and Wildlife Service will administer the Migratory Bird Treat Act (MBTA).

Project proponents who opt not to participate in the SJMSCP must mitigate any such impact through the “project-by-project” evaluation and mitigation process with each permitting agency, including the U.S. Fish and Wildlife Service.

POTENTIAL IMPACT B-5: Impacts on biological resources from the buildout of the General Plan 2023 may be cumulatively significant.

Level of Significance: Potentially Significant

The impact of expanding urban development on biological resources is cumulatively significant. Mitigating this cumulative impact is the major objective of the SJMSCP.

Mitigation Measures:

B-5.1: The Resource Conservation Element of the proposed City of Manteca General Plan 2023 provides the following implementation (I) measures to reduce the impact of expanding urban development on biological resources.

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.

Residual Level of Significance: Significant

~~Given the voluntary nature of participation in the SJMSCP, the level of significance cannot be mitigated to less than significant.~~ The SJMSCP is, in effect, a plan to mitigate both the site specific and the cumulative impacts of individual projects on biological resources within San Joaquin County. If all project proponents opted to participate in the SJMSCP, cumulative effects of the buildout of the General Plan 2023 could be mitigated to a less than significant level. However, it cannot be assumed that all project proponents will opt to participate in the SJMSCP. Any project proponent who opts against participating in the Plan will be proceeding under the “project-by-project” evaluation and mitigation process with each permitting agency. Since project-by-project evaluation cannot reasonably foresee the overall effects on biological resources of individual projects under multiple agency control, cumulative impacts may result.

References

- (1) California Department of Fish and Game (CDFG), California Natural Diversity Database (CNDDDB)
- (2) U.S. Fish and Wildlife Service (USFWS), Sacramento Fish and Wildlife Office, Special Status Species of the Manteca Area Quadrangles and San Joaquin County.
- (3) “San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP).” San Joaquin County Council of Governments et al, November 14, 2000.

- (4) “Draft Joint EIR/EIS for the Approval and Implementation of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (JMSCP).” San Joaquin County Council of Governments et al, September 23, 1999.

- (5) “Final Joint EIR/EIS for the Approval and Implementation of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (JMSCP).” San Joaquin County Council of Governments et al, November 5, 2000.

7. CULTURAL RESOURCES

This section summarizes known historical and archaeological resources within and adjacent to the Study Area. Potential impacts to cultural resources resulting from implementation of the proposed General Plan 2023 are identified.

This section is based upon and incorporates a cultural resources report authored by Ric Windmiller, Consulting Archaeologist, entitled “City of Manteca – General Plan Update: Background Report on Archaeological Resources and Historical Resources.” Mr. Windmiller’s research includes a record search requested from the Central California Information Center, California State University, Stanislaus, and a 1982 unpublished City of Manteca Historical Survey.

7.1 EXISTING CONDITIONS

7.1.1 Information Resources

The 1988 General Plan contained a survey from the Central California Information Center of the California Archaeological Inventory. The record searches were completed on October 25, 1985 and February 28, 1986. The searches revealed that three archaeological Native American occupation sites were located within the Study Area near the San Joaquin River.

However, it was noted that since cultural resource records for all counties in California were based on incomplete surface and subsurface archaeological and historic investigation, the apparent absence of cultural resources may not be indicative of the actual number, significance, age, or condition of cultural and archaeological resources present in the study area.

The General Plan 2023 record search identified only eight (8) recorded cultural archaeological resources for the Manteca General Plan Study Area:

1. Prehistoric Village and burial site overlain by a historic settlement site.
2. Segments of the Tidewater-Southern Railroad (later, Union Pacific)
3. Segment of the Western Pacific Railroad mainline.
4. Segment of Canal T and Drainage Canal, Southern San Joaquin Irrigation District.
5. Segment of Canal R, Southern San Joaquin Irrigation District.
6. Segment of Drainage Canal, Southern San Joaquin Irrigation District.
7. Historic Cemetery.

8. Kaiser Permanente Metals Corporation Magnesium Plant complex.

7.1.2 Archaeology (Prehistory and Ethnography)

The prehistory of the Manteca area is based on the archaeology of the greater Sacramento Delta region. The earliest known culture dating back to the Middle Archaic of 3000 B.C. was that of hunter-gatherers who buried their dead on clay knolls above the flood plains. The villages of these early settlers were located along the Central Valley's creeks, rivers and delta. The Bear Creek site, located in Stockton, is one example of a Middle Archaic site, which was excavated by archaeologists in the early 1960's.

Prehistoric settlement along the Central Valley's rivers and delta area coincide with the formation of the delta marshlands. At the end of the last ice age, the sea level rose as the continental ice sheets melted. By 8,000 years ago, marine waters began invading the depression that is now San Francisco Bay.

However, archaeologists have uncovered evidence of a much earlier culture in the region between the Valley rivers and delta, and the Sierra Foothills. At the eastern edge of the San Joaquin Valley near Farmington, scholars found stone tools eroding from cobble and gravel stream terraces that date back 7,000 to 9,000 years. The bearers of the Farmington tools would have been contemporaries of the Lower Archaic cultures that adapted to lake, marsh and grasslands along the eastern side of the Sierra Nevada.

Between 6000 and 3000 B.C., many pluvial lakes across the western United States became dry playas as a result of a general warming and drying trend. Between 4000 and 2000 BC, it is probable that Hokan languages were spoken in much of California. However, with increased aridity east of the Sierra, speakers of Penutian languages apparently began moving from the deserts of the northwestern Great Basin and southern Columbia Plateau into northern California.

Between 2000 and 500 B.C., Utian-speaking populations appear to have occupied the Sacramento Delta, the areas along rivers and streams, marshlands, as well as the hills on both the east and west sides of the Sacramento Valley. Expansion westward into the San Francisco Bay area seems to have brought about some type of fusion between the bearers of Utian languages and the resident speakers of Hokan and Yukian languages.

A relatively rapid climatic shift after 400 A.D. coincided with dramatic changes in prehistoric California cultures. It was during this period that ancestral Yokuts-speaking people, members of the Utian language family, probably abandoned foothill areas and congregated at villages near delta waterways. Relatively cool and moist climatic conditions from 1450 to 1850 A.D. coincided with population growth and florescence of native cultures. By the 1600s and 1700s, Yokuts-speaking people held nearly the entire San Joaquin Valley.

Manteca lies between the historic territory of the Chulamni and Lakisamne Yokuts tribelets. It is unfortunate that so little is known with respect to ethnography and archaeology in the northern

San Joaquin Valley. Because the native people were decimated by disease, missionization, and effects of the Gold Rush, it was too late for anthropologists to gather much useful information from the native people themselves.

Nonetheless, scholars have characterized the core of the Northern Valley Yokuts' homeland as the San Joaquin River with its maze of channels and sloughs. Yokuts villages consisted of dwellings oval in shape, constructed of light poles pulled together at the top, and covered with tule mats. Earth-covered "sweat houses" and earth-covered ceremonial lodges were also constructed in the villages.

Salmon and acorns figured prominently in the Yokuts diet, as noted in archaeological excavations at Yokuts village sites. Fish of all kinds were taken by nets and by harpoons. Yokuts fished from boats made of bundled tules. The Yokuts people also hunted waterfowl. Scholars suggest that although elk and antelope were abundant, Northern Valley Yokuts seem to have focused on smaller game, and gathered acorns, tule roots and other wild crops.

7.1.3 Cultural History

The first Europeans to arrive in the area, in 1769, were deserters from the Spanish military. In 1813, Spanish Franciscan friars, accompanied by soldiers, entered the San Joaquin Valley to round up the deserters, convert the Native Americans to Catholicism, and search for suitable mission sites. Although the Yokuts at first coexisted with the Europeans, they were eventually exploited by the newcomers and fought with the settlers. Two notable conflicts took place on the banks of the Stanislaus River, about one and one-half miles upstream from its confluence with the San Joaquin River. In the first battle on May 5, 1829, the combined Spanish forces from San Jose and San Francisco were defeated by the Indians, lead by Chief Estanislao. The Spanish later named the Stanislaus River after the Indian chief. General Vallejo returned to the area and on May 19, 1829, defeated the Yokuts, inflicting great losses.

In 1832, Colonel Warner, a member of a trapping expedition, reported finding numerous Indian villages along the San Joaquin River. Upon his return, he found the villages greatly depopulated due to a smallpox epidemic. Disease, war, and the displacement of Indians from their original hunting and fishing grounds had brought them to virtual extinction

Euro-American settlements in California increased sharply with the Gold Rush of 1848. French Camp, located approximately two miles north of the study area, was one of these first settlements and is one of the oldest existing settlements in San Joaquin County. French Camp was the terminus of the Oregon-California Trail used by French Canadian trappers employed by the Hudson Bay Company from about 1832-1845. On January 14, 1844, the Governor of California issued a land grant to Charles Weber and William Gulnac. The grant included French Camp and present day Stockton.

The first structures, including a public house, store, and adobe structure were erected in French Camp in August 1849. French Camp grew rapidly between 1851 and 1853 as French Camp Road was the only passable all-weather route for thousands of miners working in the Mother Lode. By 1854, a post office was established. As roads between Stockton and the Mother Lode improved, business in French Camp declined.

In addition to the discovery of gold in 1848 and the start of the Gold Rush in 1849, American annexation of California in 1846 and California statehood in 1850 contributed to the transformation of the Manteca area.

Many gold seekers of 1850 turned their attention to the soil when they realized gold would not earn them a living.

Ranchers who remained prominent in local agriculture for decades – John McMullin, Cutler Salmon, James Reynolds, Peter Clapp, George and Orseamis Sperry, and Joshua Cowell – were all well established by the mid-1860s.

The major outside influence on the area changed from gold mining in the Sierra Foothills, which slowed in the 1860s, to the railroad, which arrived in the 1870s. Lathrop, at the junction of two rail lines heading to Stockton, replaced French Camp as the Manteca area's major town. Manteca did not yet exist, although the railroad set up a flag stop, Powell's Station, at the present location of downtown. Community life within Manteca's present City limits focused on the corner of Louise Avenue and Union Road. The East Union School was moved there in 1857. A new school building, erected in 1865, had a second floor for church services and public events. A cemetery was established on another corner in 1872, and a church was constructed on a third corner in 1885.

The economy of Manteca was tied to the vast international grain combine. When prices collapsed in the 1890's, the entire country descended into a severe economic depression. To stay in business, local ranchers promoted irrigation for their farmland, which allowed more intense and more profitable use of the land. In 1909, the South San Joaquin Irrigation District was formed. The district delivered its first water in 1913.

Another agricultural development of the period was deeper land cultivation. This practice led to a widespread cultivation of watermelons on local ranches.

Cowell's Station, at first just an unwheeled boxcar, became the shipping point for local produce. It offered a convenient place at the junction of tow wagon roads. In 1896, a skimming station for raw milk was added. Additional enterprises followed. Soon, the Southern Pacific acknowledged the growing commercial activity by giving its station a more formal name, "Manteca", and replaced the boxcar with a small building.

Between 1905 and 1911, Manteca's downtown was the site for its first brick building, a winery, followed by its first telephone exchange, a post office and a hotel, the town's first two-story

building. A board of trade was set up on 1909. In 1910, a branch library and the town's first lumberyard were opened. Manteca was electrified in 1911, along with construction of a bank, a larger train depot, a pair of two-story brick buildings, and concrete sidewalks.

In 1914, the Manteca Canning Company was founded and a large plant for dairy products opened. In the next few years, three more canneries went into operation. In 1916, the Board of Trade succeeded in bringing a Spreckels sugar factory to town. The new plant, complete with office buildings, a clubhouse, landscaped grounds, and housing, opened in 1918.

The City of Manteca was incorporated on May 28, 1918.

Residential neighborhoods, laid out on an irregular north-south grid, were beginning to fill in by 1918. In just ten (10) years, Manteca grew from a few buildings around a railroad stop to a full-fledged city with public services, manufacturing facilities, and more than 60 businesses.

Residential construction continued strong in the 1920s. Weaknesses in Manteca's agricultural base slowed the town's growth. Despite setbacks, the town continued to grow. Its population rose 25 percent during the 1920s. The economic depression of the 1930s did not prevent further growth. A restart of the Spreckels Company's sugar plant and the opening of a Kraft Foods cheese factory boosted the local economy.

The United States as a whole enjoyed unprecedented prosperity after the end of World War II, and Manteca was no exception. During the 1950's, the City grew even faster, as Manteca's inexpensive housing and small-town atmosphere drew workers from the Sharpe Army Depot in Lathrop and industrial plants in outlying areas.

At various times in its history, Manteca has been known as the "watermelon capital of the world", "sugar beet town," "tomatoville," "sunflower center," and "dairy center of California".

7.1.4 Historical Resources

Current information on Manteca's historical resources is scattered and incomplete. One survey has produced a thorough analysis of buildings near the intersection of East Yosemite Avenue and Austin Road. Another provides preliminary information on ranch structures south of town. The State Historic Resources Inventory also has entries for four small downtown commercial buildings. In addition, the Manteca Historical Society has recognized sixteen important buildings and sites on its "Historical Walking Trail." The most useful source is probably Manteca: Selected Chapters from Its History, by Evelyn Prouty, which furnishes information on many historic properties that were still standing at the time of publication in 1980.

Commercial and Industrial Resources

Manteca has perhaps 100 commercial buildings remaining from the period before 1960. Nearly all are arrayed along Yosemite Avenue and crossing streets. These buildings include the former Jacot Department Store (1911), Oddfellows Hall (1911), the former Wiggin Hotel (1908), and the Pacific Motel (circa 1935).

The number of industrial buildings from the period is much smaller. Most are on Oak Street. Facing Oak Street are the two most important remaining buildings, and the only ones constructed of brick: Archille Bacilieri's old winery (1905) and former Kraft Cheese Factory (1937). A few other buildings, corrugated metal with no architectural detailing, also remain in the area.

Institutional Resources

Manteca retains a number of civic and religious buildings constructed in the 1950s and earlier. All of the major government buildings remain in altered form, including the former Irrigation District Headquarters (circa 1922), City Hall (1923), and Post Office (1939).

The schools, when they have survived, have fared much better. The most striking is the Lindbergh School (1928); a well executed example of the Late Gothic Revival. Two school buildings constructed after World War II – Lincoln School (1948) and Yosemite School (1950) – illustrate small-scale International Style design from the period. The small and apparently unaltered American Legion Hall (circa 1925) represents no architectural style but has vaguely classical detailing.

The most notable remaining church building is the former First Methodist Episcopal Church (1918), now home of the Manteca Historical Society. The building has a simple Gothic Revival design, which has been weakened somewhat by the application of plastic siding.

Residential Resources

Manteca has a fairly diverse collection of residential buildings. Nearly all have wood frames and were built for single families. Most have only one story and represent architectural styles or design ideas popular at the time of their construction. Those dating from before 1955 were usually constructed individually. Because most blocks filled in over several decades, houses of different ages and styles often sit on adjacent parcels. Manteca's old residential neighborhoods do not differ much from one another, though there may be a few more large houses northwest of downtown than elsewhere.

The older remaining houses date from after the turn of the last century. They are small, unadorned, and very few in number. The simple hipped-roofed cottage (circa 1905) on Willow Avenue may be the oldest house in the City.

By 1910, when substantial residential construction got underway in Manteca, the Craftsman style had come into vogue throughout California. An informal, often sprawling appearance typifies this style, which got its start in the Los Angeles area.

After World War I, so-called “period revival” styles enjoyed great popularity in California. Houses in these styles emulated those that were built in Europe in earlier times. The Tudor Revival proved the most popular in Manteca, probably because houses in this style could be small and inexpensive.

A revival to the period styles of the 1920s was the California Bungalow. Houses of this type resembled simplified Craftsman buildings.

California saw the arrival of modern styles in the 1930’s and 1940’s, most notably the California Ranch House and the International Style. Manteca also has a number of houses from this period.

Nearly all residential buildings in Manteca are single-family houses, with a few duplexes put up around World War II. Actual apartment houses were seldom constructed. One of Manteca’s most striking buildings, however, was always intended for multiple occupancy: the ten-unit Walser or Sherman Apartments (circa 1920) on North Sherman Avenue.

Resources in Outlying Areas

Most resources outside the City Limits but within Manteca’s present Study Area are connected to agriculture. By 1950, the number of large farm structures (houses, barns, water tanks) within the area might well have totaled 200. Maybe half remain today. A few date from the late nineteenth century, when wheat dominated local agriculture. The most notable of these structures have been well documented by historians. Most outlying agricultural buildings, however, come from the era of dairying and the raising of orchard crops. Some ranches are still in operation.

Other resources outside the City Limits include a few school buildings arrayed along Airport Way and East Yosemite Avenue in East Manteca. Structures associated with the South San Joaquin Irrigation District may also remain.

7.1.5 Records Search

A record search by the Central California Information Center, California Historical Resources Information Systems was completed on October 22, 2001. The following outlines the results of that record search.

7.1.6 Historic Buildings

The Information Center’s records search identified (10) buildings and structures previously recorded within the Manteca General Plan Study Area:

1. Jesse Building
2. Warren's Shoes
3. Manteca Drug
4. Home Run Hot Dogs
5. Craftsman Style bungalow, constructed in the late 1920s
6. Spanish Colonial Revival Style home, constructed in 1947
7. Craftsman Style bungalow, constructed circa 1930
8. Craftsman Style bungalow, constructed circa 1915
9. Period Revival Style house with minor Spanish Colonial Revival influences, constructed circa 1930
10. Calla High School

7.1.7 Historic Ranches

The Information Center's records search indicated that Thompson and West's History of San Joaquin County (1879) documented 24 historic ranches within Castoria Township that are also within the Manteca General Plan Study Area.

7.1.8 Cultural Resources Known to Have Value to Local Cultural Groups

The Central California Information Center's search of its records included a search for cultural resources known to have value to local ethnic and other groups. The results of that search were negative; no such cultural resources have been reported to the information center.

7.2 REGULATORY SETTING

Cultural resources are protected and managed in California primarily by the California Environmental Quality Act (CEQA), the State Historic Preservation Office (SHPO), and the National Historic Preservation Act (NHPA) of 1966.

7.2.1 Applicable Federal Regulations

National Historic Preservation Act (NHPA) of 1966

The NHPA includes and provides for:

- Advisory Council on Historic Preservation (ACHP) which is authorized by the Secretary of the Interior to maintain the National Register of Historic Places (NRHP);
- approval by the Secretary of the Interior of state historic preservation programs that provide for a State Historic Preservation Officer (SHPO); and
- a National Historic Preservation Fund program.

Section 106 of the NHPA requires that federal agencies take into account the impacts of their actions on properties that may be eligible for or listed on the NRHP, and provide the ACHP the opportunity to comment. All cultural sites that could be affected must be inventoried and evaluated for inclusion on the NRHP.

7.2.2 Applicable State Regulations

California Environmental Quality Act

Before discretionary projects are approved, the potential for significant impacts of the project on archaeological and historical resources must be considered under CEQA.

State archaeological and historic preservation regulations include CEQA Statutes and CEQA Guidelines (including Public Resources Code Sections 21083.2 and 21084.1, and Sections 15064.5 and 15126.4 of the CEQA Guidelines). CEQA requires lead agencies to carefully consider the potential effects of a project on historical resources. In addition, California law protects Native American burials, skeletal remains and associated grave goods regardless of their antiquity, and provides for the sensitive treatment and disposal of those remains (California Health and Safety Code Section 7050.5, California Public Resources Code Sections 5097.94 et seq.).

CEQA Section 21083.2 states,

“...the lead agency shall determine whether the project may have a significant effect on archaeological resources. If the lead agency determines that the project may have a significant effect on unique archaeological resources, the environmental impact report shall address the issue of those resources. An environmental impact report, if otherwise necessary, shall not address the issue of nonunique archaeological resources.” (Section 21083.2(a))

CEQA Section 21083.2 continues,

“...unique archaeological resource” means 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:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its types or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.” (Section 21083.2(g))

CEQA Section 21084.1 states,

“A project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment...an historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources...The fact that a resource is not listed in, or determined to be eligible for listing in, the California Register of Historical Resources, not included in a local register of historical resources, or not deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1 shall not preclude a lead agency from determining whether the resource may be an historical resource for purposes of this section.”

Under the CEQA Guidelines in Section 15064.5, a “historical resource” includes: a resource listed in or eligible for the California Register of Historical Resources; or listed in a local register of historical resources; or identified in a historical resource survey and meeting requirements in Section 5024.1(g) of the Public Resources Code; or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines historically significant, provided the determination is supported by substantial evidence in light of the whole record; or a resource so determined by a lead agency as defined in Public Resources Code 5020.1(1) or 5024.1.

Under CEQA Guidelines Section 15064.5(b), “(a) project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.” Substantial adverse change is physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired (CEQA Guidelines Section 15064.5(b)(2)).

While alteration of the setting of an archaeological site that is eligible only for its information potential may not affect the site’s significant characteristics, alteration of a property’s location (i.e., removing or damaging all or part of the site) may have a significant adverse effect.

CEQA Guidelines Section 15126.4(b)(3) state that, “(p)ublic agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature.” The guidelines further state that preservation in place is the preferred manner of mitigating impacts, and that preservation “may be accomplished by, but is not limited to, the following:

1. Planning construction to avoid archaeological sites;
2. Incorporation of sites within parks, greenspace, or other open space;
3. Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site; and
4. Deeding the site into a permanent conservation easement.”

CEQA Guidelines require that, “when data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared

and adopted prior to any excavation being undertaken (Section 15126.4(b)(3)(C)).” However, “data recovery shall not be required for a historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource (CEQA Guidelines, Section 15126.4(b)(3)(D)).”

California Historic Register

The State Historic Preservation Office (SHPO) maintains the California State Register of Historic Resources (CRHR). Properties that are listed on the National Register of Historic Properties (NRHP) are automatically listed on the CRHR, along with State Landmarks and Points of Interest. The CRHR can also include properties designated under local ordinances or identified through local historical resource surveys.

Under the California Environmental Quality Act (CEQA), historical resources are recognized as a part of the environment (Public Resources Code 21001(b), 21083.2, 21084(e), 21084.1). A “historical resource” includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript that is historically or archaeologically significant, or important in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California (Public Resources Code 5020.1).

The Public Resources Code affects historical resources and created the California Register of Historical Resources and the State Office of Historical Preservation (Public Resources Code Sections 5020.4, 5024.1, and 5024.6).

The California Register is an authoritative listing and guide for state and local agencies and private groups and citizens in identifying historical resources. This listing and guide indicates which resources should be protected from substantial adverse change. The California Register includes historical resources that are listed automatically by virtue of their appearance on or eligibility for certain other lists of important resources. The Register includes historical resources that have been nominated by application and listed after public hearing. Also included are historical resources listed as a result of an evaluation by specific criteria and procedures adopted by the State Historical Resource Commission, similar to those developed by the National Park Service for the National Register of Historic Places. However, criteria of eligibility for the California Register were reworded to better reflect California history.

Any building, site, structure, object or historic district meeting one or more of the following criteria may be eligible for listing in the California Register:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;

2. It is associated with the lives of persons important to local, California, or national history;
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

Eligibility for the California Register also depends on the integrity, or the survival of characteristics of the resource that existed during its period of significance. Eligible historic resources must not only meet one of the above criteria, but also they must retain enough of their historic character or appearance to convey the reasons for their importance, or retain the potential to yield significant scientific or historical information or specific data.

Like the process of evaluating historical resources for National Register eligibility, California Register evaluations include the consideration of seven aspects of integrity: location, design, setting, materials, workmanship, feeling and association. The evaluation of integrity must be judged with reference to the particular criterion or criteria under which a resource may be eligible for the California Register. However, the implementing regulations specifically caution that alterations of a historic resource over time may themselves have historical, cultural or architectural significance.

Most often, historical resources eligible for the California Register will be 50 years old or older. However, the new implementing regulations stipulate that “a resource less than fifty (50) years old may be considered for listing in the California Register if it can be demonstrated that sufficient time has passed to understand its historical importance.”

Each register uses similar criteria, and sites eligible for CRHR listing are also potentially eligible for inclusion on the NRHP.

Private Properties

While public agencies are required to consider the effects of their actions on properties listed on the NRCP and CRHR, no comparable provisions exist for listed properties owned by private individuals, organizations, or agencies. Consequently, the preservation of such properties or the mitigation of potentially adverse impacts are not required. However, both private and public owners of listed properties may be eligible to receive financial incentives for preservation or restoration.

7.2.3 City of Manteca 1988 General Plan

The Recreational and Cultural Resources Element (Section V) of the existing 1988 General Plan includes the following Goal and Policies, and Implementation Measures which intend to protect, preserve, and enhance the cultural resources of the City of Manteca:

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- Goal E To preserve and enhance Manteca’s historical heritage.
- Policy E-1 The City shall set as a high priority the protection and enhancement of Manteca’s historically and architecturally significant buildings.
- Policy E-2 The City shall work with property owners in seeking registration of historical structures as State Historic Landmarks or listing on the Federal Register of Historic sites.
- Policy E-3 The City shall prepare and adopt a Historical Preservation Ordinance.
- Policy E-4 The City and Redevelopment Agency shall support the efforts of property owners to preserve and renovate historic and architecturally significant structures. Where such buildings cannot be preserved in tact, the City shall seek to preserve the building facades.
- Goal F To protect Manteca’s Native American heritage.
- Policy F-1 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 recommendations of a qualified archaeologist. City implementation of this policy shall be guided by Appendix K of the State CEQA Guidelines.
- Policy F-2 The City shall refer development proposals that may adversely impact archaeological sites to the California Archaeological Inventory, Stanislaus State University.
- Implementation Measure 4 The City shall adopt and implement a historic building code, as authorized by state law.
- Implementation Measure 5 The City shall establish an agreement with the California Archeological Inventory at Stanislaus State University for review of development proposals that may adversely impact archeological sites.

7.3 IMPACT EVALUATION CRITERIA

In accordance with CEQA Guidelines, Appendix G, the proposed project would have a significant adverse impact on cultural resources if the project would:

- a) cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5;
- b) cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;
- c) directly or indirectly destroy a unique paleontological resource or site or unique geologic feature;
- d) disturb any human remains, including those interred outside of formal cemeteries.

Section 15064.5(a) of the CEQA Guidelines defines an “historical resource” as:

- 1. A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources.
- 2. A resource included in a local register of historical resources as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements in Section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant.

Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

- 3. Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency’s determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be “historically significant” if the resource meets the criteria for listing on the California Register of Historical Resources...including the following:
 - A. is associated with events that have made a significant contribution to the broad pattern of California’s history and cultural heritage;
 - B. is associated with the lives of persons important in our past;
 - C. 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
 - D. has yielded, or may be likely to yield, information important in prehistory or history.

Section 15064.5(c)(3) of the CEQA Guidelines defines an “archaeological resource” as follows:

If an archaeological resource does not meet the definition of a “historical resource,” it may meet the definition of a “unique archaeological resource” under Public Resource Code 21083.2. An archaeological resource is “unique” if it meets the following criteria:

1. is associated with an event or person of recognized significance in California or American history or recognized scientific importance in prehistory;
2. can provide information that is of demonstrable public interest and is useful in addressing scientifically consequential and reasonable research questions;
3. has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind;
4. is at least 100 years old and possesses substantial stratigraphic integrity;
5. involves important research questions that historical research has shown can be answered only with archaeological methods.

Section 15064.5(c)(4) of the CEQA Guidelines states that if an archaeological site is neither a “unique archaeological resource” nor a “historical resource” any effect to it shall not be considered significant. The environmental document must provide documentation supporting a conclusion of “no effect” and no further consideration is necessary.

7.4 IMPACTS AND MITIGATION

POTENTIAL IMPACT C-1: Implementation of the General Plan 2023 (proposed project) may cause a substantial adverse change in the significance of known and unknown archaeological or historical resources, or a unique paleontological resource or geologic feature.

Level of Significance: Potentially Significant

Mitigation Measures:

- C-1.1** The Resource Conservation Element of the proposed City of Manteca General Plan 2023 provides the following Goals, policies (P) and implementation (I) measures to protect archaeological and historical resources.
- Goal RC-11 Preserve and enhance Manteca’s archaeological and historic resources for their aesthetic, educational and cultural values.
- Goal RC-12 Protect Manteca’s Native American heritage.
- RC-P-35 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-36 The ~~City shall refer~~ shall require that the proponent of any development proposals, 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 ~~that may adversely impact archaeological sites to~~ the California Archaeological Inventory, at 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. ~~that may adversely impact archaeological sites to the California Archaeological Inventory, Stanislaus State University.~~
- RC-P-37 The City shall set as a ~~high~~ priority the protections and enhancement of Manteca’s historically and architecturally significant buildings.
- RC-P-38 The City shall work with property owners ~~in~~ seeking registration of historical structures as ~~State~~ Historic Landmarks or listing on the ~~Federal~~ Register of Historic Sites.

-
- RC-P-39 The City shall prepare and adopt a Historical Preservation Ordinance.
- RC-P-40 The City and Redevelopment Agency shall support the efforts of property owners to preserve and renovate historic and architecturally significant structures. Where such buildings cannot be preserved in tact, the City shall seek to preserve the building facades.
- RC-I-38. 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-I-39. Require that sponsors of proposed development projects on sites where probable cause for discovery of archaeological resources (as indicated by records search and where resources have been discovered in the vicinity of the project) retain a consulting archaeologist to survey the project site. If unique resources, as defined by California State law, are found, a qualified archaeologist or historian shall be called to evaluate the find and to recommend proper action. Require a monitoring plan for the project to ensure that mitigation measures are implemented.
- RC-I-40. When feasible, incorporate significant archaeological sites into open space areas.
- RC-I-41. The City should continue its inventory of all 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-I-42. The City shall continue to support the local historical society in their efforts to: The City should maintain an archive of historic information, including photographs, publications, oral histories and other materials, and make the information available to the public for viewing and research.
- ~~RC I 43. The historic archives will be compiled according to location in the City, and will be maintained in a safe environment to protect it over time.~~
- ~~RC I 44. The City should develop policies and the means to make the information available to the public for viewing and research.~~

- RC-I-45. All City permits for reconstruction, modification of existing buildings will require 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-I-46. Encourage the placement of monuments or plaques that recognize and celebrate historic sites, structures, and events.
- RC-I-47. The City shall adopt and implement a historic building code, as authorized by state law.

Residual Level of Significance: Less Than Significant With Mitigation

The level of significance will be mitigated to less than significant if the above goals, policies and implementation measures are implemented.

POTENTIAL IMPACT C-2: Implementation of the General Plan 2023 could disturb human remains, including those interred outside of formal cemeteries.

Level of Significance: Potentially Significant

The record search for the Study Area listed two sites of concern regarding human remains: a prehistoric village and burial site overlain by a historic settlement site near the San Joaquin River, and an historic cemetery.

The Native American archaeological site has been reported as destroyed. However, even Native American archaeological sites that appear to some to have been destroyed, may still retain cultural deposits significant for their information potential.

There is no known intention to disturb the human remains buried in the historic cemetery. The standard procedures of the County Coroner’s Office would be enforced in such cases.

Mitigation Measures:

C-2.1: The Resource Conservation Element of the proposed City of Manteca General Plan 2023 provides the following implementation (I) measure to reduce disturbance to discovered human remains.

- RC-I-48. If human remains are discovered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the county coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code Section 5097.98. If the coroner determines that no investigation of the cause of death is required and if the remains are of Native

American origin, the coroner will notify the Native American Heritage Commission, which in turn will inform a most likely descendant. The descendant will then recommend to the landowner appropriate disposition of the remains and any grave goods.

Residual Level of Significance: Less Than Significant With Mitigation

The level of significance will be mitigated to less than significant if the above implementation measure is implemented. Compliance will help to ensure that any human remains discovered are handled in accordance with state and federal laws.

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8. GEOLOGY, SOILS, AND SEISMICITY

This section discusses geologic conditions in the Manteca area. Specific issues are addressed including soil erosion, expansive soils, and seismicity.

As discussed in Section 1, Summary, mineral resources are not an issue in this General Plan Study Area, and will not be further analyzed.

8.1 EXISTING CONDITIONS

8.1.1 Geology of the Manteca Area

Manteca is located in northern San Joaquin Valley. The San Joaquin Valley is the southern section of the Great Central Valley of California; the Sacramento Valley is the northern section.

The Great Central Valley is a sedimentary basin, with the Coast Range to the west and the Sierra Nevada to the east. Almost all of the sediments that fill the Great Central Valley eroded from the Sierra Nevada. The oldest of these sediments are full of fragments of volcanic rocks eroded from its early volcanoes. As erosion stripped the cover of volcanic rocks from the granites of the Sierra Nevada, their detritus of pale quartz and feldspar sand began to wash into the Great Central Valley.

Drainage into the San Joaquin Valley is mainly from the Sierra Nevada. The sediments on the valley floor were deposited within the past one-two million years, some within the past few thousand years. (1)

Slope Instability

Generally, slopes are nearly level across the Study Area. The elevation ranges from approximately 10-50 feet above sea level, gently rising from the San Joaquin River on the west toward the east and the Sierra Nevada.

Slope instability is not a major constraint to land use in the Study Area because of the relatively flat topography

8.1.2 Study Area Soils

The Soil Conservation Service (now referred to as the Natural Resources Conservation Service (NRCS)) published a Soil Survey for San Joaquin County in 1992. (2) According to that Soil Survey, there are nineteen (19) soil series within the Study Area. A soil series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure,

reaction, consistence, mineral and chemical composition, and arrangement in the profile. The texture of the surface layer or of the underlying material can differ within a series.

The majority of the soils in the Study Area were formed in alluvium, and are found on low alluvial fans, low terraces, and floodplain along the San Joaquin River. These soils are moderately-deep to very-deep, and drainage ranges from partially-drained to moderately well-drained on the majority of these soils. The water table is relatively high.

The Study Area soils are shown in Table 4-1 of Section 4, Agricultural Resources.

Erosion Potential

Erosion can be defined as a combination of processes in which the materials of the surface of the earth are loosened, dissolved, or worn away, and transported from one place to another by natural agents. The primary concerns regarding soil erosion are soil loss, and water quality loss due to erosion and sedimentation.

There are two (2) types of soil erosion: water erosion and wind erosion.

Water Erosion: The Study Area soils are moderately-deep to very-deep, and drainage ranges from partially-drained to moderately well-drained on the majority of these soils. Given the partial-to-moderate drainage characteristics of the majority of the soils and the nearly level topography of the Study Area, water erosion hazard is considered low.

Wind Erosion: The Carquinez Strait, located approximately 55 miles to the northwest of the Study Area, is a sea-level gap in the coastal range. The prevailing wind through the Strait pushes marine breezes over the relatively flat terrain of the Valley. The wind erosion potential within the Study Area ranges from moderate-to-high during the spring, summer, and fall. These sea breezes diminish during the winter.

Subsidence Potential

Subsidence is the settlement of soils. Settlement can result from either desiccation (dehydration) and shrinkage, or oxidation of organic material, or both, following drainage.

The Soil Conservation Service found that subsidence is not a characteristic of the twenty-two soil series found within the Study Area (Table 4-1 in Section 4, Agricultural Resources).

Expansive Soils

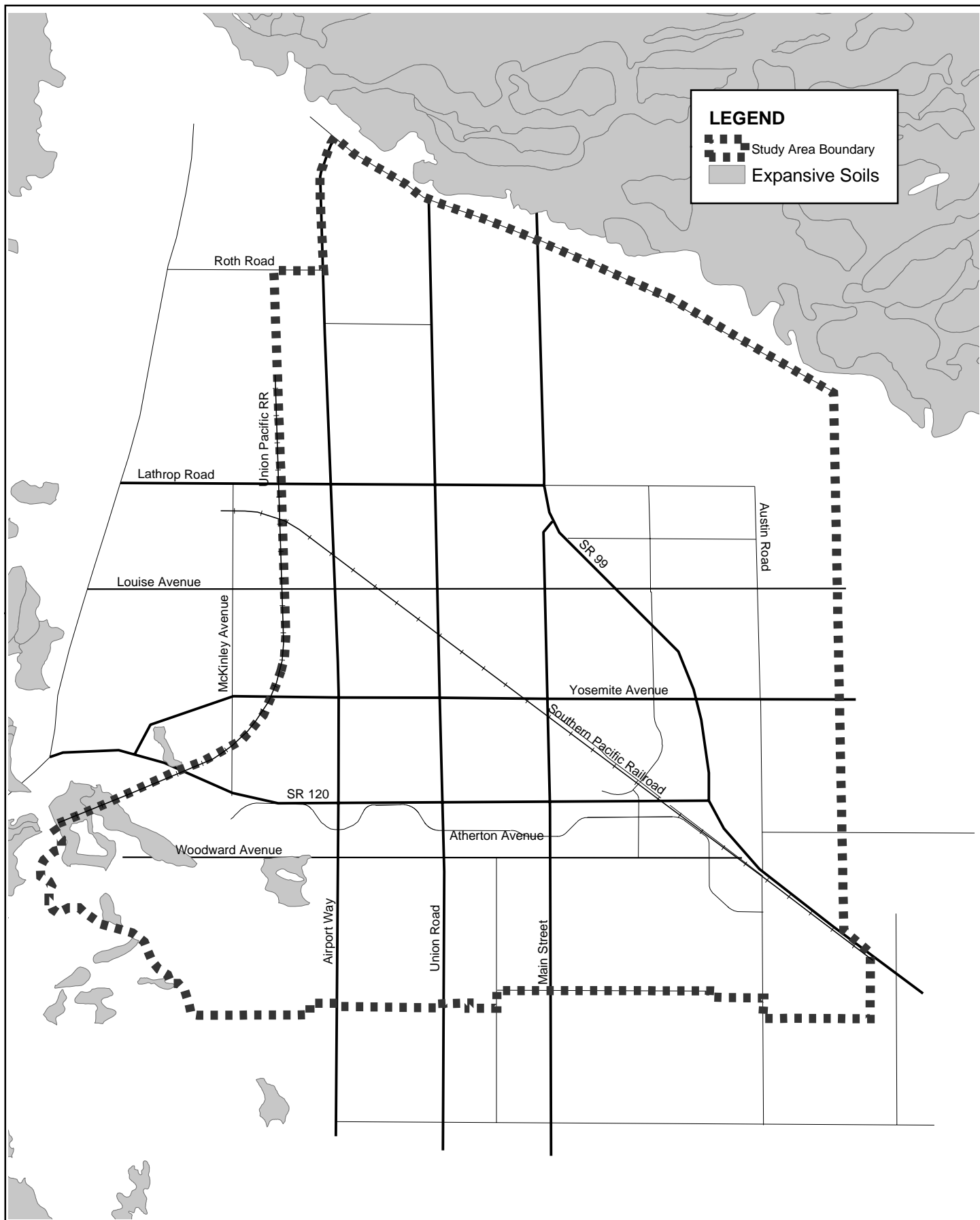
Expansive soils are those that increase in volume when they absorb water and shrink when they dry out, commonly referred to as “shrink-swell” potential. Soil surveys generally rate shrink-swell potential in soils on a low, medium, and high basis. If the shrink-swell potential is rated moderate to high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

As shown in Table 8-1, four (4) of the twenty-two Study Area soils have been identified as expansive soils: one (1) with a high shrink-swell potential, two (2) with a moderate-high shrink-swell potential, and one (1) with a moderate shrink-swell potential. The location of these expansive soils is shown in Figure 8-1.

Table 8-1
Expansive Soils in the Study Area

Soil (Symbol & Series Name)	Shrink-Swell Potential
152 Egbert	Moderate-High
153 Egbert	Moderate-High
169 Guard	Moderate
160 Galt	High

Source: Extracted from Soil Survey of San Joaquin County, California. October 1992. U.S. Department of Agriculture, Soil Conservation Service.



Manteca General Plan

8.1.3 Seismicity

Seismicity can be defined simply as earthquake activity.

A seismic hazard is a risk or danger to our environment due to existence of active or potentially active earthquake faults. The term “earthquake” is used to describe both a sudden slip along a fault and the resulting ground shaking and radiated seismic energy caused by the slip, or by volcanic or magmatic activity, or other sudden stress changes in the earth.

Earthquake Hazards

Earthquake hazards include surface faulting, ground shaking, landslides, liquefaction, tectonic deformation, tsunamis, and seiches (tsunami-like waves from an inland body of water). The risk associated with earthquake hazards is generally described in terms of the probability of building damage, and the number of people that are expected to be hurt or killed if a likely earthquake on a particular fault occurs.

Earthquakes are measured by their physical effects and by the amount of energy being released. The Modified Mercalli Scale is used to measure the physical effect of earthquakes, as described in Table 8-2. This scale ranges from I to XII, with an earthquake intensity of XII resulting in nearly total damage to manmade structures and displacement of large masses of rock. The Richter Scale is used to assign a number to the calculated energy release of an earthquake, measuring the amplitude of seismic waves recorded by a seismograph. The Richter Scale is logarithmic, and an increase of one number in magnitude is the same as an increase of 32 times in energy release. A comparison of these two earthquake scales is shown in Table 8-3.

Table 8-2
Modified Mercalli Scale of 1931

<u>Scale</u>	<u>Effects</u>
I	Earthquake shaking not felt.
II	Shaking felt by those at rest.
III	Felt by most people indoors; some can estimate duration of shaking.
IV	Felt by most people indoors. Having objects swing, windows and doors rattle, wooden walls and frames creak.
V	Felt by everyone indoors; many estimate duration of shaking. Standing autos rock. Crockery clashes, dishes rattle, and glasses clink. Doors close, open, or swing.
VI	Felt by everyone indoors and most people outdoors. Many now estimate not only the duration of the shaking, but also its direction and have no doubt as to its cause. Sleepers awoken. Liquids disturbed, some spilled. Small unstable objects displaced. Weak plaster and weak materials crack.
VII	Many are frightened and run outdoors. People walk unsteadily. Pictures thrown off walls, books off shelves. Dishes or glasses broken. Weak chimneys break at roofline. Plaster, loose bricks, unbraced parapets fall. Concrete irrigation ditches damaged.
VIII	Difficult to stand. Shaking noticed by auto drivers, waves on ponds. Small slides and cave-ins along sand or gravel banks. Stucco and some masonry walls fall. Chimneys, factory stacks, towers, elevated tanks twist or fall.
IX	General fright. People thrown to the ground. Steering of autos affected. Branches broken from trees. General damage to foundations and frame structures. Reservoirs seriously damaged. Underground pipes broken.
X	General panic. Conspicuous cracks in ground. Most masonry and frame structures destroyed along with their foundations. Some well-built wooden structures and bridges are destroyed. Serious damage to dams, dikes, and embankments. Railroads bent slightly.
XI	General panic. Large landslides. Water thrown out of banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flatland. General destruction of buildings. Underground pipelines completely out of service. Railroads bent greatly.
XII	General panic. Damage nearly total, the ultimate catastrophe. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into air.

Source: California Geologic Survey, 2002

Table 8-3
Comparison of Richter Magnitude and Modified Mercalli Intensity

Richter Magnitude	Expected Modified Mercalli Intensity (at epicenter)
2	I-II Usually detected only by instruments
3	III Felt indoors
4	IV-V Felt by most people; slight damage
5	VI-VII Felt by all; many frightened and run outdoors; damage minor to moderate
6	VII-VIII Everybody runs outdoors' damage moderate to major
7	IX-X Major damage
8+	X-XI Total and major damage

Source: California Geologic Survey, 2002 after Charles F. Richter, 1958, Elementary Seismology.

Uniform Building Code (UBC) Seismic Zones

The Uniform Building Code (UBC) includes a Seismic Zone Map to determine applicable construction standards for proposed structures. Seismic zones range from 0 – 4, with Zone 0 being the least active and Zone 4 being the most active. Manteca is located in Seismic Zone 3. (3) All structures built in Manteca must comply with UBC requirements for this zone.

Seismic Hazard Zones

Seismic Hazard Zones are regulatory zones that encompass areas prone to liquefaction (reduction in strength and stiffness of water-saturated soil) and earthquake-induced landslides. California requires the State Geologist to establish regulatory zones (Zones of Required Investigation) and to issue appropriate maps (Seismic Hazard Zone maps). These maps are distributed to all affected cities, counties, and state agencies for their use in planning and monitoring construction. As of this writing, lands in San Joaquin County have not yet been mapped. (4)

Alquist-Priolo Act

The Alquist-Priolo Special Studies Zone Act of 1972 is directed at areas identified by the California State Geologist as having active surface fault ruptures. It is a regulatory prohibition to build across a surface fault rupture of active faults. It addresses earthquake safety in building permits and subdivision procedures by requiring project applicants to submit a registered geologist's report describing the potential for on-site surface rupture.

Manteca is not located within an Alquist-Priolo Fault-Rupture Hazard Zone.(4) There are faults located in the region, but there are no known faults located within or adjacent to the Study Area.

The known earthquakes affecting San Joaquin County are shown below in Table 8-4.

Figure 8-2 illustrates faults located in the vicinity of the Study Area, as mapped by the California Department of Conservation, Division of Mines and Geology.

Figure 8-2
Faults in the Vicinity of the Study Area

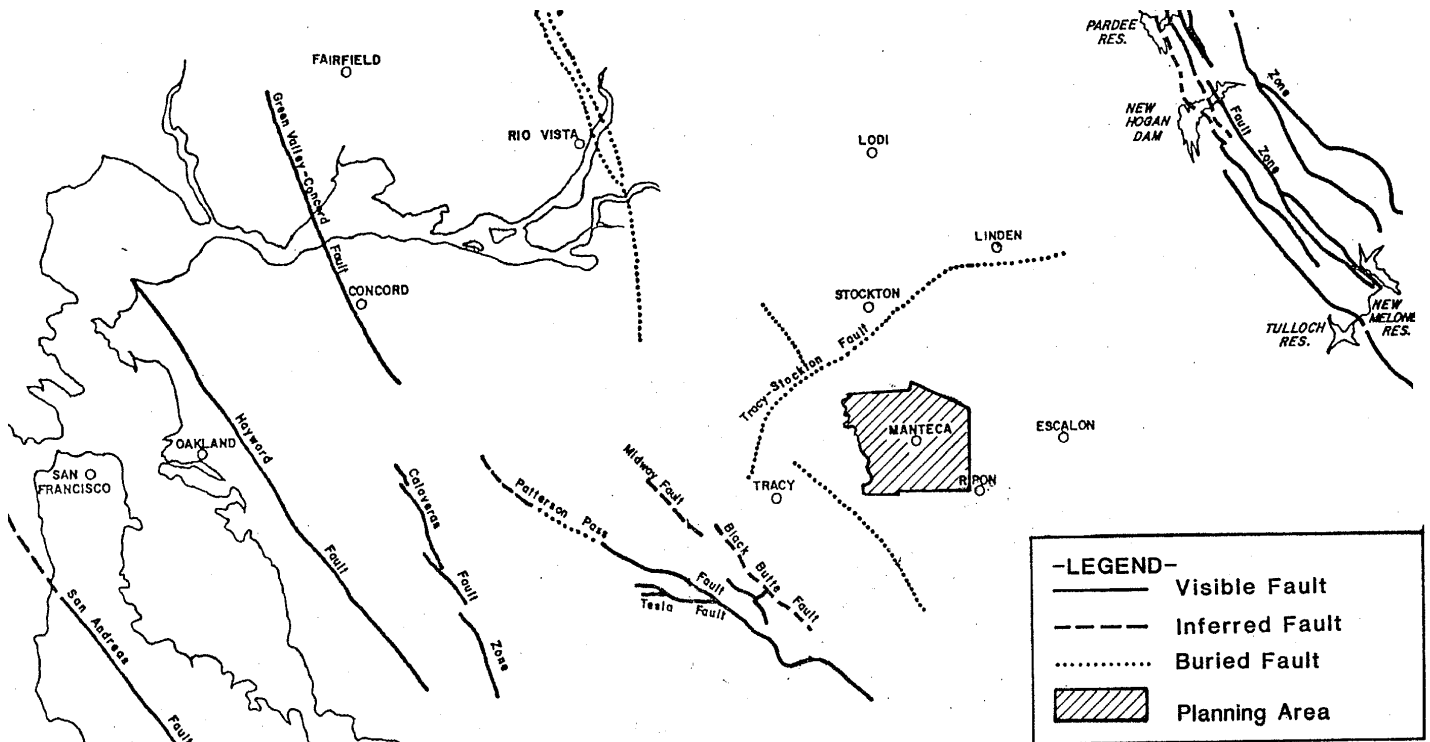


Table 8.1-4
Earthquakes Affecting San Joaquin County

<i>Date</i>	<i>MM Intensity in San Joaquin Co</i>	<i>MM Intensity Near Epicenter</i>	<i>Epicenter</i>	<i>Richter Magnitude</i>
1836	V-VI	IX-X	Hayward	7.0
1838	VI	X	S.F. Peninsula	7.0
1857	VI	X-XI	Mountains between Santa Barbara and Bakersfield	8.8
1868	V-VI	IX-X	Hayward	7.0
1872	VI	X	Owens Valley	8.0
1881	V-VI	VII	Linden	5.0
1892	IV-V	VIII	Vacaville	7.0
1906	VI-VII	XI	San Francisco	8.3
1940	?	?	Southeast of Linden	4.0
1946	?	?	Patterson Pass	4.5
1952	V	VIII	Bakersfield	7.7
1966	IV-V	VII	North of Tahoe	6.5
1980	?	?	Mammoth Lakes	6.5
1980	?	?	Mammoth Lakes	6.7
1989	?	?	Loma Prieta	7.1

Source: California Department of Conservation, California Geological Survey, 2002, as compiled from T. Topozada, 2000.

As shown in Table 8-4 above, seismic activity in other parts of the state can also affect the area. The fault systems detailed below are the most prominent area faults, but do not represent every fault system that could potentially affect the Study Area. *San Andreas Fault Zone.* The San Andreas Fault is one of the longest, most thoroughly studied, and most active faults in the world. Some sections in the Central Coast Ranges south of San Joaquin County are creeping at rates as great as 3.5 centimeters per year. Other segments north and south of the creep areas exhibit essentially no movement. The fault in those areas appears to be temporarily “locked”. It is generally agreed that a “locked” condition allows stresses to accumulate more rapidly, thus shortening the time between major earthquakes.

It is possible to demonstrate an accumulated offset along the San Andreas Fault measured in hundreds of miles, occurring over a period of tens of millions of years. Since there is presently movement along some of its length, and numerous smaller earthquakes are recorded as emanating from the fault zone, it is considered probable that moderate-to-great earthquakes will occur on the San Andreas Fault in the near future.

Hayward Fault. The Hayward Fault is located east of San Francisco Bay and extends southeast to where it probably merges with the Calaveras Fault north of Hollister. A review of the recent history of this fault shows two major earthquakes (1836 and 1868) each with an estimated Richter Scale Magnitude 7.0 (Table 8-4). Numerous small earthquakes continue to occur along this fault, indicating continued activity.

San Joaquin Fault Zone. A new fault system has recently been identified by the U.S. Geologic Survey (USGS), extending from Tracy to Los Banos, paralleling Interstate 5. Geologic studies show that the zone has sustained activity during the Quaternary period. This could be an important fault system for San Joaquin County.

Other nearby fault systems include: Rescue Lineament-Bear Mountains fault zone, Clayton-Marsh Creek-Greenville fault, O'Neil fault system, and Ortigalita fault. The known faults nearest to the Study Area are the Tracy-Stockton Fault crossing southwest near Tracy to the northeast near Linden, and a small buried fault running southeast from the Tracy area (Figure 8-2).

8.2 REGULATORY SETTING

8.2.1 Applicable Federal Regulations

U.S. Uniform Building Code (UBC)

The U.S. Uniform Building Code (UBC) provides site development and construction standards. The UBC is widely used throughout the United States, and is generally adopted on a district-by-district or state-by-state basis. The UBC has been modified for California conditions with more detailed and more stringent regulations.

8.2.2 Applicable State Regulations

California Uniform Building Code (CUBC)

The California Uniform Building Code (CUBC) is based upon the 1997 U.S. Uniform Building Code (UBC). Where no other building codes apply, Chapter 29 regulates excavation, foundations, and retaining walls; Chapter 70 regulates grading activities, including drainage and erosion control.

California Code of Regulations (CCR), Title 24 (Building Standards)

The State of California provides minimum standards for building design through the California Building Standards Code.

California Health and Safety Code 19100 et seq. (Earthquake Protection Law)

The State of California earthquake protection law requires that buildings be designed to resist stresses produced by lateral forces caused by wind and earthquakes.

California Department of Conservation, Division of Land and Resource Protection (DLRP)

The California Division of Land and Resource Protection (DLRP) provides information to guide land use planning decisions, and well as programs that allow agricultural and open space landowners to voluntarily protect their land.

California Department of Conservation, Division of Mines and Geology

The California Division of Mines and Geology has historically focused on gathering geologic information and mapping information. However, programs have expanded often due to the passage of legislation. DMG's authority now includes obtaining statewide records of the response of rock, soil, and structures to ground motion caused by earthquakes; mandating the delineation of zones along traces of hazardous faults; ensuring that significant mineral deposits are identified and protected; providing geologic hazard review and investigation; identifying and mapping seismic hazard zones; developing public policy; and providing emergency response services.

8.2.3 City of Manteca

The Health and Safety Element (Section VII) of the existing 1988 General Plan includes the following goals and policies to protect Manteca residents and structures from geologic and seismic hazards:

Goal A: To prevent loss of lives, injury, and property damage due to geological hazards.

Policy A-1 The City shall require preparation of geological reports and/or geological engineering reports for proposed new development located in areas of suspected significant geological hazards.

Goal B: To prevent loss of lives, injury, and property damage due to the collapse of building and critical facilities and to prevent disruption of essential services in the event of an earthquake.

Policy B-1 The City shall maintain an inventory of pre-1940 unreinforced masonry buildings within the City. No change in use to a higher occupancy or more intensive use shall be approved in such structures until an engineering evaluation of the structure has been conducted and any structural deficiencies corrected. The Redevelopment Agency shall be encouraged to assist property owners in reinforcing buildings.

Policy B-2. The City should ensure that all public facilities, such as buildings, water tanks, and reservoirs, are structurally sound and able to withstand seismic shaking and the effect of seismically induced ground failure.

8.3 IMPACT EVALUATION CRITERIA

In accordance with CEQA Guidelines, Appendix G, the proposed project would have a significant adverse impact the project would:

- 1) Expose people or structures to 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.
 - Strong seismic ground shaking.
 - Seismic-related ground failure, including liquefaction.
 - Inundation by seiche, tsunami, or mudflow.
 - Landslides.
- 2) Result in substantial soil erosion or the loss of topsoil.
- 3) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.
- 4) Be located on expansive soil creating substantial risks to life or property.
- 5) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waster water.

8.4 IMPACTS AND MITIGATION

POTENTIAL IMPACT GSS-1: **Implementation of the General Plan 2023 may expose people and structures to rupture of a known earthquake, as delineated on the Alquist-Priolo Earthquake Fault Zoning Map.**

Level of Significance: **Less Than Significant Impact**

Manteca is not located within an Alquist-Priolo Fault-Rupture Hazard Zone. There are no known active surface fault ruptures located within or adjacent to the Study Area.

POTENTIAL IMPACT GSS-2: **Implementation of the General Plan 2023 may expose people and structures to ground shaking, ground failure (including liquefaction) or landslides.**

Level of Significance: **Potentially Significant**

Lands within San Joaquin County have not yet been mapped in the California Department of Mines and Geology Seismic Hazard Zone Mapping System, which maps areas of possible liquefaction and landslides. However, given the nearly level terrain of the Study Area, the possibility of landslides is considered a less than significant impact. The Soil Survey for the area found that subsidence is not a characteristic of the soils within the Study Area. As shown in Table 8-4 above, significant earthquakes from regional fault systems have affected San Joaquin County in the past; therefore, the possibility of some level of regional ground shaking in the future is likely. Given that there is a relatively high water table, liquefaction could be a significant impact within the Study Area.

Mitigation Measures:

GSS-2.1: The General Plan 2023 Safety Element (Section 7) provides the following goals, policies (P), and implementation measures (I) to lessen the possible exposure of people and structures to ground shaking or ground failure, including liquefaction:

Goal S-1: Prevent loss of lives, injury, and property damage due to seismic activity and geological hazards.

Goal S-2: Prevent loss of lives, injury, and property damage due to the collapse of buildings and critical facilities and to prevent disruption of essential services in the event of an earthquake.

S-P-1 The City shall require preparation of geological reports and/or geological engineering reports for proposed new development

- located in areas of suspected 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 ~~avoid potential~~ 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-4 The City shall maintain an inventory of pre-1940 unreinforced masonry buildings within the city. No change in use to a higher occupancy or more intensive use shall be approved in such structures until an engineering evaluation of the structure has been conducted and any structural deficiencies corrected. The Redevelopment Agency shall be encouraged to assist property owners in reinforcing buildings.
- S-P-5 The City shall ~~should~~ 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.
- S-P-6 The City shall comply with the California State seismic and building standards in the design and siting of critical facilities, including police and fire stations, school facilities, hospitals, hazardous materials manufacturing and storage facilities, and large public assembly halls.
- SG-I-1 All new development shall comply ~~Comply~~ with the current Uniform Building Code (UBC) requirements for Seismic Zone 3, which stipulates building structural material and reinforcement.
- SG-I-2 All new development shall comply ~~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 caused earthquakes and wind.

SG-I-3 The City shall inventory potentially hazardous buildings within the City and adopt a mitigation program, including requirements for strengthening buildings, changing the use of the buildings to an acceptable occupancy level, or demolishing the buildings.

Residual Level of Significance: Less Than Significant With Mitigation

The level of significance will be mitigated to less than significant if the above goals, policies, and implementation measures are implemented.

POTENTIAL IMPACT GSS-3: Implementation of the General Plan 2023 may result in substantial soil erosion or loss of topsoil.

Given the partial-to-moderate drainage characteristics of the majority of the soils and the nearly level topography of the Study Area, water erosion hazard is considered low.

The wind erosion potential within the Study Area ranges from moderate-to-high during the Spring, Summer, and Fall. These sea breezes diminish during the Winter.

Level of Significance: Potentially Significant

Mitigation Measures:

GSS-3.1: The Resource Conservation Element (Section 8) of the City of Manteca General Plan 2023 provides the following goal, policy (P), and implementation measures (I) to mitigate the potential of substantial soil erosion or loss of topsoil.

Goal RC-6 Preserve and maintain Manteca’s soils to avoid pollution of surface waters, decreased air quality, and loss of soil.

RC-P-9 The City shall adopt and enforce land management standards that minimize ~~Minimize~~ soil erosion and loss of topsoil from land development activities, wind, and water flow.

RC-I-16 All new development shall comply ~~Comply~~ with the Uniform Building Code (UBC) requirements for specific site development and construction standards for specific soils types.

RC-I-17 All new development shall comply ~~Comply~~ with the Uniform Building Code (UBC), Chapter 70, regulating grading activities including drainage and erosion control.

RC-I-18 Require site-specific land management and development practices ~~survey and research~~ for proposed development

projects, including appropriate mitigation measures for avoiding or reducing erosion, if needed. ~~This requirement may be waived if the City determines that the proposed project area is already sufficiently surveyed.~~

Residual Level of Significance: Less Than Significant With Mitigation

The level of significance will be mitigated to less than significant if the above goal, policies, and implementation measures are implemented.

POTENTIAL IMPACT GSS-4: Implementation of the General Plan 2023 may expose people and structures to the hazards of expansive soils.

Level of Significance: Potentially Significant

Five (5) of the nineteen Study Area soils have been identified as expansive soils: two (2) with a high shrink-swell potential, and three (3) with a moderate shrink-swell potential.

Mitigation Measures:

GSS-4.1: The General Plan 2023 Safety Element (Section 7) provides the following policies (P) to lessen the possible exposure of people and structures to the shrink-swell hazards of expansive soils:

S-P-1 The City shall require preparation of geological reports and/or geological engineering reports for proposed new development located in areas of suspected 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.

The General Plan 2023 Resource Conservation Element (Section 8) provides the following policies implementation measure (I) to lessen the possible exposure of people and structures to the shrink-swell hazards of expansive soils:

RC-I-16 Comply with the Uniform Building Code (UBC) requirements for specific site development and construction standards for specific soil types.

Residual Level of Significance: Less Than Significant With Mitigation

The level of significance will be mitigated to less than significant if the above policies and implementation measure are implemented. Compliance with UBC construction requirements will implement state-of-the-art mitigation relating to site-specific soil types.

POTENTIAL IMPACT GSS-5: Septic tanks or alternative waste water systems could be placed in soils incapable of supporting their use.

Level of Significance: No Impact

All proposed development within the Study Area will be served by the City's municipal sewer system. No septic tanks or alternative waste water systems will be used.

References

- (1) Alt, David and Donald W. Hyndman. Roadside Geology of Northern and Central California. Mountain Press Publishing Company. Missoula, Montana. August 2001, Second Printing. Extracted from Pg. 243-254.
- (2) U.S. Department of Agriculture, Soil Conservation Service. Soil Survey of San Joaquin County, California. October 1992. Extracted from Pg. 185-238.
- (3) Telephone Conversation with Dennis Rock, San Joaquin County Community Development Department, Building Inspection and Permitting. June 2003.
- (4) Telephone Conversation with Dale Stickney, Information Geologist, California Department of Conservation, Division of Mines and Geology. February 21, 2002; Update June 2003.

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9. HAZARDOUS MATERIALS

Hazardous materials are substances that may pose a potential hazard to human health or the environment when handled improperly.

This Section addresses hazardous materials and the City of Manteca. The discussion includes hazardous wastes from residential, small business, industrial, and government facilities. Hazardous waste sites that appear on San Joaquin County and California state hazardous materials database lists for Manteca are addressed. The transportation of hazardous materials, particularly over the Union Pacific Railroad lines through the City, is also discussed.

9.1 EXISTING CONDITIONS

9.1.1 Household Hazardous Waste

Household hazardous waste includes common items such as paints, cleaners, motor oil and pesticides. Other household items contain hazardous materials that are considered less hazardous to handle, such as batteries, lamps, televisions, and computer monitors. Such items are classified by the Environmental Protection Agency (EPA) and the California Department of Toxic Substances Control (DTSC) as Universal Waste.

City of Manteca Household Hazardous Waste Disposal Program

The City of Manteca's Solid Waste Division has a free household hazardous waste disposal program for its residents. The Division's "Facts & Information" publication gives details on (1) the year-around drop-off locations for used motor oil, latex paints, antifreeze, and auto batteries; (2) twice-per-year drop-off events for pesticides, oil-based paints, solvents, varnishes, cleaners, and other types of hazardous wastes; and (3) E-Waste (computers, computer monitors, printers, telephones, typewriters, cell phones, televisions, and "just about anything that you can plug into an electrical socket") drop-off locations, by appointment.

9.1.2 Non-Household Hazardous Waste

Hazardous waste can also be generated by small businesses, industry, and government facilities. Small businesses and government facilities may be classified as Small Quantity Generators (SQG's) or Conditionally Exempt Small Quantity Generators (CESQG's). Industries are typically classified as SQG's or Large Quantity Generators (LQG's). These classifications are discussed below in Subsection 9.2, Regulatory Setting.

9.1.3 Hazardous Material Sites in City of Manteca

CalSites Database

Summary reports that list potential toxic sites within the City of Manteca are shown in Table 9-1. These listings are from the Site Mitigation and Brownfields Reuse Program Database, also known as the CalSites Database, maintained by the (DTSC) (1). This Database contains information on properties in the state where hazardous substances have or may have been released. No sites within the City of Manteca have been classified as a confirmed hazardous materials site, also known as a CalSite or State Superfund site.

The DTSC also maintains the Hazardous Waste and Substances Site List Database, also known as the Cortese List Database, which contains information on hazardous material sites provided by various state and local agencies. Agencies are required by CEQA to use the Cortese List to identify locations of hazardous materials release sites when considering development proposals. The City of Manteca does not contain sites that are identified on the Cortese List.

As shown in Table 9-1, “no further action” is required for the four (4) school sites. It has been determined that these properties do not pose a threat from hazardous materials. The Department of Toxic Substances Control recommended their Website for current status of the remaining seven (7) properties. The following information was obtained from that search (2):

Schmiedt Soil Service, Inc.:

Site inspections by the California Regional Water Quality Control Board (RWQCB) in 1987 and 1988, and by the San Joaquin County Department of Public Health Services in 1990, found no violations. A site inspection was conducted on 9/23/93 by the EPA, which found no groundwater contamination in the on-site well. The EPA recommended no further action, and referred the property to San Joaquin County on 3/7/96.

Spreckels Sugar Company:

Referred to the RWQCB on 6/10/91. RWQCB currently monitors groundwater at the site. Water quality is regulated with monitoring wells. On 1/21/94, water was reported as contaminated with salts and bicarbonates. Wastewater ponds on-site consisted of beet-hop wastes, mud, and limestone wastewater. There was also a problem with odor. RWQCB reported that the concerns are being addressed.

United Agricultural Products:

On 7/13/82, a questionnaire was completed by United Agricultural Products. Based on 8/17/82 and 8/24/82 follow-up telephone calls, no further action was recommended.

Table 9-1
CalSites Database Summary Report, City of Manteca

Site Name	Address	Status
Schmiedt Soil Service, Inc.	20696 South Manteca Road	REFOA
Spreckels Sugar Co.	Yosemite Avenue	REFRW
United Agricultural Products	301 Wetmore	REFOA
French Cleaners	416 W. Yosemite Avenue	REFOA
OK Cleaners #1	162 N. Maple Avenue	REFOA
Mainz Cleaners	358 N. Main Street	REFOA
Bobson Cleaners	600 N. Main Street	REFOA
South Manteca Elementary School	Tannehill Drive	NFA
North Main Street Community School	1271, 1275, 1281 N. Main Street	NFA
Sand Lane Elementary School	6647 E. Woodward Avenue	NFA
South Airport Way School	21164 South Airport Way	NFA

LEGEND

REFOA: Referred to Other Agencies. Identifies properties referred to another agency, such as the Integrated Waste Management Board or other State or local agency. These properties were determined not to require direct Department of Toxic Substances Control Site Mitigation Program action or oversight. In many referral cases, it should be noted that DTSC has not confirmed an actual release of a hazardous substance.

REFRW: Referred to the Regional Water Quality Control Board. Identifies properties that were determined not to require direct Department of Toxic Substances Control Site Mitigation Program action or oversight and have been referred to another state or local regulatory agency. In many referral cases, it should be noted that DTSC has not confirmed an actual release of a hazardous substance.

NFA: No Further Action. Identifies properties that had a possibility of a release that the Department of Toxic Substances Control determined after additional investigation (a Preliminary Endangered Assessment (PEA)) that the property does not pose a problem to the environment or the public health.

Source: Department of Toxic Substances Control, May 23, 2002. Update April 23, 2003 (Telephone Conversation with Shannon Similai, Toxics Help Desk, Department of Toxic Substances Control)

French Cleaners:

The facility was identified from DMI List on 6/24/82. A facility drive-by was completed on 9/28/82. Based on finding no problems during drive-by, a recommendation for no further action was made on 10/14/82.

OK Cleaners #1:

The facility was identified from DMI List on 6/24/82. A facility drive-by was completed on 9/28/82. Based on finding no problems during drive-by, a recommendation for no further action was made on 10/14/82. (Same information as for French Cleaners)

Mainz Cleaners:

The facility was identified from DMI List on 4/2/82. A facility drive-by was completed on 8/10/82. Based on finding no problems during drive-by, a recommendation for no further action was made on 9/5/82.

Bobson Cleaners:

The facility was identified from DMI List on 6/24/82. A facility drive-by was completed on 9/28/82. Based on finding no problems during drive-by, a recommendation for no further action was made on 10/14/82. (Same information as for French Cleaners)

Underground Tank Site Mitigation Database

San Joaquin County Public Health Services monitors the possible groundwater and soil contamination from underground tanks. The “Closed Site” entries in Table 9-2 indicate that it has been determined that the site will not contaminate ground water nor impact drinking water (3). As noted, the remaining sites are currently being monitored for either ground water or soil contamination.

**Table 9-2
Underground Tank Site Mitigation Database List, City of Manteca**

Site Name	Address	Status
Luther Russell	23675 W. Airport Way	Closed Site
Tuff Boy Trailers	5151 Almondwood Drive	GW Site
Frank’s Exxon #4	14800 S. Highway 99	Closed Site
Edward and M Pitts	203 S. Lincoln Avenue	Closed Site
Quik Stop Market #21	1196 Louise Avenue	GW Site
Manteca USD-District Office	2901 E. Louise Avenue	Soil Site

Site Name	Address	Status
Shell Service Station	1071 N. Main Street	GW Site
Jiffy Lube	1130 N. Main Street	Closed Site
7 Eleven, #19976	1399 N. Main Street	GW Site
Diamond Lumber	151 S. Main Street	GW Site
Fiore Development	2001 N. Main Street	Closed Site
Modesto Dry Ice	260 S. Main Street	Closed Site
Super Stop Market	290 N. Main Street, #C	GW Site
Boyett Petroleum	419 S. Main Street	Closed Site
Beacon	470 N. Main Street	Closed Site
Royal Oaks Savings	510 N. Main Street	Closed Site
Manteca Equipment Rental	616 S. Main Street	Closed Site
Food and Liquor	890 N. Main Street	Closed Site
Carl Karcher Distribution Center	800 Mellon Avenue	Soil Site
Manteca USD Shop	660 Mikesell Street	Soil Site
Manteca Bean Co.	229 Moffat Boulevard	Closed Site
San Joaquin County Ag. Comm.	392 S. Moffat Boulevard	GW Site
Bob's Muffler and Radiator	466 Moffat Boulevard	GW Site
Eckert Cold Storage Company	757 Moffat Boulevard	GW Site
Lee Jennings Enterprises	815 Moffat Boulevard	Closed Site
Pony Express Courier Corp.	959 Moffat Boulevard	Closed Site
Olympian CFN	983 Moffat Boulevard	GW Site
City of Manteca Public Works	220 Oak Street	Closed Site
Cal West Concrete Cuttings	1153 Vanderbilt Circle	Closed Site
City of Manteca	210 E. Wetmore Avenue	GW Site
Yosemite Avenue Beacon	1001 E. Yosemite Avenue	GW Site
Fill-em Fast	1012 W. Yosemite Avenue	GW Site
7 Eleven #17647	1048 W. Yosemite Avenue	GW Site
Payless Shoe Store	1160 W. Yosemite Avenue	GW Site
Chevron #SS1848	1257 W. Yosemite Avenue	GW Site
Frank's Exxon #2	1399 E. Yosemite Avenue	Closed Site
Jackpot Food Mart	1434 W. Yosemite Avenue	Closed Site
Tosco Corporation #30877	1700 E. Yosemite Avenue	Closed Site
Arco Station #6020	1711 E. Yosemite Avenue	GW Site
Arco Station #6020	1711 E. Yosemite Avenue	Closed Site

Site Name	Address	Status
Ted Peters Trucking Company	1985 W. Yosemite Avenue	GW Site
Frank's Exxon #3	2072 W. Yosemite Avenue	GW Site
ABF Freight Systems, Inc	2427 W. Yosemite Avenue	Closed Site
Rainwater Car Wash	420 W. Yosemite Avenue	GW Site
Pontes Quicki-Kleen Car Wash	707 E. Yosemite Avenue	Closed Site
Pontes Quicki-Kleen Car Wash	707 E. Yosemite Avenue	Soil Site
7 Eleven #21756	853 E. Yosemite Avenue	GW Site
Texaco	941 E. Yosemite Avenue	Closed Site

LEGEND

Closed Site: Site is no longer active for remediation under the Local Oversight Program.

GW Site: Site remains active for remediation of groundwater under the Local Oversight Program.

Soil Site: Site remains active for remediation of soil under the Local Oversight Program.

Source: *San Joaquin County Public Health Services, Environmental Health Division, Report #7541, May 2002 (Update unavailable as of May 21, 2003)*

9.1.4 Hazardous Materials Transportation**Union Pacific Railroad**

The Union Pacific Railroad tracks are located at the west side of the Study Area. Cargo is transferred between trucks and trains at a transfer station north of Lathrop Road.

Potential issues related to the railroad running through the City include risks to human health and safety associated with a hazardous materials-related emergency.

The Union Pacific Railroad has primary responsibility for hazardous materials spills on its premises. Union Pacific's emergency response plan contains operations guidelines, training requirements, and response procedures to be implemented in the event of a derailment, leak, or off-railroad incident involving hazardous materials.

Roadways

Hazardous materials are routinely transported over state and federal highways, as well as local roads. Trucks travel to and from Interstate 5 (outside the Study Area) to the railroad transfer station north of Lathrop Road.

Hazardous materials spills on state and federal highways are the responsibility of the California Department of Transportation (Caltrans) and the California Highway Patrol (CHP). These agencies provide on-scene management of the spill site and coordinate with the California Environmental Health Department, California Office of Emergency Services, and the Manteca Fire Department.

9.1.5 Solid Waste Management

The Integrated Waste Management Board (CIWMB) coordinates the database records of waste management facilities in Manteca with San Joaquin County Public Health Services, Environmental Health Division. The IWMB lists eight (8) waste management facilities in Manteca. (4) A copy of this IWMB list is included as Appendix F in the Technical Appendix (Volume 2). Following is a summary of the current status of those listed facilities:

1. Manteca County Dump (I.D. SWIS #39-CR-0025)

Solid waste disposal site. Pre-regulations site closed 12/31/63.

2. Manteca City Dump (I.D. SWIS #39-CR-0024)

Solid waste disposal site. Pre-regulations site closed 12/31/63.

3. Spic and Span Private Garbage Dump (I.D. SWIS #39-CR-0032)

Solid waste disposal site. Pre-regulations site closed (no date given).

4. Forward Resource Recovery Facility (I.D. SWIS #39-AA-0020)

Unit 01 Solid waste transfer/processing facility. Permitted site now inactive.

Unit 02 Solid waste materials recovery facility (MRF). Permitted site now inactive.

Unit 03 Solid waste composting facility (Green Waste). Permitted site now active.

Unit 04 Solid waste composting facility (Mixed). Permitted site planned.

Unit 05 Solid waste operation (Non-Hazardous Ash Disposal/Monofill). Permitted site now inactive.

5. Austin Road/Forward Landfill (I.D. SWIS #39-AA-0001)

Solid waste landfill. Permitted site now active.

6. Lovelace Transfer Station (I.D. SWIS #39-AA-0008)

Solid waste large volume transfer/processing facility. Permitted site now active.

7. Forward, Inc. (I.D. SWIS #39-AA-0015)

Unit 01 Solid waste landfill. Permitted site now active.

Unit 02 Solid waste treatment (processing) facility. Permitted site now active.

Unit 03 Solid waste ACW disposal operation. Permitted site now active.

8. Delicato Vineyards (I.D. SWIS \$39-AA-0037)

Solid waste composting facility (Ag). Notification site now active.

San Joaquin County Public Health Services (Environmental Health Division), the State Regional Water Quality Control Board (RWQCB), and the California Department of Toxic Substances Control (DTSC) are now in the process of developing protocols for urban development in the vicinity of these waste management facilities. Currently, the Health and Safety Code requires a DTSC Preliminary Environmental Assessment (PEA) for development within 1,000 feet of a solid waste facility. (5)

9.1.6 City of Manteca Fire Department (MFD)

The City of Manteca operates a full-service Fire Department (MFD). MFD provides support for a variety of public agencies at the local, state, and federal levels. Support and services include hazardous materials response.

9.2 REGULATORY SETTING

The regulation of hazardous materials occurs at the federal, state, and local levels. These regulatory agencies are described below.

9.2.1 Applicable Federal Regulation

U.S. Environmental Protection Agency (EPA)

EPA's mission is to protect human health and to safeguard the natural environment, related to air, water, and land. EPA works closely with other federal agencies, state and local governments, and Indian tribes to develop and enforce regulations under existing environmental laws. EPA is responsible for researching and setting national standards for a variety of environmental programs and delegates to states and tribes responsibility for issuing permits, and monitoring and enforcing compliance. Where national standards are not met, EPA can issue sanctions and take other steps to assist the states and tribes in reaching the desired levels of environmental quality.

The Agency also works with industries and all levels of government in a wide variety of voluntary pollution prevention programs and energy conservation efforts.

EPA Region 9 office has jurisdiction over Manteca and the southwestern United States (Arizona, California, Nevada, and Hawaii).

EPA Programs related to Hazardous Materials include:

- Community Right-to-Know Information
- Pesticide Management
- Toxic Release Inventory
- Brownfields (CalSites Database)
- Cleanup Technologies
- Compliance Assistance
- Emergency Response
- Hazardous Waste
- Oil Spills

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) as updated in 1984, deals with both hazardous and nonhazardous solid waste. The EPA (or the states) must issue a permit to facilities before they can treat, store, and dispose of hazardous wastes.

According to the RCRA, generators are separated into three groups:

1. Large Quantity Generators (LQG's): Those that generate more than 2,200 pounds of hazardous waste per calendar month. Examples include pharmaceutical companies and chemical manufacturers.
2. Small Quantity Generators (SQG's): Those that generate between 220 pounds and 2,200 pounds of hazardous waste per calendar month. Examples include laboratories, printers, and dry cleaners.
3. Conditionally Exempt Small Quantity Generators (CESQG's): Those that generate less than 220 pounds of hazardous waste per calendar month. Examples include 1-hour photo labs and dental offices.

U.S. Department of Transportation (DOT)

The Hazardous Materials Transportation Act of 1974, as amended, is the basic statute regulating hazardous materials transportation in the U.S.. This law gives USDOT and other agencies the authority to issue and enforce rules and regulations governing the safe transportation of hazardous materials.

State agencies are authorized to designate highways for the transport of hazardous materials. Where highways have not been designated, hazardous materials must be transported on routes that do not go through or near heavily populated areas.

Office of Emergency Services (OES)

OES administers the state's Emergency Plan for coordinating emergency services provided by federal, state, local government agencies, and private agencies, including California Environmental Protection Agency, California Highway Patrol, California Department of Fish and Game, and various county agencies and fire protection districts. Response to hazardous materials incidents is one part of this Plan.

9.2.2 Applicable State Regulation

CEQA and the Cortese List

The Cortese List (Hazardous Waste and Substances Site List) is a planning document used by the state, local agencies, and developers to comply with CEQA requirements to consider Government Code Section 5962.5 in evaluating proposed development projects. Section 65962.5 states,

“The list should contain all hazardous waste facilities subject to corrective action , all hazardous waste property or border zone property designations, all information received on hazardous waste disposals on public land, all hazardous substance release sites listed pursuant to Government Code Section 25356, and all sites that were included in the former Abandonment Site Assessment Program (2).

California Environmental Protection Agency (Cal EPA)

Government Code Section 65962.5 requires the California Environmental Protection Agency to develop a Cortese List at least annually. The Department of Toxic Substances Control is responsible for a portion of the information on the list, and other local and state government agencies are required to provide additional information

Cal EPA operates the Air Resources Board, the Department of Pesticide Regulation, Department of Toxic Substances Control, Integrated Waste Management Board, Office of Environmental

Health Hazard Assessment, and the State Water Resources Control Board. The function of each of these six (6) offices is discussed below:

Air Resources Board (ARB): To promote and protect public health, welfare and ecological resources through the effective and efficient reduction of air pollutants in recognition and consideration of the effects on the economy of the state.

Department of Pesticide Regulation (DPR): Regulates all aspects of pesticide sales and use to protect the public health and the environment for the purpose of evaluating and mitigating impacts of pesticide use, maintaining the safety of the pesticide workplace, ensuring product effectiveness, and encouraging the development and use of reduced risk pest control practices.

Department of Toxic Substances Control (DTSC): The Department's mission is to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality, by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention. DTSC protects residents from exposures to hazardous wastes. DTSC operates programs to:

- -Deal with the aftermath of improper hazardous waste management by overseeing site cleanups.
- -Prevent releases of hazardous waste by ensuring that those who generate, handle, transport, store and dispose of wastes do so properly.
- -Take enforcement actions against those who fail to manage hazardous wastes appropriately.
- -Explore and promote means of preventing pollution, and encourage reuse and recycling.
- -Evaluate soil, water and air samples taken at sites, and develop new analytical methods.

Integrated Waste Management Board (IWMB): To protect the public health and safety and the environment through waste prevention, waste diversion, and safe waste processing and disposal. The IWMB is responsible for managing California's solid waste stream. The Board is helping California divert its waste from landfills by:

- -Developing waste reduction programs.
- -Providing public education and outreach.
- -Assisting local governments and businesses.
- -Fostering market development for recyclable materials.
- -Encouraging used oil recycling.
- -Regulating waste management facilities.

- -Cleaning up abandoned and illegal dump sites.

Office of Environmental Health Hazard Assessment (OEHHA): OEHHA is responsible for developing and providing risk managers in state and local government agencies with toxicological and medical information relevant to decisions involving public health. OEHHA also works with Federal agencies, the scientific community, industry and the general public on issues of environmental as well as public health. Specific examples of OEHHA responsibilities that directly relate to Manteca include:

- -Developing health-protective exposure standards for air, water, and land to recommend to regulatory agencies, including ambient air quality standards for the Air Resources Board and drinking water chemical contaminant standards for the Department of Health Services.
- -Assessing health risks to the public from air pollution, pesticide and other chemical contamination of food, seafood, drinking water, and consumer products.
- -Providing guidance to local health departments, environmental departments, and other agencies with specific public health problems, including appropriate actions to take in emergencies that may involve chemicals.

State Water Resources Control Board (SWRCB): To preserve and enhance the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations. The SWRCB maintains the Leaking Underground Storage Tank Information System (LUTIS) Database, which contains information on registered leaking underground storage tank (LUST's) in the state.

California Occupational Safety and Health Agency (CalOSHA)

CalOSHA sets and enforces standards that insure safe and healthy working conditions for California's workers. The Division of Occupational Safety & Health is charged with the jurisdiction and supervision over workplaces in California that are not under Federal jurisdiction. CalOSHA regulates issues involving unsafe workplace conditions, worker exposure to chemicals, illness due to workplace exposure, or improper training.

State Regulatory Programs Division (SRPD)

The State Regulatory Programs Division (SRPD) oversees the technical implementation of the state's Unified Program; a consolidation of six environmental programs at the local level, and conducts reviews of Unified Program agencies to ensure their programs are consistent statewide, conform to standards, and deliver quality environmental protection at the local level. SRPD also carries out the state's hazardous waste recycling and resource recovery program designed to facilitate recycling and reuse of hazardous waste. SRPD conducts a corrective action oversight program that assures any releases of hazardous constituents at generator facilities that conduct

onsite treatment of hazardous waste are safely and effectively remediated, and oversees the hazardous waste generator and onsite waste treatment surveillance and enforcement program carried out by local Unified Programs.

California Department of Transportation (Caltrans) and California Highway Patrol

The California Vehicle Code Section 31303 requires that hazardous materials be transported via routes with the least overall travel time, and prohibits the transportation of hazardous materials through residential neighborhoods.

In California, the California Highway Patrol (CHP) is authorized to designate and enforce route restrictions for the transportation of hazardous materials.

To operate in California, all hazardous waste transporters must be registered with the Department of Toxic Substances Control (DTSC). Unless specifically exempted, hazardous waste transporters must comply with the California Highway Patrol Regulations; the California State Fire Marshal Regulations; and the United States Department of Transportation Regulations. In addition, hazardous waste transporters must comply with Division 20, Chapter 6.5, Article 6 and 13 of the California Health and Safety Code and the Title 22, Division 4.5, Chapter 13, of the California Code of Regulations which are administered by DTSC.

Central Valley Regional Water Quality Control Board (RWQCB)

There are nine Regional Water Quality Control Boards (RWQCBs) throughout the State. The Central Valley RWQCB has jurisdiction over the City of Manteca, with offices in Stockton.

Individual RWQCB's function as the lead agencies responsible for identifying, monitoring, and cleaning-up leaking underground storage tanks. Storage of hazardous materials in underground storage tanks is regulated by the State Water Resources Control Board (SWRCB), which oversees the nine RWQCB's.

9.2.3 Applicable Local Government Regulation

Certified Unified Program Agencies (CUPA)

Senate Bill 1082 (1993) required the establishment of a unified hazardous waste and hazardous materials management program. The result was Cal EPA's United Program, which consolidates the actions of DTSC, the SWRCB, the RWQCB's, OES, and the State Fire Marshall. DTSC oversees the implementation of the hazardous waste generator and onsite treatment program, one of six environmental programs at the local level, through Certified Unified Program Agencies (CUPAs). CUPAs have authority to enforce regulations, conduct inspections, administer

penalties, and hold hearings. San Joaquin County implements the CUPA that has enforcement authority over the City of Manteca. Offices are located in Stockton.

San Joaquin County Air Pollution Control District (APCD)

San Joaquin County Air Pollution Control District has jurisdiction over the City of Manteca and deals with pollutants that get into the air from stationary sources (including fumes, dust and smoke, some asbestos). APCD responds to complaints about smells and answers questions about air quality management permits. The APCD and air quality are addressed in detail in Section 5, Air Quality, of this EIR.

San Joaquin County

Hazardous waste programs are managed and implemented locally through the County of San Joaquin Certified Unified Program Agency (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 (3).

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.).

9.2.4 City of Manteca

Household Hazardous Waste (HHW)

Household wastes 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.

9.2.5 City of Manteca 1988 General Plan

The Health and Safety Element (Section VII) of the existing 1988 General Plan includes the following Goal, and Policies, and Implementation Measure which intend to protect Manteca residents from hazardous materials:

Goal F To protect Manteca residents from the effects of hazardous materials.

Policy F-1 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.

Policy F-2 Within its authority, the City shall regulate the production, use, storage, and transport of hazardous materials to protect the health of Manteca residents.

Implementation

Measure 3 The City shall adopt an ordinance requiring businesses, manufacturing, storing, using, or transporting significant quantities of hazardous materials to identify annually such materials and their quantities.

9.3 IMPACT EVALUATION CRITERIA

In accordance with CEQA Guidelines, Appendix G, the proposed project would have a significant adverse impact on the environment if the project would:

1. create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials;
2. create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
3. emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school;
4. be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
5. impair implementation of or physically interfere with an adopted emergency plan or emergency evaluation plan.

9.4 IMPACTS AND MITIGATION

POTENTIAL IMPACT HM-1: **The existing and future residents of the City of Manteca could be exposed to increased risk resulting from the routine use, transport, or disposal of hazardous materials.**

Light industrial development is expected to involve storage and use of hazardous materials. Commercial development may also use hazardous materials. Hazardous wastes are expected to be generated by some small businesses as well. The use and storage of hazardous materials will involve the transport of such materials.

Level of Significance: **Potentially Significant**

Mitigation Measures:

HM-1.1 The General Plan 2023 Safety Element ~~of the City of Manteca General Plan (Subsection 7.3)~~ provides the following goal, policy (P), and implementation (I) measures to mitigate the exposure of residents to hazardous materials:

- Goal S-5 ~~The City shall protect~~ **Protect** the health, safety, natural resources, and property through regulation of use, storage, transport, and disposal of hazardous materials.

- S-P-15 The City shall maintain an awareness of hazardous materials throughout the Manteca region.

- S-I-9 ~~The City shall require~~ **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~~ **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.

Residual Level of Significance: **Less Than Significant With Mitigation**

The level of significance will be mitigated to less than significant if the above goal, policy and, implementation measures are implemented. The requirement for businesses and others manufacturing, storing, using, and transporting hazardous materials to identify such activities annually, will reduce the risks of increased exposure.

POTENTIAL IMPACT HM-2: The existing and future residents of the City of Manteca could be exposed to increased risk of accidental release of hazardous materials.

With the increased use, storage and transport of hazardous materials expected from the development of small business, industrial, and commercial land uses, the risk of accidental release of those materials is increased. In addition, the proposed residential development increases the use of household hazardous materials, which increases the accidental release of common household hazardous materials.

Level of Significance: Potentially Significant

Mitigation Measures:

HM-2.1 The Safety Element of the City of Manteca General Plan (Subsection 7.3) provides the following policies (P) and implementation measure (I) to reduce the risk of accidental release of 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. |
| S-I-11 | 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 public agencies, such as the CHP, in the event of a hazardous material emergency. |

HM-2.2 The General Plan 2023 Air Quality Element (Section 10) provides the following implementation (I) measure to help reduce the exposure to hazardous materials:

- | | |
|---------------|---|
| <u>AQ-I-3</u> | <u>Cooperate with San Joaquin County Environmental Health Department in identifying hazardous material users and in developing a hazardous materials management plan.</u> |
|---------------|---|

Residual Level of Significance: Less Than Significant With Mitigation

The level of significance will be mitigated to less than significant if the above policy and implementation measure are implemented. Regulation and increased awareness of proper use and disposal of hazardous materials will reduce the risk of accidental release. Cooperation with the Railroad and CHP will help reduce the level of release during any emergency.

POTENTIAL IMPACT HM-3: Use and possible emission of hazardous materials within one-quarter mile of an existing or proposed school could occur.

Increased mixed-use development, including building of needed schools, could increase the possibility of hazardous materials use near schools.

Level of Significance: Potentially Significant

Mitigation Measures:

HM-3.1 The Safety Element of the City of Manteca General Plan (Subsection 7.3) provides the following policy (P) to mitigate the possible exposure of schools to hazardous materials:

SP-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.

Residual Level of Significance: Less Than Significant With Mitigation

The level of significance will be mitigated to less than significant if the above policy is implemented. Through the approval and permitting process, the City can regulate the location of hazardous material use, assuring that such activities are not placed near schools.

POTENTIAL IMPACT HM-4: Placing development on a site which included on the Cortese list of hazardous materials would create a significant impact.

Level of Significance: No Impact

The City of Manteca does not contain sites that are identified on the Cortese List.

POTENTIAL IMPACT HM-5: The City of Manteca General Plan 2023 could interfere with emergency response or evacuation procedures.

Level of Significance: Potentially Significant

Mitigation Measures:

HM-5.1	The Safety Element of the City of Manteca General Plan (Subsection 7.4) provides the following goal, policy (P), and implementation measures to facilitate emergency procedures.
Goal S-6	Ensure that City emergency procedures are adequate in the event of potential natural or man-made disasters.
S-P-18	The City shall maintain and periodically update the City's Emergency Plan.
S-I-14	The City shall conduct periodic emergency response exercises to test the effectiveness of City emergency response procedures.
S-I-15	The City shall review County and state emergency response procedures that must be coordinated with City procedures.

Residual Level of Significance: Less Than Significant With Mitigation

The level of significance will be mitigated to less than significant if the above goal, policy, and implementation measures are implemented. These actions will facilitate emergency procedures for hazardous materials incidents, as well as other emergency situations. Seismic, flooding, and structural fire emergencies are discussed in Section 8, Section 10, and Section 14, respectively.

References

- (1) California Department of Toxic Substances Control. "CalSites Short Summary Report." May 22, 2002.
- (2) California Department of Toxic Substances Control. www.DTSC.ca.gov. May 2003.
- (3) San Joaquin County Public Health Services, Environmental Health Division. Telephone conversation with Margaret Lagorio, LOP Director. May 21, 2003.
- (4) California Integrated Waste Management Board. www.CIWMB.ca.gov. June 2003.
- (5) San Joaquin County Public Health Services, Environmental Health Division. Telephone conversation with Robert McClellan. June 2003.

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10. HYDROLOGY AND WATER QUALITY

This section addresses the quality of groundwater and surface water, and the depletion of groundwater. This section also addresses potential flooding in the Study Area.

10.1 EXISTING CONDITIONS

10.1.1 Local Drainage

No major drainages flow within the Study Area. Manteca is located on the relatively higher ground between Lone Tree Creek to the north, the Stanislaus River to the south, and the San Joaquin River to the southwest and west.

Although no major watercourse lies within the Study Area, the San Joaquin River flows approximately four (4) miles to the west of the Study Area boundary. Walthall Slough is a tributary to the river. The Slough's northern boundary is contiguous with the southwestern boundary of the Study Area.

Meteorological events such as intense precipitation may adversely affect the natural drainage of the region. In addition, seasonal snowmelt from the Sierra Nevada mountain range to the east contributes to the volume of water in the local hydrologic system. Urbanization contributes to an increased volume in the hydrologic system by increasing impervious surfaces, which do not allow for infiltration of water into the soil resulting in increased velocities and volumes of runoff.

The South San Joaquin Irrigation District (SSJID) operates drainage facilities that pass through Manteca and carry a portion of the City's drainage. Because of topography, drainage facilities generally follow along an east-to-west alignment. In some instances where subdivisions have developed near irrigation laterals, drainage pumping stations have been installed in lieu of long trunk lines to drains. Water from the SSJID, along with drainage pumped by the City, flows west into French Camp Canal, which eventually flows into French Camp Slough. Storm drainage is gravity-discharged from the Study Area north to French Camp Canal. Existing road and railroad crossings of the Canal are, however, undersized and will require replacement to accommodate peak design flows from the Study Area. The San Joaquin Delta is the ultimate destination of drainage carried by French Camp Slough.

The City's stormwater drainage system is further discussed in Public Facilities and Services (Section 14).

10.1.2 100-Year Flood Areas

The Federal Emergency Management Agency (FEMA) categorizes flood prone areas based on the frequency of occurrence. The City of Manteca has not been mapped. Figure 10-1 shows the location of the FEMA defined 100-year area of potential inundation and the 500-year area of

potential inundation nearest to the City. The primary flood hazard is the San Joaquin River (four miles outside the Study Area) and its tributaries, notably Walthall Slough (contiguous with the southwestern Study Area boundary). A levee running from Williamson Road east to Airport Way provides flood protection for the land north and east of Walthall Slough. This levee is under the jurisdiction of Reclamation District No. 17.

10.1.3 Dam Failure Inundation

Portions of the 100-year floodplain would be subject to inundation in the event of dam failure. Although the likelihood is remote, the area subject to inundation within the Study Area is not specifically defined, but would generally coincide with the area delineated as the 100-year floodplain.

Despite the number of dams near San Joaquin County, the risk of dam failure inundating portions of the County is considered low, and the degree and nature of risk for each dam is unknown. Dam failure can occur under three general conditions: as a result of an earthquake, an isolated incident due to structural instability, or because of intense rain in excess of design capacity.




Section 8589.5 of the California Government Code requires local jurisdictions to adopt emergency procedures for the evacuation of populated inundation areas identified by dam owners. The local Office of Emergency Services has prepared a Dam Failure Plan. This plan includes a description of dams, direction of floodwaters, responsibilities of local jurisdictions, and evacuation plans.

10.1.4 Surface Water Quality



The quantity, quality, and availability of water are vital to both human activities, and vegetation and wildlife in the Study Area. Water is essential to the viability of agriculture; the development of housing, commerce, and industry; recreation; and the maintenance of high-quality fish and wildlife habitats.

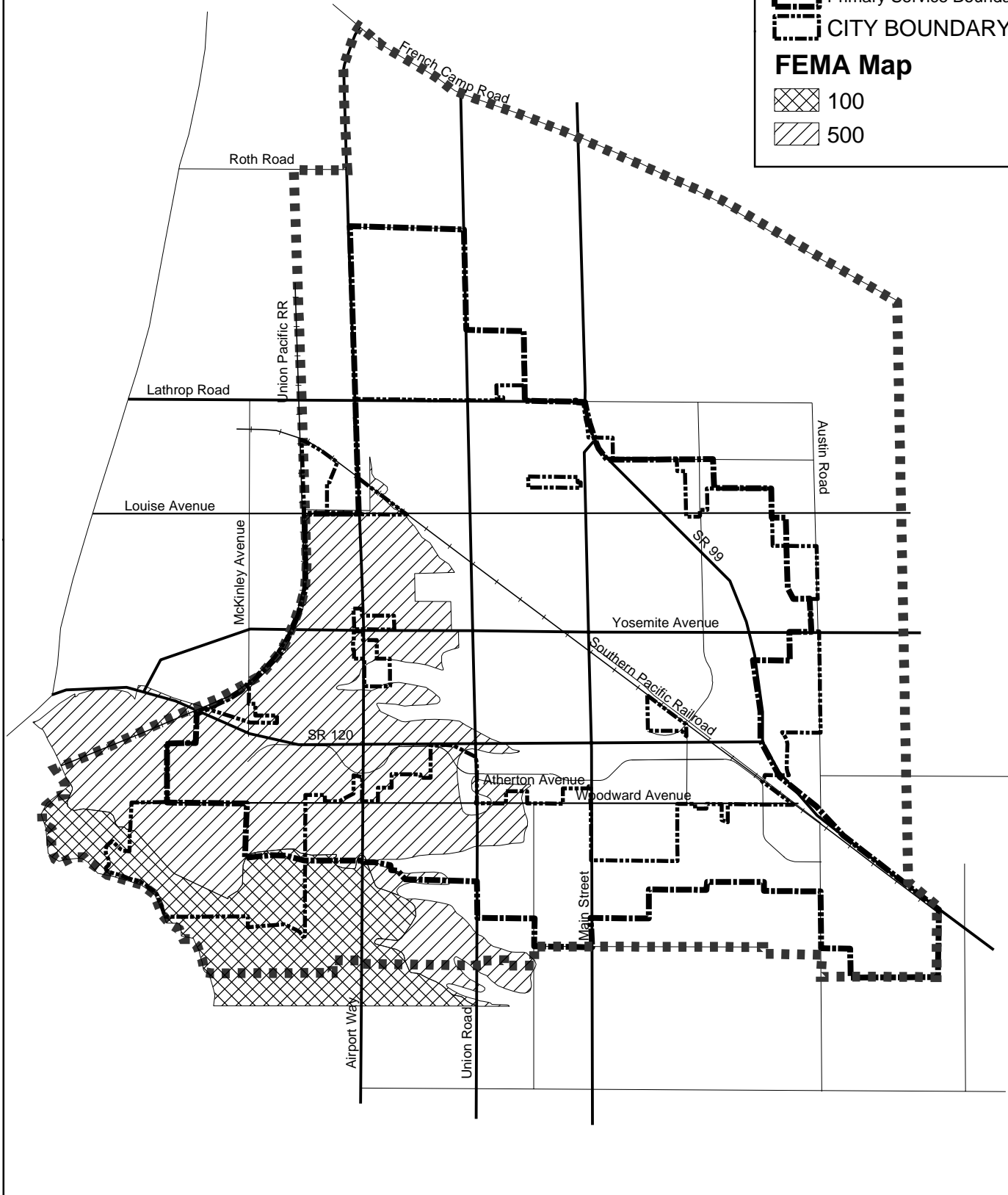
There are land uses and activities which the City must consider in protecting its water quality, including construction activities, agricultural land use, a dairy, urban runoff, and the wastewater treatment plant. Water quality issues associated with underground fuel or chemical storage tanks are discussed in Hazardous Materials (Section 9).

LEGEND

-  Study Area Boundary
-  Primary Service Boundary
-  CITY BOUNDARY

FEMA Map

-  100
-  500



Manteca General Plan

Construction Activities

Construction grading can impact water quality because it exposes bare soil. Rainfall on bare soil can cause erosion and sedimentation into nearby water bodies. Unstabilized soil can be washed or wind-blown into nearby surface water. Construction activities can also result in petroleum products and other pollutants from construction equipment, entering nearby drainages.

Agricultural Land Use

Water running off irrigated agricultural fields may contain fertilizers and pesticides. Improper use and disposal of farm chemicals can contaminate surface and groundwater resources. Agricultural procedures can also result in erosion of unstabilized soil, especially during conversion of vegetation. Aerial spraying could also drift into nearby water bodies.

Dairy

There is a dairy within the Study Area, located along Airport Way north of Yosemite Avenue. Wastes from confined animals can cause problems in nearby surface and groundwater. The wastes include nitrate, ammonia, bacteria, and total dissolved solids (TDS). The current adjacent land uses to the dairy are residential and a golf course. This property is proposed for conversion to residential land use in the General Plan 2023.

Urban Runoff

Urban runoff includes household chemicals (including pesticides, herbicides, and paints), as well as petroleum products from automobiles and landscaping equipment. Municipal sources of pollution include government yards where transportation, fueling, and maintenance activities take place.

Wastewater Treatment Plant

Discharge from municipal treatment plants may result in high coliform counts, elevated temperatures, pH changes, increased turbidity, and low dissolved oxygen in water bodies.

The discharge is subject to standards established by the California Regional Water Quality Control Board.

10.1.5 Groundwater Quality

Groundwater levels are relatively high throughout the Study Area.

The City's wells produce groundwater that meet or exceed the State Department of Health Services recommended drinking water quality standards.

10.1.6 Groundwater Recharge

Area water levels are buoyed by the proximity of the Delta channels to the west. Groundwater recharge comes from irrigation of agricultural lands surrounding the City and infiltration from streams flowing west out of the Sierra Nevada. This recharge occurs in areas with permeable materials which allow the infiltration of water along streams, alluvial fans and foothill areas. The Study Area includes a variety of soil types that provide percolation to groundwater. However, with no streams or alluvial fan conditions, there are no notable groundwater recharge areas identified within the Study Area.

10.2 REGULATORY SETTING

The following is a summary of the regulatory context under which surface water and groundwater resources are managed at the federal, state, and local level.

10.2.1 Applicable Federal Regulation

Water Quality: Federal Clean Water Act

The Federal Clean Water Act of establishes the basic structure for regulating discharges of pollutants into surface waters of the United States, and sets water quality standards for all contaminants in surface waters. Water quality standards are intended to protect public health, enhance the quality of water, and serve the purposes of the Clean Water Act. The Act defines water quality standards as federal or state provisions or laws that, (1) designate the beneficial uses of water, and (2) establish water quality criteria to protect those designated uses.

Safe Drinking Water Act

The Safe Drinking Water Act was amended in 1986 and 1996, and requires protection of drinking water and its sources (i.e., rivers, lakes, reservoirs, springs, and groundwater wells). The Act authorizes the U.S. Environmental Protection Agency (EPA) to set national standards for drinking water to protect against pollutants. The EPA, states, and local agencies work together to enforce these standards.

Water Quality: National Pollution Discharge Elimination System (NPDES)

The Federal Clean Water Act was amended in 1972 to regulate discharge of pollutants from any point source into the waters of the United States. NPDES permits cover industrial and municipal discharges, discharges from storm sewer systems in larger cities, stormwater associated with industrial activity, runoff from construction sites disturbing more than one (1) acre of soil, mining operations, and animal feedlots and agricultural facilities above certain thresholds.

Stormwater discharges from both large and small construction sites are now subject to NPDES requirements. Large construction sites are those that involve five or more acres of soil

disturbance. Small construction sites are those that involve from one to five acres of soil disturbance.

The NPDES stormwater permitting program is administered by the State Regional Water Quality Control Boards on behalf of the U.S. Environmental Protection Agency (EPA).

Flooding and Drainage: FEMA 100-Year Floodplain

The boundaries of the 100-year floodplain are delineated by FEMA on the basis of hydrology, topography and modeling during predicted rainstorms. Areas designated as flood zones are shown on published Flood Insurance Rate Maps (FIRM). FEMA requirements for residential development in a designated 'A' Zone include raising the first floor to at or above the base flood elevation (100-year). The National Flood Insurance Program (NFIP) requires owners of property within designated flood zones to purchase flood insurance.

10.2.2 Applicable State Regulation

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act, also known as the California Water Code, is California's statutory authority for the protection of water quality. Under this Act, the state must adopt water quality policies, plans and objectives that protect the state's waters. The Act sets forth the obligations of the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCB) pertaining to the adoption of Basin Plans and establishment of water quality objectives. Unlike the Federal Clean Water Act, which regulates only surface water, the Porter-Cologne Act regulates both surface and ground water.

State Water Resources Control Board (SWRCB)

The State Water Resources Control Board (SWRCB) administers state water rights and water quality functions. The SWRCB and its nine (9) Regional Water Quality Control Boards (RWQCB) administer water rights and enforce pollution control standards. The SWRCB and RWQCB's are responsible for ensuring implementation and compliance with the provisions of the Federal Clean Water Act (CWA) and California's Porter-Cologne Water Quality Control Act. The project is situated within the jurisdiction of the Central Valley Region of the RWQCB. The Central Valley RWQCB has the authority to implement water quality standards through the issuance of permits for discharges to waters within its jurisdiction.

General Construction Activity Stormwater Permit

General Stormwater Discharge Permits are required by the state for stormwater discharges associated with construction activities involving disturbance of five (5) acres or more. Construction on sites of fewer than five acres requires a permit if part of a larger development or

land sale. Landowners are responsible for obtaining and complying with the permits, but may delegate specific duties to developers and contractors by mutual consent.

Regulations under Section 402(p) of the Federal Clean Water Act are now in effect. They involve control of pollution in stormwater discharges. In California, the Section 402(p) NPDES Permit applicants are required to prepare and retain at the construction site a Stormwater Pollution Prevention Plan (SWPPP), and implement Best Management Practices (BMP) to reduce construction effects on receiving water quality by implementing erosion control measures. The SWPPP must describe the site, erosion and sediment controls, means of waste disposal, implementation of approved local plans, control of post-construction sediment and erosion control measures, maintenance responsibilities, and non-stormwater management controls. Dischargers are also required to inspect construction sites before and after storms to identify stormwater discharge from construction activity, and to identify and implement controls where necessary.

Central Valley RWQCB Basin Plan

The Water Quality Control Plan for the Sacramento and San Joaquin River Basins provides water quality objectives and standards for waters of these two river basins. The Basin Plan contains specific water quality objectives for bacteria, dissolved oxygen, pH, pesticides, electrical conductivity, total dissolved solids (TDS), temperature, turbidity, and trace elements. It also includes objectives for groundwater quality that pertain to bacteria, chemical constituents, radioactivity, taste, color, and toxicity.

California and Section 303(d) of the Clean Water Act

Section 303(d) of the Clean Water Act requires states to develop lists of water bodies that will not attain water quality standards after implementation of minimum required levels of treatment by point-source dischargers (municipalities and industries). Section 303(d) requires states to develop a total maximum daily load (TMDL) for each of the listed pollutants and water bodies. TMDL is the amount of loading that the water body can receive and still meet water quality standards.

The most recently approved (1988) Clean Water Act Section 303(d) list for California identifies the various waterways throughout the state that are water quality impaired for a number of constituents. The SWRCB is responsible for compiling the list. The San Joaquin River is on that list. The TMDL end dates for the pollutant constituents for the river range from December 1999 to December 2011. (1)

10.2.3 City of Manteca

South San Joaquin Irrigation District (SSJID) Surface Water Project

Groundwater is the City's primary source of domestic water. The City of Manteca is participating in the South San Joaquin Irrigation District (SSJID) Surface Water Project. This project will deliver surface water to provide a conjunctive use of groundwater and surface water. This will enhance the available water supply and will substantially reduce the amount of groundwater withdrawal. The South San Joaquin Irrigation District (SSJID) Surface Water Project and the conjunctive use of surface and ground water is described in Subsection 14.1.1 of this EIR.

Drainage

The City of Manteca Public Facilities Implementation Plan (1993) identifies a series of specific improvements required to accommodate drainage of the existing urban areas of the City. In addition, the plan identified other measures that apply to future development.

The PFIP requires that:

- Wherever possible, the land ultimately required for each improvement (included in the Drainage Master Plan) will be preserved before development occurs in an area.
- Storm drainage and flood protection facilities should be constructed when each new development begins.

Manteca has predominantly relied upon the lateral and drain facilities of South San Joaquin Irrigation District for terminal drainage. In concert with development, the SSJID facilities have been realigned into rights-of-way and/or structurally upgraded to be compatible with the land conversion from agricultural to urban use. As in the past, drainage improvements will be constructed in a timely manner in order to maintain the level of service standard. This is accomplished by constructing the storm drainage and flood protection facilities for each new project, and by having the necessary facilities in place at time of occupancy.

Manteca presently administers a variety of regulations designed to prevent flooding and address stormwater management. These include a flood ordinance, various provisions of the zoning ordinance and subdivision ordinance, and construction codes for residential and non-residential developments.

The City's municipal drainage system is further discussed in Public Facilities and Services, Section 14.

10.3 IMPACT EVALUATION CRITERIA

In accordance with CEQA Guidelines, Appendix G, any land use directed by the General Plan 2023 would have a significant impact on the environment if the land use would:

- a. Violate any water quality standards or waste discharge requirements.
- b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).
- c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.
- d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in substantial flooding on- or off-site.
- e. 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.
- f. Otherwise substantially degrade water quality.
- g. Place housing within a 100-year flood hazard as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map, or other flood hazard delineation map.
- h. Place within 100-year flood hazard area structures which would impede or redirect flood flows.
- i. 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.
- j. Inundation by seiche, tsunami, or mudflow.

Soil erosion is addressed in Geology, Soils, and Seismicity, Section 8.

Stormwater drainage system capacity is addressed in Public Facilities and Services, Section 14.

10.4 IMPACTS AND MITIGATION

POTENTIAL IMPACT HWQ-1: Planned development in the General Plan 2023 could violate water quality standards or waste discharge requirements.

Level of Significance: **Potentially Significant**

Mitigation Measures:

HWQ-1.1: Subsection 8.6 of the Resource Conservation Element of the proposed General Plan 2023 addresses water quality. The following implementation measure (I) should be **amended (as shown below in bold)** to meet water quality standards and waste discharge requirements for groundwater and surface water:

RC-I-24 Comply with the Regional Water Control Board's regulations and standards to maintain and improve groundwater **and surface water quality** in Manteca.

Residual Level of Significance: **Less than Significant with Mitigation**

Through compliance with the RWQCB regulations, the City of Manteca will meet water quality standards.

POTENTIAL IMPACT HWQ-2: **Planned development in the General Plan 2023 could substantially deplete groundwater supplies or interfere with groundwater recharge.**

Level of Significance: **Less Than Significant**

As discussed in Subsection 10.1.6 above, the Study Area includes a variety of soil types that provide percolation to groundwater. However, with no streams or alluvial fan conditions, there are no notable groundwater recharge areas identified within the Study Area.

Continued use of groundwater as the City's primary source of domestic water would be a significant impact. However, the level of significance will be reduced when surface water supplies are available through the SSJID Surface Water Project. Delivery of this water is planned for 2005, well before major new development would occur under the General Plan 2023. Even with the Surface Water project, Manteca would continue to pump groundwater water to meet the full projected demand associated with planned growth but would do so at the safe yield rate of extraction. Therefore, the impact is less than significant.

In addition, the General Plan 2023 provides the following goals, policies (P), and implementation measures (I) from the Resource Conservation Element (Section 8) will help to lessen the impacts to groundwater supplies:

-
- Goal RC-1 Minimize the consumption of water to reasonable levels consistent with a high level of amenities and quality of life for City residents and visitors.
- Goal RC-2 Maximize the beneficial uses of water by recycling water for irrigation and other non-potable uses.
- Goal RC-7 To protect water quality in the San Joaquin River and in the area's groundwater basin.
- 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-4 The City shall require ~~promote~~ water conservation in both City operations and private development to minimize the need for the development of new water sources.
- 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.
- 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.

- | | |
|---------|---|
| RC-P-12 | Protect the quality of Manteca’s groundwater. |
| RC-P-13 | Encourage participation of the County and surrounding communities in a basin-wide groundwater management study. |
| RC-I-19 | The City shall work with the County and surrounding communities to develop an action plan and/or to create an agency to manage and protect local and regional groundwater resources. |
| RC-I-20 | The City shall not approve new industrial or commercial development that has a significant potential for adversely affecting water quality in the San Joaquin River or in the area’s groundwater basin. |

POTENTIAL IMPACT HWQ-3: Implementation of the General Plan 2023 could alter the existing drainage pattern, or increase the rate of runoff that could result in flooding.

Level of Significance: Potentially Significant

There are no natural drainages in the Study Area. The South San Joaquin Irrigation District (SSJID) operates drainage facilities that pass through Manteca and carry a portion of the City’s drainage. Water from the SSJID, along with drainage pumped by the City, flows west into French Camp Canal, which eventually flows into French Camp Slough.

Urban development increases the amount of impervious surfaces, which in turn increases the amount of runoff.

Mitigation Measures:

HWQ-3.1: The Safety Element (Section 7) of the General Plan 2023 addresses the issue of impervious surfaces and flooding potential. The following implementation measures (I) are intended to reduce the amount of impervious surfaces and the subsequent flooding potential:

- | | |
|-------|---|
| S-I-6 | Discourage large continuous paved areas <u>unless provided with engineered drainage facilities.</u> |
|-------|---|

Residual Level of Significance:

The level of significant of urban pollutants entering receiving waters will be reduced to less-than-significant with above implementation measures. BMPs are specifically designed to reduce the impact of urban runoff.

POTENTIAL IMPACT HWQ-5: Implementation of the City of Manteca General Plan 2023 may expose people and structures to the flood hazards of the San Joaquin River 100-year floodplain.

Level of Significance: Potentially Significant

The FEMA 100-Year Potential Flood Map nearest to Manteca is that for the San Joaquin River, as shown in Figure 10-1. The City of Manteca has not been mapped. The San Joaquin River and its tributary, Walthall Slough (contiguous with the southwestern Study Area boundary) are the primary flood hazards for the Study Area. A levee running from Williamson Road east to Airport Way provides flood protection for the land north and east of Walthall Slough. This levee is under the jurisdiction of Reclamation District No. 17.

Mitigation Measures:

HWQ-5.1: The Safety Element (Section 7) of the City of Manteca General Plan 2023 provides the following goals, policies (P), and implementation measures (I) to mitigate potential exposure of people and structures to a significant loss of property and life involving flooding from the designated San Joaquin River 100-year floodplain:

- Goal S-3 Prevent loss of lives, injury, and property damage due to flooding.
- Goal S-4 Pursue flood control solutions that minimize environmental impacts.
- S-P-7 Regulate all uses and development in areas subject to potential flooding through zoning and other land use regulations.
- S-P-8 Cooperate with other agencies in the pursuit of ~~Pursue~~ a regional approach to flood issues.
- S-P-9 Combine flood control, recreation, water quality, and open space functions where feasible.

- S-P-10 Ensure that any existing structures subject to the 100-year flood provide adequate protection from flood hazards.
- S-P-11 Ensure that the impacts of potential flooding are adequately analyzed when considering areas for future urban expansion.
- S-P-12 New residential development, including mobile homes, shall be constructed so that the lowest floor is at least one foot above the 100-year flood level.
- S-P-13 Non-residential development shall be anchored and flood-proofed in accord with the Federal Emergency Management Agency (FEMA) standards to prevent damage or causing damage due to a ~~from the~~ 100-year flood or, alternatively, elevated to at least one foot above the 100-year flood level.

When improvements to existing development are made costing at least 50 percent of the current market value of the structure before improvements, the structure shall be brought into compliance with FEMA standards.

- S-I-4 The City shall continue to participate in the National Flood Insurance Program. To this end, the City shall ensure that local regulations are in full compliance with standards adopted by the Federal Emergency Management Agency (FEMA).
- S-I-5 Provide flood warning and forecasting information to City residents.
- The City shall adopt and implement local flood management development standards.

Residual Level of Significance: Less than Significant with Mitigation

The level of significance will be less than significant after implementation of the above goals, policies, and implementation measures. Combined with General Plan 2023 open space designations nearest the 100-year floodplain and the levee system, these measures will significantly reduce the flood hazards to the Study Area.

POTENTIAL IMPACT HWQ-6: Implementation of the proposed General Plan 2023 could expose people of structures to inundation by seiche, tsunami, or mudflow.

Level of Significance: Less Than Significant

It is highly unlikely that inundation from a seiche (earthquake-induced, tsunami-like flows of water from an inland body of water) will affect the Study Area. The nearest body of inland water is the San Joaquin River, and the Study Area is protected by a levee system.

Given that the Study Area is nearly level in topography; ~~(Geology, Soils, and Seismicity, Section 8)~~, it is highly unlikely that the Study Area would be inundated by mudflows. The nearest source of possible mudflow is the San Joaquin River located at the southwesterly perimeter of the Study Area ~~four miles outside the Study Area boundary, and the Study Area is protected by a levee system.~~

References

- (1) Central Valley Water Quality Control Board, 1988 303(d) List, By Water Body.
www.swrcb.ca.gov/rwqcb5.