

State Route 120/McKinley Avenue Interchange Project

City of Manteca, San Joaquin County, California
10-SJ-120-PM 1.9-3.0
EA 10-0H8900
10-1200-0159

Initial Study with Proposed Mitigated Negative Declaration/ Environmental Assessment



Prepared by the
State of California Department of Transportation
and The City of Manteca

The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried-out by Caltrans under its assumption of responsibility pursuant to 23 USC 327.



July 2014

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General Information about This Document

What's in this document:

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration, has prepared this Initial Study with Proposed Mitigated Negative Declaration/Environmental Assessment, which examines the potential environmental impacts of alternatives being considered for the proposed project in the City of Manteca in San Joaquin County. The document describes why the project is being proposed, the alternatives being considered, how the existing environment could be affected by the project, potential impacts from the alternatives, and proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read the document; additional copies of this document as well as related technical studies are available for review at the Caltrans District 10 office at 1976 East Dr. Martin Luther King Jr. Boulevard, Stockton, California 95205. This document may be downloaded from the following website: <http://www.dot.ca.gov/dist10/d10projects>.
- We'd like to hear what you think. If you have any concerns regarding the proposed project, please attend the public hearing and send your written comments to Caltrans by the deadline. Submit comments via U.S. mail to Caltrans at the following address: Janet Bailey, Acting Branch Chief, California Department of Transportation, 855 M. Street, Suite 200, Fresno, CA 93721.
- Submit comments via email to: janet.bailey@dot.ca.gov
- Submit comments by the deadline: August 29, 2014

What happens next:

After comments are received from the public agencies, Caltrans, as assigned by the Federal Highway Administration, may 1) give environmental approval to the proposed project, 2) do additional environmental studies, or 3) abandon the proposed project. If the project is given environmental approval and funding is appropriated, Caltrans could design and construct all or part of the proposed project.

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FHWA Highway ID No.

SCH #
10-SJ-120-PM 1.9/3.0
10-0H8900
10-1200-0159

Construct a new interchange on State Route 120 at McKinley Avenue, with roadway improvements between Airport Way and Yosemite Avenue, just west of the City of Manteca

**INITIAL STUDY WITH PROPOSED MITIGATED NEGATIVE DECLARATION/
ENVIRONMENTAL ASSESSMENT**

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 USC 4332(2)(C)

THE STATE OF CALIFORNIA

Department of Transportation
and
The City of Manteca

7-22-2014
Date of Approval

Margaret R. Lawrence
Margaret L. Lawrence
Office Chief Environmental North
California Department of Transportation
CEQA/NEPA Lead Agency

**PROPOSED MITIGATED NEGATIVE DECLARATION
PURSUANT TO: DIVISION 13, PUBLIC RESOURCES CODE**

Project Description

The California Department of Transportation (Caltrans) proposes to construct a new interchange on State Route 120 at McKinley Avenue that includes on- and off-ramps and roadway improvements to McKinley Avenue. The project would be located between the Yosemite Avenue/State Route 120 and Airport Way/State Route 120 interchanges.

Determination

This proposed Mitigated Negative Declaration is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt a Mitigated Negative Declaration for the project. This does not mean that Caltrans' decision regarding the project is final. This Mitigated Negative Declaration is subject to change based on comments received by interested agencies and the public.

Caltrans has prepared an Initial Study for this project and, pending public review, expects to determine from this study that the project would not have a significant effect on the environment for the following reasons:

- The project would have no effects on coastal zone, wild and scenic rivers, timberland/forestland, and hydrology and floodplain.
- In addition, the project would have less-than-significant effects on land use; state, regional and local plans; parks and recreation facilities; growth; farmlands; community character and cohesion; environmental justice; and, plant species.

With the following mitigation measures incorporated, the project would have less-than-significant effects on relocations and real property acquisition; utilities/emergency services; traffic and transportation/pedestrian and bicycle facilities; visual/aesthetics; cultural resources; water quality and stormwater runoff; geology/soils/seismic topography; paleontology; hazardous waste/materials; air quality; noise; natural communities; wetlands and other waters; animal species; threatened and endangered species; and invasive species.

Margaret L. Lawrence
Office Chief Environmental North
District 10
California Department of Transportation

Date

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans), in cooperation with the City of Manteca, proposes to construct a new interchange, freeway auxiliary lanes and connecting roadways at the existing McKinley Avenue undercrossing on State Route 120 in Manteca in San Joaquin County. The cost of the project is estimated at \$46.6 million for construction and right-of-way acquisition.

The project is a new interchange on a previously constructed access-controlled route. Caltrans is the lead agency under the National Environmental Policy Act and the California Environmental Quality Act. The Federal Highway Administration's responsibility for environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried-out by Caltrans under its assumption of responsibility pursuant to 23 United States Code 327.

The interchange project is listed in the 2011 Regional Transportation Plan of the San Joaquin Council of Governments as a Tier I project. (Tier 1 projects are those that the region intends to build, implement and maintain during the plan period with identified revenue resources. They represent the region's fiscally constrained program for developing the transportation system.) The City of Manteca is expected to experience significant growth in population over the next 20 years. The existing Yosemite Avenue and Airport Way interchanges are not suited to accommodate the corresponding increases in traffic, which will result in substantial travel delays through the project area. Because State Route 120 connects Manteca with Interstate 5, congestion through the project area could hinder vehicle movement between the central San Joaquin Valley and San Francisco Bay Area.

1.1.1 Project Location and Setting

The project site sits in the southern portion of San Joaquin County, about 12 miles south of Stockton and 2.5 miles south of Lathrop, in the southwestern portion of Manteca.

Although distribution, service and retail employment exists within the area, Manteca serves largely as a residential community for the commercial and industrial employment centers west of the Altamont Pass and the San Francisco Bay Area.

Manteca has experienced an expansive growth rate of 32.4 percent from 2001 to 2011. Figure 1.1 and Figure 1.2 show the regional location and local area where the project site would be developed, respectively.

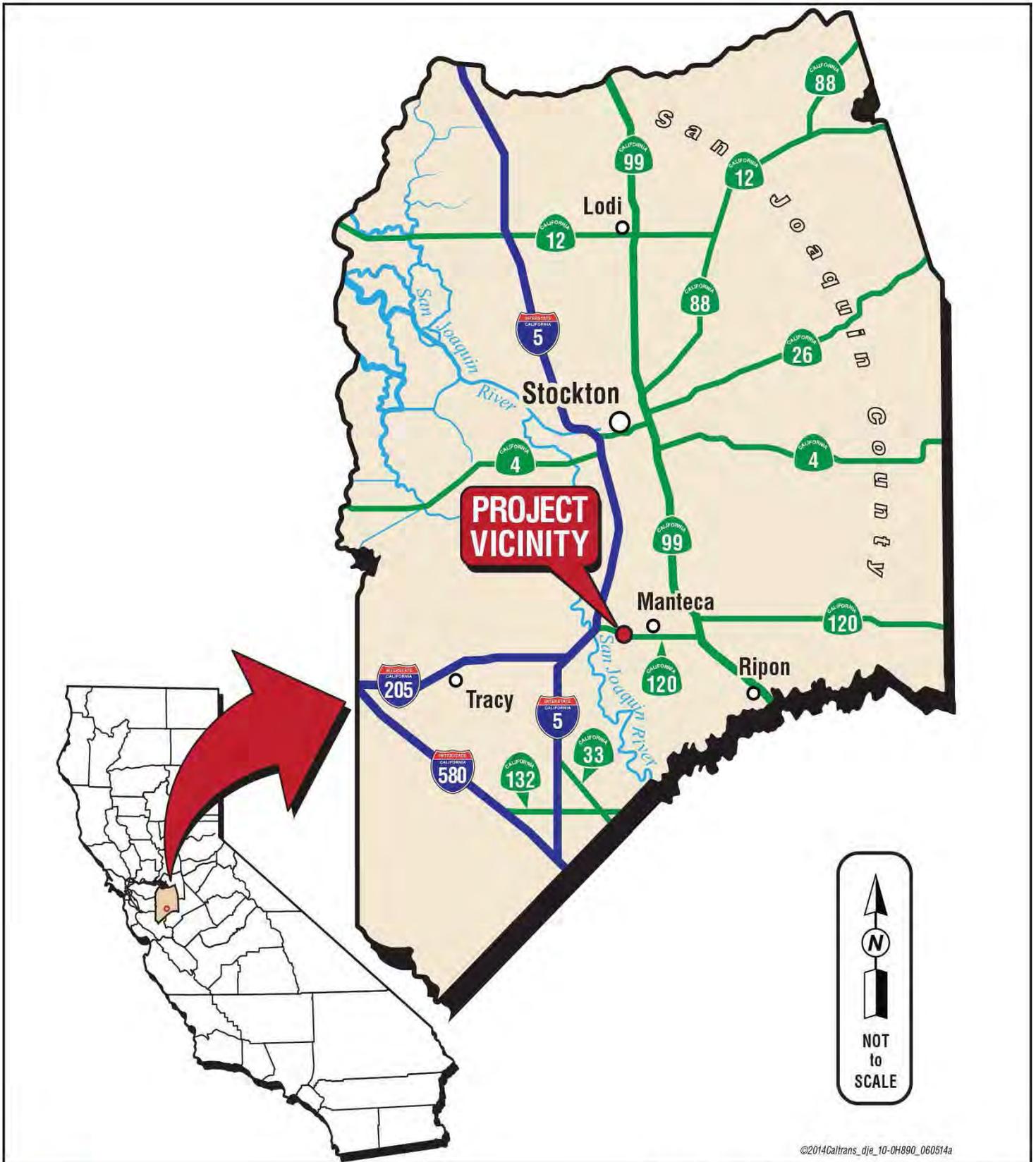
The project site sits along the State Route 120 corridor between the Yosemite Avenue/State Route 120 interchange and the Airport Way/State Route 120 interchange at the McKinley Avenue overpass. State Route 120 begins at Interstate 5 in Lathrop and ends at U.S. Highway 395 in Mono County. State Route 120 provides access from the Central Valley communities to Interstate 5, Interstate 205, and Interstate 580 en Route to the San Francisco Bay Area.

There is a Route break in the Manteca area where State Route 120 overlaps State Route 99 between the State Route 99/State Route 120 West interchange and the State Route 99/120 East interchange. Through the Manteca area, State Route 120 is a four-lane freeway with 12-foot-wide lanes, 10-foot-wide outside shoulders, 5-foot-wide inside shoulders, and a median 95 feet wide. In the project vicinity, McKinley Avenue is a two-lane minor arterial street, with 12-foot lanes and 2-foot shoulders.

The project site is characterized by relatively flat land that has been used in the past mainly for agricultural purposes. In the last decade, however, the land has become more urbanized with residential and commercial uses. Land uses within the project boundary are designated as rural residential, agricultural, and public open space according to the 2023 General Plan Land Use Element. According to the 2023 Manteca General Plan Zoning Map, the land is zoned as general commercial and undesignated.

1.1.2 Project Site Background

The section of State Route 120 in the project area was constructed in two phases beginning in the late 1970s. The first phase constructed what is now the eastbound direction of State Route 120. The second phase constructed the westbound direction and was completed in the mid-1990s. The first interchange on State Route 120 east of Interstate 5 was the Yosemite Avenue interchange in Lathrop, followed by the Airport Way interchange in Manteca. These existing interchanges are 2 miles apart. Within this 2-mile stretch, State Route 120 crosses over the Union Pacific Railroad and then over McKinley Avenue. The Route is a north-south road extending from Woodward Avenue to Lathrop Road. There is currently no connection to State Route 120 from McKinley Avenue. Vehicles access State Route 120 via one of two existing interchanges: 1) Yosemite Avenue interchange, 1 mile west of McKinley



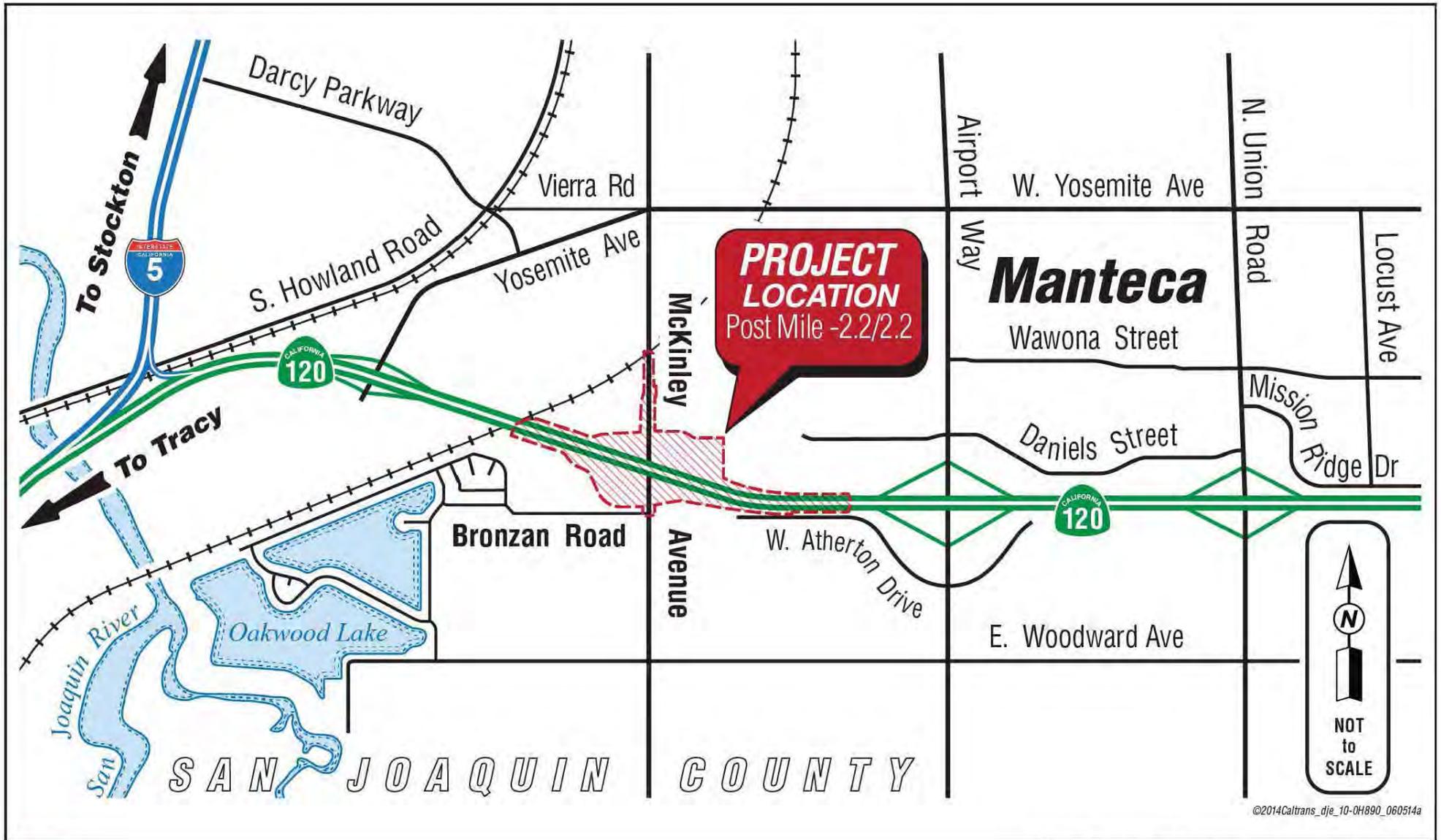
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State Route 120/McKinley Avenue Interchange
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Figure 1.1: Project Vicinity

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Figure 1.2: Project Location

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Avenue, or 2) Airport Way interchange, 1 mile east of McKinley Avenue. Currently, no pedestrian or bicycle facilities exist within the project area along McKinley Avenue.

The City of Manteca recently approved the Manteca General Plan 2023 that provides an updated land use map showing the potential build-out of the city in the vicinity of the proposed project. Several areas to the south and north of the proposed project are dedicated to the development of general commercial, light industrial, and residential land uses. As of December 2013, a number of residential land development projects in the area of the project have already gone through environmental review and are expected to start construction before 2018. These projects are entitled to develop approximately 4,993 residential units to potentially add 15,579 residents to Manteca.

Southwest of the existing McKinley Avenue undercrossing, Manteca approved a development of about 1,400 acres called the Tara Business Park. Another large development—Big League Dreams—lies in the northwest quadrant of the existing Airport Way interchange. This development includes 6 baseball fields, a recreational center, and an extension of Daniels Street from Airport Way to McKinley Avenue, north of the proposed project site. Manteca also developed a Specific Street Plan for the southwest portion of the city showing a new intersection at McKinley Avenue and Atherton Drive, as it extends from the Airport Way interchange to McKinley Avenue and continues to Woodward Avenue. The Daniels Street and Atherton Drive intersections would be a minimum of 1,200 feet from the centerline of State Route 120.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the proposed project is to construct a new interchange at McKinley Avenue to:

- Improve existing traffic circulation and accommodate forecasted traffic demand on State Route 120 between Airport Way and Yosemite Avenue.
- Accommodate planned growth that has been approved in the Manteca General Plan 2023 per the updated Land Use Map.
- Reduce congestion on local roads and local intersections in Manteca.

1.2.1.1 Improve Existing Traffic Circulation and Accommodate Forecasted Traffic Demand

The proposed new State Route 120/McKinley Avenue interchange would improve access to State Route 120, relieving congestion on roads in the area and accommodating forecasted traffic increases. Many roads, intersections and State Route 120 in the project area, under existing conditions, do not meet level of service standards set by the City of Manteca or Caltrans. Implementation of the proposed project would improve the declining level of service at the roads, intersections and State Route 120 in the project area as future population increases.

The City of Manteca General Plan, San Joaquin County General Plan, and Regional Transportation Plan are the major land use planning documents for the project area. All three documents project growth in the region, with the City of Manteca General Plan envisioning industrial, residential, and commercial uses for the project area. Some development projects in the area have already been approved. According to the San Joaquin Council of Governments, Manteca is expected to reach a total population of 117,010 (a 138 percent increase over the 2000 population) by the year 2035. San Joaquin County will also experience considerable growth, reaching a population of 989,774 by 2035. The rapid growth in the Manteca area is due mainly to rising housing costs in the Bay Area, causing an influx of new residents looking for more affordable housing in Manteca. Without new access through implementation of the proposed project, the study area intersections, roadway segments and State Route 120 would continue to operate at unacceptable levels of service (the following level of service standards apply for the Project: Caltrans – Intersections within the Caltrans right-of-way should operate at level of service D or better for all movements; City of Manteca: a minimum level of service D for all streets and intersections with the exception of Downtown in which right-of-way is limited; City of Lathrop: Considers level of service D to be the minimum operating standards at signalized and all-way stop-controlled intersections).

1.2.1.2 Accommodate Planned Growth

Implementation of the Project is expected to accommodate the planned growth that the City of Manteca, San Joaquin County, and the San Joaquin Council of Governments has envisioned in many of their planning documents. The City of Manteca has already entitled residential developments to the north and south of State Route 120 and growth in the Project area will begin occurring as soon as 2018 when these developments are planned to be built out. Without implementation of the Project, State Route 120, local intersections, and roadways will continue to

deficiently operate per City of Manteca and San Joaquin County level of service standards. Implementation of the Project would relieve local congestion and improve the level of service along State Route 120, local intersections and roadways, as the City of Manteca and surrounding unincorporated San Joaquin County builds-out.

1.2.1.3 Reduce Congestion on Local Roads

The proposed McKinley Avenue interchange would connect planned regional arterials with State Route 120 and provide an alternate Route to State Route 120 for local traffic. San Joaquin County is a major Northern California distribution point where the two main north-south highways, Interstate 5 and State Route 99, intersect and are joined by State Route 120 through the City of Manteca. The proposed McKinley Avenue interchange would serve north-south access to roadways in the western portion of the Manteca urban area and provide an alternate means of access to future east-west connections to the local roadway system. These changes to the transportation network would lessen local travel delay and congestion on roads, intersections, and on State Route 120 in the project area.

1.2.2 Need

According to the 2010 U.S. Census Bureau , the City of Manteca has a current estimated population of 67,096 residents. The 2023 City of Manteca General Plan has indicated that by 2023 the population is estimated to be 113,254 residents based on build-out of land uses within the City. The surrounding interchanges and local roads would not support this increase in population under existing conditions. The proposed project is needed to provide more efficient access to and from State Route 120 for southwestern Manteca and to accommodate projected traffic volumes for the planned growth areas in the vicinity of McKinley Avenue. Focus of the discussion below is based on the existing, opening day (2020), and design year (2040) level of service conditions for intersections and street/freeway segments in and around the project site.

1.2.2.1 Circulation Degradation without Project Implementation

The proposed project is on State Route 120 between the Yosemite Avenue/State Route 120 interchange and Airport Way/State Route 120 interchange. State Route 120 is a major thoroughfare within the City of Manteca, connecting State Route 99 with Interstate 5. The *Revised Final Traffic Report* was prepared in April 2013 and provides an analysis of the level of service of local intersections, roadway segments and State Route 120 segments under existing conditions, opening day no-

build conditions, opening day build conditions, design year no-build conditions, and design year build conditions.

All of the study intersections, roadway segments, and State Route 120 segments operate at an overall acceptable level of service D rating or better. A Level of service E rating currently occurs during the afternoon peak hour conditions where the eastbound State Route 120 ramp diverges at Yosemite Avenue and Airport Way.

By opening day, a substantial amount of new development is expected to occur in the project vicinity, resulting in an increased population that would use the roadways. Project implementation under opening day conditions would result in acceptable operations at the State Route 120/McKinley Avenue interchange ramp intersections as all movements would operate at level of service C or better ratings. The adjacent State Route 120/Yosemite Avenue and State Route 120/Airport Way interchanges would operate a level of service F due to the lack of any planned and programmed improvements; however, the proposed project would divert traffic away from these interchanges, slightly improving level of service, but not enough of a change to restore their operations to an acceptable level.

Most of State Route 120 between Interstate 5 and Union Road is expected to operate at level of service E or F during the morning and afternoon peak hours, with or without implementation of the project. This result is expected because two off-ramps already operate at level of service E, traffic is expected to grow by at least 3 percent per year through 2020, and the planned widening of State Route 120 to a six-lane freeway would not be scheduled until after 2020. The proposed project would include construction of an auxiliary lane on State Route 120, which would improve level of service operations on the State Route 120 segments between Interstate 5 and Union Road; however, operational levels of service would remain at an F rating during the peak travel direction due to through traffic levels that exceed the freeway's design capacity.

By the design year, a number of circulation improvements will have occurred based on the estimated build-out of land uses in Manteca and Lathrop. Key roadway improvements that would occur by 2040 include the widening of State Route 120 to a six-lane freeway and construction of the McKinley Avenue Expressway, southeasterly of the proposed project site and State Route 99/State Route 120 interchange. However, the Interstate 5/State Route 120 interchange is not planned to be upgraded, which would cause a bottleneck that limits the amount of traffic able to

enter and exit State Route 120 and Interstate 5. With implementation of the proposed project, all movements at each ramp intersection on the new State Route 120/McKinley Avenue interchange would operate at level of service D or better during both morning and afternoon peak hours. Overall, each intersection would operate at a level of service B or C rating.

In the design year, the project would improve operating conditions at adjacent intersections. The project would improve operations at the State Route 120/Airport Way interchange from a level of service F to D rating during morning peak hour conditions. During afternoon peak hour conditions, operations would slightly improve at this intersection with project implementation, but would continue to operate at a level of service E/F range. The project would also divert some traffic away from the State Route 120/Yosemite Avenue interchange to improve the intersection's level of service rating. Finally, the project would improve conditions at the McKinley Avenue/Daniels Street and McKinley Avenue/Atherton Drive intersections to a level of service D rating.

In the design year, the project with mitigation measures implemented would improve State Route 120 (freeway) operations. Under the design year no-build conditions, State Route 120 in the project area would operate at or near level of service F, with hourly flows of 2,050 vehicles per hour per lane to exceed Caltrans traffic operations standards for State Route 120. The project causes two beneficial improvements to the level of service on State Route 120 due to reductions in traffic caused by diversion to the new interchange, but the project would also cause four degradations in level of service on State Route 120. The benefits of the project, however, outweigh the degradations that would result along State Route 120. With implementation of mitigation measures, the project would improve State Route 120 operations to a level of service E rating, exceeding the design year no-build conditions.

Without implementation of the project, the State Route 120 corridor, surface streets and intersections in the area would degrade in level of service and general flow conditions. The project is needed to alleviate the increased traffic volumes that are expected from future growth in Manteca, Lathrop and areas in the vicinity of McKinley Avenue. A more detailed analysis of the effects to circulation due to project implementation is provided later under Traffic and Transportation/Pedestrian and Bicycle Facilities.

1.3 Project Description

The project would construct a new interchange on State Route 120 at McKinley Avenue and improvements to State Route 120 and McKinley Avenue. Plans for the development of the new interchange and State Route 120 and McKinley Avenue improvements are shown in Figure 1.3.

1.4 Alternatives

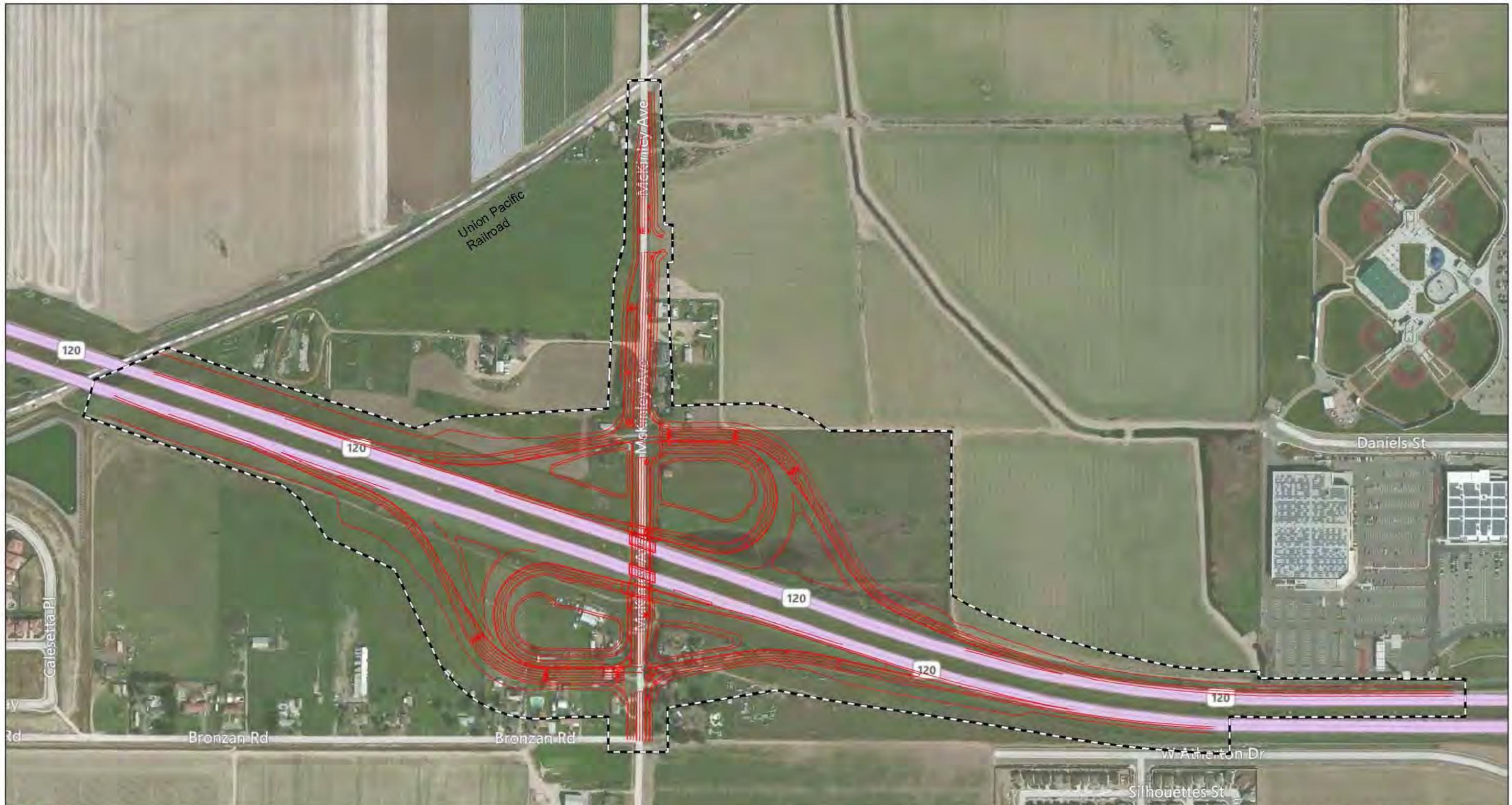
Under consideration for the project are a build alternative for the State Route 120/McKinley Avenue interchange and a no-build alternative. Each alternative is described below.

1.4.1 Build Alternative: Partial Cloverleaf Interchange (Type L-9) at McKinley Avenue

The build alternative proposes a Type L-9 partial cloverleaf interchange at McKinley Avenue. The Type L-9 interchange would provide loop on-ramps in addition to four diamond-type entrance and exit ramps. No left turns at ramp intersections from McKinley Avenue would be required. Two mixed-flow and high occupancy vehicle lanes would be provided on the loop on-ramps and the diagonal on-ramps in both the eastbound and westbound directions. Ramp metering would be installed and operational on opening day. The build alternative is being proposed to provide direct access to McKinley Avenue and relieve future congestion along State Route 120 and local Manteca roadways and interchanges. Below is a detailed explanation of the improvements that would occur with implementation of the project.

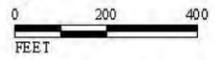
1.4.1.1 State Route 120 Improvements

Improvements would be made to State Route 120 in the area of the proposed McKinley Avenue interchange. A 2,000-foot-long auxiliary lane is proposed on westbound State Route 120 between Airport Way and McKinley Avenue that connects to a two-lane exit ramp in the westbound State Route 120 direction. A 368-foot-long deceleration lane is proposed for the two-lane exit ramp in the State Route 120 eastbound direction that connects to a two-lane exit ramp in the eastbound State Route 120 direction. The proposed deceleration lanes would allow motorists a safe way to merge out of the State Route 120 mainline flow to prevent bottlenecks by motorists attempting to exit at the new McKinley Avenue interchange.



LEGEND

-  Project Site Boundary
-  Project Design



*State Route 120/McKinley Avenue Interchange
 Manteca, San Joaquin County, California
 10-SJ-120-PM 1.9-3.0
 EA 10-OH8900*

Figure 1.3: Project Design

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1.4.1.2 McKinley Avenue Improvements

McKinley Avenue is a two-lane rural road that extends northerly from Woodward Avenue under State Route 120 to Yosemite Avenue and beyond. The project would improve McKinley Avenue to accommodate the development of the new State Route 120/McKinley Avenue interchange. Improvements on McKinley would include development of seven lanes passing under the existing undercrossing structures composed of two through lanes in each direction (northbound and southbound—a total of four through lanes), two right-turn lanes in the northbound direction and one right-turn lane in the southbound direction. McKinley Avenue would be improved to accommodate 12-foot-wide lanes and 4-foot-wide shoulders. An additional through lane would be provided southbound at the eastbound ramp intersection. A dedicated high occupancy vehicle-only right-turn lane would also be provided on southbound McKinley Avenue at the westbound ramps intersection. A 10-foot-wide Class I bike lane/pedestrian walkway would be developed on the east side of McKinley Avenue in compliance with the City of Manteca 2003 Bicycle Master Plan. Retaining walls (tieback wall types) would be developed under the overcrossing of State Route 120 over McKinley Avenue to comply with city street widths.

1.4.1.3 Construction Activity

Construction of the project would start in early 2017 and be completed within 30 months, subject to the availability of right-of-way and construction funds. The project would be built in four stages to allow as little impact to traffic flow conditions along State Route 120 and McKinley Avenue as possible:

- Stage 1 – Rough grading of ramps and basins – early 2017 to mid-2017
- Stage 2 – Construction of ramps and ramp bridges – mid-2017 to mid-2018
- Stage 3 – Widening of McKinley Avenue and widening on State Route 120 – mid-2018 to mid-2019
- Stage 4 – Closeout and final connection activities – mid-2019 to fall 2019

1.4.2 No-Build Alternative

The no-build alternative would keep the roadways as they are. No new interchange at McKinley Avenue and State Route 120 would be built, and the project site would stay the same as existing conditions. Traffic would continue to access State Route 120 via the existing Yosemite Avenue/State Route 120 interchange to the west or Airport Way/State Route 120 interchange to the east of the current configuration of McKinley Avenue undercrossing at State Route 120. Currently, the Yosemite Avenue

interchange operates at level of service B/C; the Airport Way interchange operates at level of service D or better.

Manteca has approved the Manteca General Plan 2023, which provides an update to the City's Land Use Map up to future build-out conditions. Most of the land uses south and north of the McKinley undercrossing at State Route 120 are residential and commercial. As of December 2013, a number of residential developments south and north of the McKinley undercrossing at State Route 120 have been entitled, and construction is expected to occur by 2018. These developments have the potential to add 4,993 residential units and 15,579 residents (see Subsection 2.1.3) to Manteca in the area of the McKinley Avenue undercrossing at State Route 120. Residents in this area would continue to access regional and local areas via State Route 120 and continue to use the Airport Way/State Route 120 and Yosemite Avenue/State Route 120 interchanges as entrance and exit points at Manteca.

The growth that is expected to occur with these developments and future planned developments in the city would result in both of these intersections degrading to levels of service that are unacceptable per Manteca and Caltrans operational standards for freeway segments and interchanges. Implementation of the no-build alternative would not meet the purpose of the project because it would not: 1) improve traffic circulation and accommodate forecasted traffic demand on State Route 120 between Airport Way and Yosemite Avenue, 2) reduce congestion on local roads and local intersections in Manteca, or 3) accommodate planned growth that has been approved in the Manteca General Plan 2023 per the updated Land Use Map.

1.4.3 Alternatives Considered But Eliminated from Further Discussion

The Project Development Team explored a number of alternatives at the State Route 120/McKinley Avenue interchange site during the Project Study Report phase. Below are five alternatives that were considered for the project, but later eliminated for the reasons noted in the discussion below.

- Modified Type L-7 Interchange Alternative
- Modified Type L-7 Interchange (Longer Undercrossings) Alternative
- Single Combined Interchange (Yosemite Avenue and McKinley Avenue) Alternative
- Alternate Location for Single-Lane Interchange Alternative
- Partial Cloverleaf Interchange (Type L-8) at McKinley Avenue Alternative

1.4.3.1 Modified Type L-7 Interchange Alternative

This alternative would have constructed a modified Type L-7 Interchange. The northeast and southwest quadrants of the project site would have had the Type L-7 off-ramps and loop on-ramps. The northwest and southeast quadrants would have diagonal on-ramps. In the southwest quadrant, the 2030 off-ramp demand volumes would have been more than 1,700 vehicles during peak hour conditions. Under this alternative, a two-lane off-ramp would have been designed and initial construction would have provided ultimate rights-of-way and grade for the future two-lane exit; however, the off-ramp would have been initially paved as a one-lane exit. The off-ramp would then have become three lanes approaching the intersection to provide capacity for all turns. The loop on-ramp in this quadrant would have had relatively low volumes and, therefore, would have been developed as a one-lane on-ramp. As a design alternative, the ramp intersection could have been moved farther south, but this idea was not used due to additional right-of-way impacts.

In the northeast quadrant of this alternative, the off-ramp would have been one lane and would then transition into three lanes for turns at the intersection. Volumes for the westbound loop ramp in this quadrant would have been 2,000 vehicles per hour, and this section of State Route 120 would not have been able to adequately accommodate this volume of vehicles. This alternative proposed a diagonal on-ramp in the northwest quadrant of the interchange that would have needed to be moved 985 feet westerly if the loop on-ramp was to include an auxiliary lane. Moving the diagonal on-ramp westerly 985 feet would have reduced the weaving (lane changing) length to the westbound off-ramp at the Yosemite Avenue interchange to an unacceptable distance. Therefore, this alternative did not proceed with a 985-foot auxiliary lane for this loop on-ramp.

Under this alternative, McKinley Avenue would have been increased to six lanes passing underneath the existing structure (three lanes in each direction). The roadway would have had 4-foot-wide shoulders and a 4-foot-wide raised median. A Class I bike path would have been proposed along the east side of McKinley Avenue, separated from the roadway by a concrete barrier and fencing. The Class I bike path would also have served as a pedestrian walkway. Farther along McKinley Avenue where the roadway section is no longer restricted by the undercrossings, the bike path would have been separated from the roadway by a 5-foot-wide buffer area and would no longer have required a barrier or fencing. Retaining walls would have been required underneath the undercrossings to have obtained the necessary width of McKinley Avenue without replacing the undercross structures. With implementation

of this alternative, approximately 24.7 acres of new right-of-way would have been required and eight existing residential units would have been relocated.

This alternative was deemed infeasible because the Type L-7 is no longer compatible with Caltrans standards to provide improved bicycle and pedestrian access at ramp intersections.

1.4.3.2 Modified Type L-7 Interchange (Longer Undercrossings) Alternative

This alternative would have developed an interchange similar to the one described above. In this scenario, the existing undercrossings would have been replaced with two, longer structures. This alternative would not have required an eastbound loop on-ramp in the southwest quadrant and the additional length of the new structures would have provided more room to widen McKinley Avenue. With the extra room, a left-turn lane would need to be added in the southbound direction to allow access to the diagonal eastbound ramps, and the remainder of the roadway would have been a six-lane section with a 16-foot-wide median. Since this alternative would not have been constrained by the existing undercrossing structures, 8-foot-wide shoulders would have been provided and pedestrian paths would have been placed along each side of McKinley Avenue.

A Class I bike path would have been developed along the east side of McKinley Avenue separated by a concrete barrier and fencing until free of the influence of the undercrossing structure where it would be separated by a 5-foot-wide buffer area. A 10-foot-wide sidewalk would have been proposed on the west side of McKinley Avenue as part of this alternative. The two new structures replacing the existing undercrossings would have been developed as two-span features about 197 feet long, requiring that concrete columns be placed within 16 feet of McKinley Avenue. These new structures would have been precast, prestressed concrete girders due to the lack of vertical clearance. Under this alternative, approximately 27.2 acres of new right-of-way would have been required and eight residential units would have been relocated.

This alternative was deemed infeasible because the Type L-7 is no longer compatible with Caltrans' standards to provide improved bicycle and pedestrian access at ramp intersections.

1.4.3.3 Single Combined Interchange (Yosemite Avenue and McKinley Avenue) Alternative

Consideration was given during the feasibility study of the project to providing a single combined interchange to meet standard interchange spacing. This option would have to be located at McKinley Avenue. Consideration was also given to locating a single interchange between Yosemite and McKinley avenues, though this location would violate the interchange spacing standard of the Caltrans Highway Design Manual 5th edition under Index 501.3 which states: “the minimum interchange spacing shall be...1.9 miles between freeway-to-freeway interchanges and local street interchanges.” Either of these options under this alternative would be required to handle traffic volumes from both the Yosemite Avenue interchange and the future McKinley Avenue interchange.

This alternative was deemed infeasible for the following reasons:

- Traffic volumes exceeded the capacity of a single interchange. Projected demand traffic volumes for the eastbound ramp exceeded 3,500 vehicles per hour, well above the level that can typically be served at a single interchange location.
- Additional local access roads would have required construction to connect a single interchange to both Yosemite Avenue and McKinley Avenue. These additional connections would be costly because they would need to include construction over or under the railroad lines. This local arterial system would need to be large enough to accommodate the traffic volumes associated with a single interchange location.
- Multiple mainline lanes on westbound State Route 120 would be needed to handle the concentration of traffic volumes to Interstate 5 versus the single auxiliary lane that would be needed on State Route 120 between the Yosemite Avenue interchange and McKinley Avenue interchange.

1.4.3.4 Alternate Location for Single-Lane Interchange Alternative

An alternate location for a single interchange between Yosemite and McKinley avenues was proposed as an alternative. However, this location would conflict with the Union Pacific Railroad because an active railroad line crosses under State Route 120 at this location. This alternate location is also the crest of the profile on State Route 120, which would require unusually long ramps to meet ramp grade requirements. Also, the interchange geometry would be unconventional due to the 45-degree skew of the railroad and would require at-grade railroad intersections at the interchange to provide a full access interchange.

This alternative was eliminated because of its site constraints and the reasons discussed above for the Single Combined Interchange (Yosemite Avenue and McKinley Avenue) Alternative.

1.4.3.5 Partial Cloverleaf Interchange (Type L-8) at McKinley Avenue Alternative

Under this alternative, a partial cloverleaf (Type L-8) interchange would be built at McKinley Avenue and State Route 120. This Type L-8 interchange would provide exit loop ramps in addition to the diamond-type on- and off-ramps. Two mixed-flow lanes and one high occupancy vehicle lane would be proposed for both entrance ramps in eastbound and westbound directions. Auxiliary lanes would be built on State Route 120 in the westbound direction between the Yosemite Avenue off-ramp and the McKinley Avenue on-ramp and in the eastbound direction between the on-ramp at McKinley Avenue and eastbound off-ramp at Airport Way.

The exit ramps for this alternative were proposed as single-lane ramps. Auxiliary lanes would not be required for any of the exit ramps. The existing McKinley Avenue undercrossing would be widened to accommodate two 12-foot-wide through lanes in the southbound and northbound directions, triple back-to-back left-turn lanes, and 8-foot-wide right shoulders. A 6-foot-wide sidewalk would be proposed only on the east side of McKinley Avenue.

This alternative was deemed infeasible because the eastbound ramps would conflict with the existing Union Pacific Railroad, forcing an upgrade to the Union Pacific Railroad facility or a mandatory design exception for the Union Pacific Railroad facility.

1.5 Permits and Approvals Needed

Table 1.1 shows the permits, reviews and approvals that would be required for project construction.

Table 1.1 Permits, Reviews and Approvals Needed for Project Construction

Agency	Permit/Approval	Status
Central Valley Regional Water Quality Control Board	Waste Discharge Waiver	Permitting would occur before construction.
State Office of Historic Preservation	State Historic Preservation Officer Concurrence of the Historic Property Survey Report	Anticipate submittal to State Historic Preservation Officer in spring 2014.
State Regional Water Quality Control Board	Section 402/National Pollutant Discharge Elimination System Permit.	Permitting would occur before construction.
San Joaquin Council of Governments	Append to the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan	Appending would occur before approval of project as a Condition of Approval.

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Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

This chapter explains the impacts that the project would have on the human, physical, and biological environments in the project area. It describes the existing environment that could be affected by the proposed project, potential impacts, and proposed avoidance, minimization, and/or mitigation measures. Any indirect (construction) impacts are included in the general impacts analysis and discussions that follow. Related regulatory information—the laws, regulations, and governmental and regulatory agencies involved for each impact area—is provided at the beginning of each section as needed.

As part of the preliminary environmental analysis done for the project, the following environmental issues were considered, but no adverse impacts were identified. Consequently, there is no further discussion regarding these issues in this document:

- Coastal Zone – The project site is in the San Joaquin Valley portion of California’s Central Valley. The nearest Local Coastal Program Certified Coastal Zone is in San Francisco County, about 65 miles west of the project site. There would be no adverse effect to Coastal Zones with implementation of the project (Preliminary Environmental Analysis Report December 11, 2007).
- Parks and Recreational Facilities – Parks and recreational facilities are located in the vicinity of the project site. None of these parks and recreational facilities have been identified as being protected under Section 4(f). During construction of the project the potential exits for construction workers to use nearby parks on lunch breaks; however, such an increase in park use would be temporary and nominal. The project is a transportation facility and would not include the development of new residential units (which would potentially increase the population in the area and increase the use of parks and recreational facilities in the project vicinity) nor would it include the development of new park and recreational facilities. There would be no adverse effects to park and recreational facilities due to project implementation.

- Wild and Scenic Rivers – The project site is not near a river that is designated as Wild or Scenic. The project would not adversely affect a designated Wild or Scenic River (Preliminary Environmental Analysis Report December 11, 2007).
- Timberland/Forestland – The project site is not in an area with land designated as forestland, timberland or timberland zoned Timberland Production. The project would not adversely affect timberland- or forestland-designated areas (Preliminary Environmental Analysis Report December 11, 2007).
- Hydrology and Floodplain – The project is not near any major drainage areas, including lakes or rivers. A Summary Floodplain Encroachment Report, which included a Location Hydraulic Study Form, was completed for the project on March 22, 2013 to assess hydrological and floodplain conditions at and around the project site. The investigation determined that the project was in an area designated as Zone X on the Federal Emergency Management Agency Flood Insurance Rate Map. Zone X is an area determined to be outside the 100- and 500-year floodplains. Also, the Hydrologic Assessment of Level of Risk was determined to be low. The project would not adversely affect local and regional hydrology and floodplains (Preliminary Environmental Analysis Report December 11, 2007 and Summary Floodplain Encroachment Report/Location Hydraulic Study Form October 22, 2013).

2.1 Human Environment

This section describes the impacts that the project could have on the human environment in the project area. It describes the existing environment that could be affected by the project and the potential adverse effects to existing and future land use; consistency with state, regional, and local plans and programs; and parks and recreational facilities.

2.1.1 Land Use

This section describes existing and proposed land uses in the project area. Information in this section was obtained from the 2023 City of Manteca General Plan Land Use Element.

Existing and Future Land Use

This section describes the existing and future land uses within and adjacent to the project boundary as well as whether changes in land use would occur as a result of project implementation. A description of the project was incorporated into the 2023 City of Manteca General Plan and the San Joaquin Council of Governments 2011

Regional Transportation Plan. The 2011 Regional Transportation Plan is based on development trends, land use-related goals, and specific policies in the City of Manteca.

2.1.1.1 Affected Environment

The City of Manteca adopted an updated General Plan on October 6, 2003, creating a land use blueprint for long-term growth through 2023. The City of Manteca 2023 General Plan was designed to achieve an adequate supply of land to accommodate the projected growth and build-out of the city for between 94,000 to 144,000 residents.

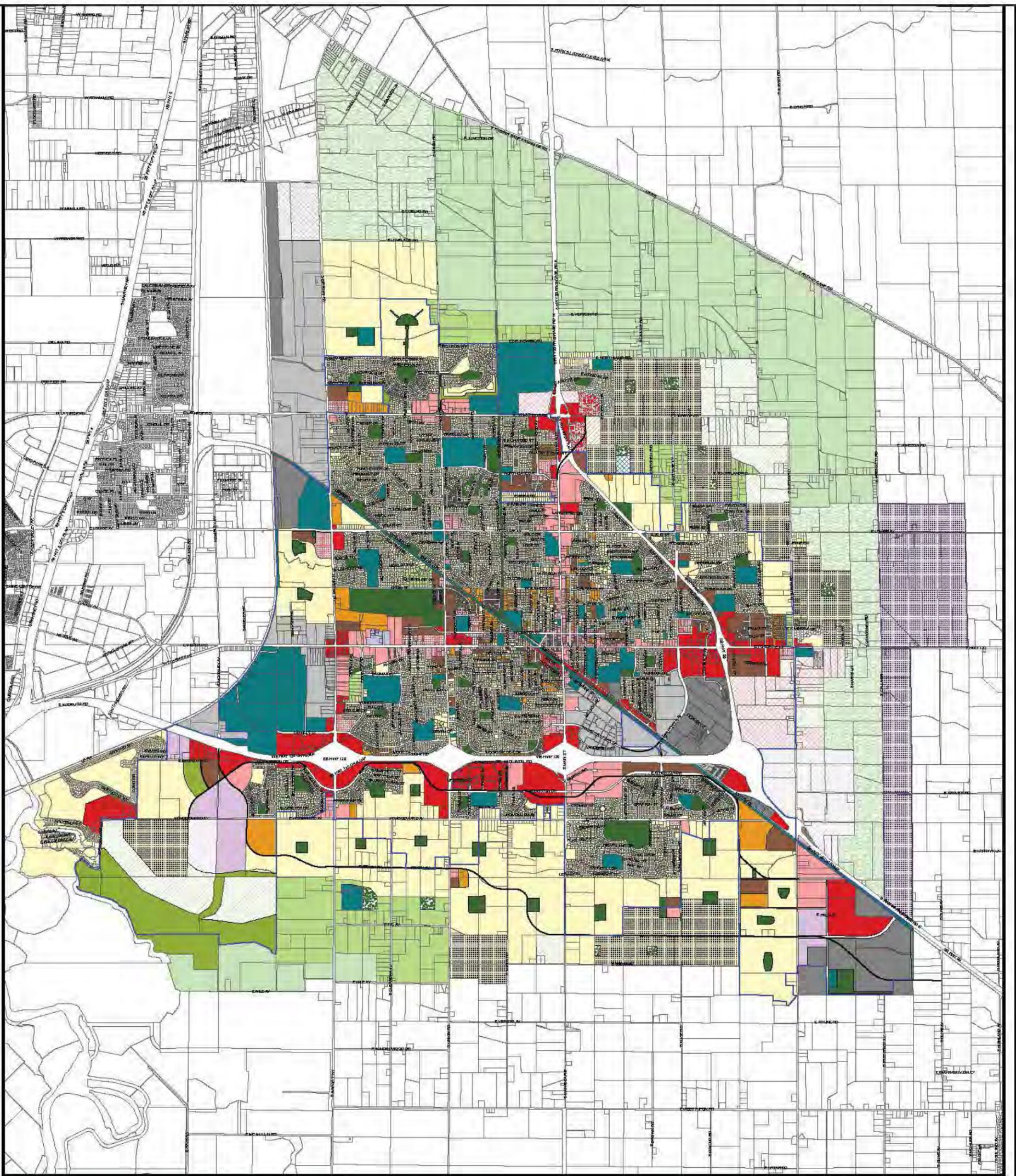
The 2023 Manteca General Plan reinforces and expands on strategies initially introduced in the previously adopted General Plan to maximize efficient use of land, transportation, environmental, economic, and social goals and policies. Figure 2.1 shows the land use designations within the boundary of the City of Manteca.

The project area consists of land designated as Business Professional; General Commercial; High-Density Residential; Public/Quasi-Public; and Light Industrial. The following provides a description of each land use within the boundary of the project site and the allowable uses.

Business Professional: The Business Professional land use is intended primarily for office and related uses with landscaping onsite. This category is specifically intended for the frontage along State Route 120 and along other major roads in the Central Business District to provide an attractive landscaped setting for one-, two-, and three-story office buildings. This designation provides for professional and administrative offices, medical and dental clinics, laboratories, financial institutions, public and quasi-public uses, and similar and compatible uses.

General Commercial: The General Commercial category provides for wholesale, warehousing, and heavy commercial uses, highway-oriented commercial retail, public and quasi-public uses, and similar and compatible uses. The designation is also intended to accommodate commercial lodging, commercial recreation, and public gathering facilities such as amphitheaters or public gardens.

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GENERAL PLAN

CITY OF MANTECA

- | | | | |
|---|--------------------------------|--|--|
| AG (Agriculture) | BIP (Business Industrial Park) | UR-AG (Urban Reserve-Agriculture) | UR-LI (Urban Reserve - Light Industrial) |
| NC (Neighborhood-Commercial) | BP (Business Professional) | UR-CMU (Urban Reserve-Commercial Mixed Use) | UR-P (Urban Reserve - Park) |
| CMU (Commercial Mixed Use) | LI (Light Industrial) | UR-GC (Urban Reserve-General Commercial) | UR-PQP (Urban Reserve - Public/Quasi-Public) |
| GC (General Commercial) | HI (Heavy Industrial) | UR-VLDR (Urban Reserve Very Low Density Res.) | Parcels |
| VLDR (Very Low Density Res. 0.5 to 2 du/ac) | OS (Open Space) | UR-LDR (Urban Reserve Low Density Residential) | City Limit |
| LDR (Low Density Res. 2.1 to 8 du/ac) | P (Park) | UR-MDR (Urban Reserve Medium Density Res.) | New Roads |
| MDR (Medium Density Res. 8.1 to 15 du/ac) | PQP (Public/Quasi-Public) | UR-HDR (Urban Reserve High Density Res.) | |
| HDR (High Density Res. 15.1 to 25 du/ac) | UR (Urban-Reserve) | UR-BIP (Urban Reserve - Business Ind. Park) | |

0 1,000 2,000 4,000 6,000 8,000 Feet



Data on this map is intended for general use and information purposes only. The City of Manteca does not warrant the accuracy, quality, or completeness of data or liability for any portion of the map. It is intended to replace a paper map. It may differ from primary recorded records.

CITY OF MANTECA
INFORMATION TECHNOLOGY DIVISION
GEOGRAPHIC INFORMATION SYSTEMS
1001 W. CENTER ST.
MANTECA, CA 95231

State Route 120/McKinley Avenue Interchange
Manteca, San Joaquin County, California
10-SJ-120-PM 0.0-3.0
EA 10-0H890



Figure 2.1: City of Manteca General Plan Land Use Map

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High-Density Residential: High-density residential uses include multi-family apartment-style housing. The multi-family dwelling sites typically have direct access to arterial streets. The sites have access to the pedestrian and bikeway network along street corridors and sit along the conceptual Route of a public transportation shuttle route. Most sites are near a neighborhood park or a neighborhood commercial center or larger commercial facility.

Public/Quasi-Public: The Public/Public-Quasi designation provides for government-owned facilities, public and private schools, institutions, civic uses and public utilities, and quasi-public uses such as hospitals and churches.

Light Industrial: The Light Industrial designation provides for industrial parks, warehouses, distribution centers, light manufacturing, public and quasi-public uses, and similar and compatible uses.

Table 2.1 identifies the related transportation and land use developments in the project area that would contribute to an increase in development trends in the area surrounding the project site. This Table includes reasonably foreseeable future and entitled transportation and land use projects that are within Caltrans District 10, City of Manteca, San Joaquin County, and the City of Lathrop that indicates the development trend in the area is increasing and would continue to increase into the future. It should be noted that many of the related land use projects located in the City of Manteca (as indicated in Table 2.1) and close to the proposed project have already been cleared through the environmental process and entitled; therefore, construction of these related land use development projects could begin at any time.

Table 2.1 Related Projects Contributing to Existing and Future Development Trends

Related Project	Location	Project Description	Status
Transportation Development-Related Projects			
Caltrans District 10-San Joaquin County Projects			
State Route 4 Crosstown Freeway Extension	State Route 4 between Fresno Avenue and Navy Drive	This project would extend the Crosstown Freeway Ramps from Fresno Avenue to Navy Drive; widen Navy Drive to a 4-lane facility (2 lanes in each direction) within the project limits; and make striping improvements along Charter Way.	Construction started summer 2013.

Table 2.1 Related Projects Contributing to Existing and Future Development Trends

Related Project	Location	Project Description	Status
Interstate 5 French Camp Road Interchange Reconstruction Sperry Road Extension Manthey Road Relocation Project	Stockton on Interstate 5/French Camp Road Interchange	The project includes three components: 1) reconstruction of the Interstate 5/French Camp Road interchange, 2) Extension of Sperry Road from Performance Drive to French Camp Road, and 3) relocation of Manthey Road.	Construction started in 2012. Completion estimated for December 2015.
Interstate 205/Lammers Road/Eleventh Street Interchange Project	Interstate 205 at Lammers Road/Eleventh Street Interchange Project	Construct improvements to the Interstate 205 interchange at or near Lammers Road and Eleventh Street, which would provide full access to both directions of Interstate 205, improve traffic operations, and accommodate forecasted traffic growth.	Still in planning phases.
City of Manteca			
Union/120 Interchange Improvements	City of Manteca	Widen the existing overcrossing to provide access to planned development south of State Route 120. Prepare Project Study Report, project report, environmental documents, plans, specifications and estimates. Working on final right-of-way acquisition and utility relocation issues.	Plans are 65 percent complete. Work with Caltrans and consultant to develop plan for completion of Plan, Specification and Estimate in early 2013.
Land Use Development-Related Projects			
City of Manteca			
CenterPoint (Northwest Airport Way Master Plan)- 1 st Phase	City of Manteca	1 st Phase Development-Site Plan Review Application for a 60,150-square foot industrial building.	Approved by Planning Commission on April 4, 2013.
Stadium Center	City of Manteca	The Stadium Center shopping center at Highway 120 and Airport Way continues to plan for final undeveloped pad sites. City purchased former Lowe's property at 1880 Daniels Drive on January 28, 2013 as a potential future South County Courthouse and Government Center.	Development has been ongoing since December 2010. No specific schedule for completion for undeveloped pad sites.
Union Crossing	City of Manteca	Proposed commercial center at the southwest quadrant of Union Road and the Highway 120 Bypass. Project would include approximately 47 acres with approximately eight major retailers and space and pads for smaller retailers.	February 22, 2010: Property officially annexed to the City. No specific construction schedule available.

Table 2.1 Related Projects Contributing to Existing and Future Development Trends

Related Project	Location	Project Description	Status
Yosemite Square	City of Manteca- Located east of Highway 99.	The project includes a General Plan Amendment, Rezone and Tentative Map for the development of approximately 144.3 acres into 17 lots for the future development of 761 residential units and up to 475,675 square feet of business industrial park uses, consistent with the proposed Master Plan.	March 2012: Master Plan approved by Council. No specific time frame is available for development of the project.
Dutra Estates Unit 5	City of Manteca Parcel 241-760-42 Approximately 0.36 mile to the southeast of the project site.	This land use project includes development of a single-family residential subdivision on 9 acres of land. The project includes development of 49 single-family residential units and associate infrastructure (internal circulation, water, sewer, electrical systems).	The application date was February 1, 2010, and approval of the Adopted Mitigated Negative Declaration occurred on November 2, 2010.
The Trails	City of Manteca on Parcels 241-260-05 and 241-240-02. Approximately 1 mile southwest of the project.	This project includes the development of 1,370 single-family residential units subdivision on 339 acres of land. The project would include development of associated infrastructure including internal circulation (roadways) and utilities (water, sewer, electrical systems).	The application date was March 9, 2009, and the Environmental Impact Report was certified on February 2, 2011.
Terra Ranch Apartments	City of Manteca Parcel 241-320-59 Approximately 0.68 mile southeast of project site.	This project includes development of a 200-unit apartment complex on 10 acres of land.	The application date was March 11, 2009, and the Environmental Impact Report was certified on June 21, 2011.
Terra Ranch Subdivision	City of Manteca Parcel 241-320-59 Approximately 0.68 mile southeast of project site.	This project includes the development of a 212-single-family-residential-unit subdivision on 65 acres of land.	The application date was March 11, 2009, and the Environmental Impact Report was certified on June 21, 2011.
Oakwood Trails at Tara Park	City of Manteca Parcels 241-260-02; 241-260-03; 241-260-07. Directly southwest of the project site.	This project will develop a 207-acre single- family subdivision on three land parcels. Development would include 578 single-family residential units as well as infrastructure supporting the subdivision (including residential streets and utilities).	The application date was October 31, 2013, and the Environmental Impact Report is currently under review for approval (as of December 2013).

Table 2.1 Related Projects Contributing to Existing and Future Development Trends

Related Project	Location	Project Description	Status
Sundance	City of Manteca. Includes Parcels 226-160-08; 226-160-09; 226-160-10; 226-160-11; 226-210-31 and partial 226-160-05. Approximately 0.66 mile southeast of the project site.	This project will develop 451 single-family residential units on approximately 110 acres of land. Additional development would include circulation and utility infrastructure.	Environmental Impact Report has been certified. Tentative map was approved on January 23, 2007. Tentative map is being revised to include lots that front to Woodward Avenue (as of December 2013).
Oleander Estates	City of Manteca Parcels 226-17-004; 226-170-05; 226-180-01; 226-180-02; 226-180-18; 226-180-07; 226-180-08; 226-180-15; 226-180-16; and 226-180-05. Approximately 0.93 miles southeast of the project site.	This project will develop 536 single-family residential (estate-style) units on approximately 112 acres of land. Additional development would include circulation and utility infrastructure.	Environmental Impact Report has been certified, and mitigation measures have been met to allow grading. Tentative map was approved on October 19, 2010 and has two phases of development with 218 lots under final map and close grading/construction commencement (as of December 2013).
Family Entertainment Zone	City of Manteca. Parcels 241-31-53; 241-31-44; 241-31-18; 241-31-32; 241-31-16; 241-30-48; 241-31-48; 241-30-62; 241-30-61. Located adjacent to the northeast portion of the project site.	The project includes land use changes on the identified APNs to a Master Plan land use designation involving approximately 187 acres. The Family Entertainment Zone and related Master plan includes development of public-serving visitor uses of a destination nature such as: public recreation facilities, tournament playfields, outdoor recreation, family entertainment uses, ancillary retail and dining uses and various infrastructure improvements.	Environmental Impact Report is currently under contract and being prepared (as of December 2013). Application submittal and approval has not been completed at this time (December 2013).

Table 2.1 Related Projects Contributing to Existing and Future Development Trends

Related Project	Location	Project Description	Status
San Joaquin County			
Oakwood Lake Shores	San Joaquin County. Located on a number of parcels. Directly west southwest of project site.	This project includes the development of a single-family residential subdivision. Development of 480 single-family high-end residential units would occur along with supporting infrastructure.	Environmental Impact Report has been certified. Construction has already started on a few lots.
Machado Estates	San Joaquin County. Location on Parcel 241-320-18 approximately 0.71 miles southeast of proposed project.	This project includes development of 558-single-family-residential-unit subdivision on 157 acres of land. Additional development would include circulation and utility infrastructure.	Subdivision map has not been approved, and the land area has not been annexed into the City of Manteca (as of December 2013). An Environmental Impact Report has been approved; however, the project is considered withdrawn at this time (December 2013) but could be developed in the near future.
Silva Estates (Blossom Grove)	San Joaquin County. Location on Parcels 224-022-01; 224-022-02; 224-022-03; 224-022-05; 224-022-06; 224-022-04. Approximately 1.6 miles southeast of project site.	The project would include the development of 88 single-family residential (estate style) units on approximately 24 acres of land. Additional development would include circulation and utility infrastructure.	Original Environmental Impact Report certified in 2007. A portion of the tentative map has been certified and first phase has met mitigation measure requirements and has been graded. Waiting for final map and subdivision agreement approval (as of December 2013).

Table 2.1 Related Projects Contributing to Existing and Future Development Trends

Related Project	Location	Project Description	Status
City of Lathrop¹			
Lathrop Gateway Business Specific Plan	City of Lathrop. Approximately 0.20 mile northwest and west of the project site. Multiple parcels.	Project consists of a request for City approval of the Specific Plan associated applications and the annexation of the 384-acre Specific Plan area into the City of Lathrop. The Land Use Plan proposes approximately 57 acres of commercial use, 168 acres of limited industrial use, 83 acres of service commercial uses, and the remaining 77 acres in roads and public facility sites.	Preparation of the Environmental Impact Report is currently underway (as of December 2013). Application submittal and approval have not been completed at this time (December 2013).
South Lathrop Specific Plan Distribution/Warehouse	City of Lathrop. Multiple parcels. Adjacent to the western side of the proposed project.	Project consists of a request for City approval of the South Lathrop Specific Plan, associated applications and annexation of the 315-acre Specific Plan into the City of Lathrop. The Land Use Plan proposes approximately 10 acres of commercial office uses, 222 acres of limited industrial uses, and the remaining 83 acres in open space, roads and public facility sites.	Notice of Preparation developed and submitted in January 2013. Environmental Impact Report is currently underway (as of December 2013).

Source: The related projects in this Table were gathered per the City of Manteca’s website; and Caltrans District 10 projects in San Joaquin County were obtained on Caltrans District 10 website (July 2013); and from staff at the City of Manteca. Notes: 1 Although these related projects are located in the City of Lathrop, they are located adjacent to the western portion of the proposed project site. Once these related projects are operational, motorists would most likely access these related projects via the new State Route 120/McKinley Avenue interchange (the proposed project).

The related projects shown in Table 2.1 are consistent with the existing and future development trends that would occur as the City of Manteca, City of Lathrop, and unincorporated portions of San Joaquin County buildout around the proposed Project site.

2.1.1.2 Environmental Consequences

Implementation of the project would not result in direct impacts to the designated General Plan land uses within the City of Manteca. Development of the project would require acquisition of portions of 28 parcels occupied by 18 single-family detached residential units and one commercial business. Acquisition would not affect surrounding land uses because the 2023 General Plan has already included the project as part of future planning for the City of Manteca.

The City of Manteca, San Joaquin County, City of Lathrop, and San Joaquin Council of Governments have incorporated the development of the proposed project in their land use plans/planning documents indicating that a new interchange along State Route 120 between Yosemite Avenue and Airport Way is needed to alleviate existing and future traffic congestion due to an increase in anticipated/planned development trends. Implementation of the proposed project is not anticipated to increase planned development trends in the City of Manteca, City of Lathrop, or unincorporated portions of San Joaquin County in the project site vicinity. Adverse effects to planned development trends would not occur due to project implementation and unplanned development would not occur in the City of Manteca, San Joaquin County, or City of Lathrop due to project implementation.

2.1.1.3 Avoidance, Minimization, and/or Mitigation Measures

Adverse effects to land uses and planned development trends in the City of Manteca would not occur; therefore, no avoidance, minimization, and/or mitigation measures would be required.

2.1.2 Consistency with State, Regional, and Local Plans

This section describes the consistency of the project with state, regional and local plans. The information in this section was obtained from the following programs and documents: 2013 Federal Transportation Improvement Program; San Joaquin County 2011 Regional Transportation Plan; San Joaquin Council of Governments 2009 Regional Expressway Study; and, the 2023 City of Manteca General Plan.

2.1.2.1 Affected Environment

The project is on State Route 120 at the McKinley Avenue undercrossing between the Yosemite Avenue/State Route 120 and Airport Way/State Route 120 interchanges, within the southwestern portion of the City of Manteca. State Route 120 begins at Interstate 5, in Lathrop, California, and ends at U.S. Highway 395 in Mono County. State Route 120 provides access from the Central Valley communities to Interstate 5, Interstate 205, and Interstate 580. The project is within the jurisdiction of the City of Manteca and within the jurisdiction of the San Joaquin Council of Governments 2011 Regional Transportation Plan. Because the project includes development of an interchange on a state highway and would receive federal funding, it is subject to Caltrans and Federal Highway Administration guidelines and policies.

2013 Federal Transportation Improvement Program: The program includes a listing of all transportation-related projects requiring federal funding or other

approval by the federal transportation agencies. The Federal Transportation Improvement Program also lists non-federal, regionally significant projects for information and air quality modeling purposes. Projects included in the program are consistent with the San Joaquin Council of Governments Regional Transportation Plan and are part of the area's overall strategy for providing mobility, congestion relief, and reduction of transportation-related air pollution in support of efforts to attain federal air quality standards for the region. The project is listed in the 2013 Federal Transportation Improvement Program.

San Joaquin County 2011 Regional Transportation Plan: The 2011 San Joaquin County Regional Transportation Plan is the San Joaquin County's 25-year "statement of priorities" for the future transportation system. The plan recognizes that success in developing the future transportation system depends on an ongoing, collaborative process with local jurisdictions, state and federal partners, and a wide range of public and private agencies and individuals that have a vested interest in San Joaquin County as a place to live, work, and do business. Development of the plan is a dynamic process that searches out the best ways to use the available resources to develop an effective, efficient, and balanced multi-modal transportation system in the county. The project is listed as a regionally significant project in the 2011 Regional Transportation Plan developed by San Joaquin Council of Governments.

The 2011 plan built on the goals, policies, objectives, and performance measures foundation of the 2007 Regional Transportation Plan to provide a simplified and clearly articulated vision of the future that emphasizes the fundamental values reflected in past San Joaquin County Regional Transportation Plans. At the same time, the 2011 plan addresses the current values and priorities articulated through public outreach efforts in 2009 and 2010, as well as by the voters in San Joaquin County through the renewal of the County's Measure K sales tax. The project is listed as Tier 1 in the San Joaquin County 2011 Regional Transportation Plan.

San Joaquin Council of Governments 2009 Regional Expressway Study: The San Joaquin Council of Governments 2009 Regional Expressway Study is intended to be a preliminary planning-level analysis. The intent of the study is to identify a system of expressway routes in San Joaquin County to improve connections between communities in the county, relieve congestion on freeways, and improve connectivity to adjacent counties in a cost-effective manner while supporting local land use plans. This study focuses on expressway links between San Joaquin County communities as well as to neighboring counties. These linkages should be compatible with existing

and planned expressway and arterial roadways within a community as well as planned freeway interchange improvements.

2023 City of Manteca General Plan: The 2023 City of Manteca General Plan was developed to provide a comprehensive long-term general plan for the physical development of the city. The General Plan’s objective for the Circulation Element is to address all aspects of transportation, including commuter and truck traffic, intra-city vehicle traffic, rail, buses, bicycles, and pedestrians. Circulation master planning has traditionally focused on automobiles and truck traffic by ensuring that the road system will be adequate to accommodate traffic demands. The project is listed in the City’s General Plan as a 2025 Assumed Roadway Improvement.

2.1.2.2 Environmental Consequences

The project has been identified as a future component of the circulation system for the City of Manteca. Table 2.2 provides an analysis on the project’s consistency to each of the above mentioned plans. It should be noted that the “San Joaquin Council of Governments 2013 Federal Transportation Improvement Program” and the “San Joaquin County 2011 Regional Transportation Plan” uses the same objectives. Additionally, the “San Joaquin Council of Governments 2009 Regional Expressway Study” does not contain objectives/policies and therefore is not analyzed in below in Table 2.2.

Table 2.2 Project Consistency with Applicable Plans

Policy/Objectives	Consistency Analysis
San Joaquin Council of Governments 2013 Federal Transportation Improvement Program and the San Joaquin County 2011 Regional Transportation Plan¹	
Objective A(1): Minimize environmental impacts and improve public health.	Consistent. An Initial Study/Environmental Assessment has been prepared for the project to determine in significant or adverse environmental impacts/effects would occur due to project implementation. Where significant impacts/adverse effects are expected to occur, avoidance, minimization, and/or mitigation measures would be implemented to reduce such impacts.
Objective A(2): Enhance the connection between land use and transportation choices.	Consistent. The City of Manteca currently has two access points along State Route 120, including State Route 120/Airport Way and State Route 120/Yosemite Avenue. Residents and people who work in the City use these two intersections along State Route 120 to access and depart Manteca. According to growth forecasts prepared by the City of Manteca and the San Joaquin Council of Governments the population in Manteca is expected to increase by 68.8 percent by 2023. The project would create a new access point for residents and workers to access the City of Manteca from State Route 120; thus enhancing the connection

Table 2.2 Project Consistency with Applicable Plans

Policy/Objectives	Consistency Analysis
	between land use and transportation choices in the City.
<p>Objective B(1): Improve regional roadway system performance.</p>	<p>Consistent. The level of service along State Route 120 and at nearby intersections has degraded over the years due to population increase in the City of Manteca, City of Lathrop and unincorporated San Joaquin County. Many of the intersections and roadway segments in the project area are operating below optimal standards and would continue to degrade as population in the area increase. The project would add a new intersection along State Route 120 at McKinley Avenue to improve the nearby intersection and roadway segment level of service as the population continues to increase to full-build out which is expected to occur in 2023. Project implementation would, therefore, improve the regional roadway system performance.</p>
<p>Objective B(2): Provide greater transportation opportunity, and expand choice.</p>	<p>Consistent. The City of Manteca is currently accessed via State Route 120 by two existing intersections, including: State Route 120/Yosemite Avenue and State Route 120/Airport Way. Implementation of the project would add another way for motorists to access the City of Manteca from State Route 120; thus, providing greater transportation opportunity and expand motorist's choices along State Route 120 in the City of Manteca.</p>
<p>Objective C(2): Encourage and support projects that increase safety and security.</p>	<p>Consistent. The purpose of the project is to improve existing traffic circulation and accommodate forecasted traffic demand on State Route 120 between Airport Way and Yosemite Avenue; accommodate planned growth in the City of Manteca; and, reduce congestions on local roads and local intersections in Manteca. The reduction of existing traffic and improvement of level of service ratings at local intersections and roadway segments would also indirectly increase the safety of the circulation system once the project is implemented. The project would also indirectly improve the safety of the circulation system by providing residents and people working in Manteca an alternative way to access State Route 120 and exit the City in the event of an emergency.</p>
<p>Objective D(1): Optimize existing transportation roadway system capacity.</p>	<p>Consistent. The existing level of service of local roadway segments and intersections are operating at below standard conditions. As the population of the City of Manteca and adjacent unincorporated San Joaquin County increases the circulation system along State Route 120 and adjacent local intersections/ roadway segments will continue to degrade in level of service ratings. Implementation of the project would improve the level of service and capacity of State Route 120 and adjacent Manteca intersections/roadway segments under existing conditions and future conditions.</p>

Table 2.2 Project Consistency with Applicable Plans

Policy/Objectives	Consistency Analysis
<p>Objective D(2): Support the continued maintenance and preservation of the existing transportation system.</p>	<p>Consistent. The project is needed to relieve existing traffic and congestion issues along State Route 120 and adjacent intersections/roadway segments in the City of Manteca. Project implementation would improve the circulation system along State Route 120 and nearby intersections/roadway segments as the population of Manteca increases to full build-out by 2023. Level of service ratings and capacity along State Route 120 and adjacent intersections/roadway segments would improve and would operate above standards with implementation of the project.</p>
<p>Objective E(1): Improve roadway access to key strategic economic centers.</p>	<p>Consistent. Motorists on State Route 120 currently access the City of Manteca via the State Route 120/Airport Way or State Route 120/Yosemite Avenue interchanges. State Route 120 between these two interchanges as well as these two interchanges are currently operating at degraded level of service ratings and at over-capacity conditions. As the population in the City of Manteca and surrounding areas increase the circulatory system in the project area will continue to degrade in level of service and capacity. Project implementation would provide another access point to the City of Manteca for motorists traveling along State Route 120; thus improving roadway access to key strategic economic centers.</p>
<p>Objective G(2): Support projects that maximize cost effectiveness.</p>	<p>Consistent. Through the project planning process a number alternatives to the project design were studied to determine the most cost effective interchange that would maximize and improve the circulation system along State Route 120 and local intersections/roadway segments. These alternatives were considered; however, they were not cost effective and did not improve the circulation system to the maximum effect as possible. The build alternative (the Type L-9 configuration) was chosen to be implemented due to the cost effectiveness of the design and because this configuration provided the best improvements to the circulation system along State Route 120 and local intersections/roadway segments.</p>
<p>2023 City of Manteca General Plan Circulation Element</p>	
<p>Policy C-P-1: The City shall strive to balance levels of service for all modes (vehicle, transit, bicycle, and pedestrian) to maintain a high level of access and mobility, while developing a complete and efficient circulation system. The impact of new development and land use proposals on level of service and accessibility for all modes should be considered in the review process.</p>	<p>Consistent. The circulation system along State Route 120 between Yosemite Avenue and Airport Way and on adjacent local intersections/roadway segments has been degrading over the past few years due to rapid population growth in the City of Manteca. Existing level of service ratings are below City of Manteca and Caltrans standards on roadway segments and intersections in the vicinity of the project site. The City of Manteca, through its General Plan process, has indicated that a 68.8 percent increase in population is expected to occur within the City, between now and 2023. Without improvements to the existing circulation system level of service and capacity ratings will continue to degrade along State Route 120 between Yosemite Avenue and Airport Way and on local roadway segments and intersections adjacent to this facility. Project implementation would offer a third access point to the City of</p>

Table 2.2 Project Consistency with Applicable Plans

Policy/Objectives	Consistency Analysis
	Manteca for motorists traveling on State Route 120 and would also improve the level of service rating on State Route 120 between Yosemite Avenue and Airport Way and on adjacent local roadway segments and intersections. Additionally improvements to McKinley Avenue due to project implementation would include the development of a Class I bike lane/pedestrian walkway that would meet the requirements of the Manteca Bicycle Master Plan.
<p>Policy C-P-2: To the extent feasible, the City shall strive for a vehicular level of service of D or better at all streets and intersections, except in the Downtown area where right-of-way is limited, pedestrian, bicycle, and transit mobility are most important and vehicular levels of service is not a consideration. While vehicular level of service is not a consideration in the Downtown area, traffic studies shall disclose whether any proposed transportation or land use action will substantially increase traffic at intersections and roadways within this area of the City.</p>	<p>Consistent. Under existing conditions all study intersections operate at an overall level of service D or better rating; however, level of service E occurs during the PM peak hour at the eastbound State Route ramp diverges at Yosemite Avenue and Airport way. Under 2020 without Project and 2040 without Project conditions continued traffic growth in the City would result in degraded operations at the majority of the study intersections and freeway facility, with several locations operating at level of service F during both peak hours. Project implementation would improve the level of service at most of the study intersections and freeway facilities to D or better; however, some intersections/freeway facilities would continue to operate at below level of service D rating with or without project implementation under 2020 and 2040 conditions. The nearest intersections and freeway facilities to the project site would have improvements in levels of service.</p>
<p>Policy C-P-4: Streets shall be dedicated, widened, extended, and constructed according to street cross-section diagrams established in the City Standard Plans.</p>	<p>Consistent. The improvements to McKinley Avenue and development of the new State Route 120/McKinley Avenue interchange would be consistent with City of Manteca and Caltrans design standards.</p>
<p>Policy C-P-5: Major circulation improvements shall be completed as abutting lands develop or redevelop, with dedication of right-of-way and construction of improvements, or participation in construction of such improvements required as a condition of approval.</p>	<p>Consistent. The City of Manteca, through the General Plan process and Land Use update, has indicated that the population is expected to increase by 68.8 percent by 2023. Many of the parcels surrounding the project site have already been entitled and development of new residential uses are expected to commence as early as 2018; substantially increasing the population of the City of Manteca. Project implementation would provide for a new access point to the City of Manteca for motorists along State Route 120 and would improve the level of service of the circulatory system in the project vicinity. Per the City of Manteca's development plans, the project is needed to alleviate future congestion along State Route 120 and local roadway segments/intersections due to planned future growth.</p>
<p>Policy C-P-7: The street system shall be expanded in a contiguous and concentric manner to serve new development areas and to provide improved circulation for existing residents.</p>	<p>Consistent. The project will provide for a new access point to the City of Manteca for motorists traveling along State Route 120. The project would also improve the level of service on State Route 120 and for local roadway segments/intersections that are expected to be adversely affected due to planned growth in the City of Manteca. The project would improve the circulation for existing and new residents as the City reaches its build-out year in 2023.</p>

Table 2.2 Project Consistency with Applicable Plans

Policy/Objectives	Consistency Analysis
<p>Policy C-P-8: Street improvements will be designed to provide multiple, direct and convenient Route for all modes.</p>	<p>Consistent. The project includes improvements to McKinley Avenue and a new State Route 120/McKinley Avenue interchange. The project would be designed to provide motorists direct access to State Route 120 from McKinley Avenue in the City of Manteca. Improvements to McKinley would also include a Class I bike lane/pedestrian walkway that would be designed to be consistent with standards of the Manteca Bicycle Master Plan. Such improvements would provide multiple direct and convenient routes for motorists, bicyclists, and pedestrians.</p>
<p>Policy C-P-17: Residential subdivisions along arterials and freeways shall be buffered by a noise attenuation measure (sound wall, berm, greenbelt, etc.) as determined by a noise study. Any noise attenuation measure should be designed in a way that it does not discourage pedestrian or bicycle travel by creating barriers between neighborhoods.</p>	<p>Consistent. A thorough Noise analysis was completed to determine if existing residential uses near the project would be affected by increases in noise during construction and post-construction conditions. Analysis determined that noise at the residential units would remain below noise level standards during construction and post-construction activities. Analysis also determined that attenuation devices (such as noise barriers, noise walls, berms, greenbelts) would not need to be implemented in the project design as noise increases at residential units due to project implementation would remain below standards.</p>
<p>Policy C-P-19: The City shall coordinate with neighboring jurisdictions, including Caltrans, San Joaquin Council of Governments, San Joaquin County, the City of Lathrop, and the City of Ripon to pursue funding for the following regional facilities:</p> <ul style="list-style-type: none"> • A new interchange at McKinley Avenue and State Route 120 • A new interchange at Austin Road/ McKinley Avenue and State Route 99 • A new interchange on State Route 99 between Lathrop Road and French Camp Road; • An easterly extension of the State Route 120 freeway towards Oakdale; and, • Regional bicycle lanes and bicycle paths. 	<p>Consistent. The project includes the development of a new State Route 120/McKinley Avenue interchange and improvements to McKinley Avenue. The California Department of Transportation, in cooperation with the City of Manteca proposes to implement the project. Coordination among multiple jurisdictions would occur in order to implement the project.</p>

Table 2.2 Project Consistency with Applicable Plans

Policy/Objectives	Consistency Analysis
<p>C-P-22: The City shall encourage the development of landscape separated sidewalks along roadways (particularly arterials and non-residential streets) when feasible to discourage pedestrian/vehicle conflicts and be consistent with complete streets concepts.</p>	<p>Consistent. McKinley Avenue would be improved to accommodate the development of the new State Route 120/McKinley Avenue interchange. Improvements would include development of seven lanes passing under the existing undercrossing structures composed of two through lanes in each direction (northbound and southbound – a total of four through lanes), two right-turn lanes in the northbound direction and one-right turn lane in the southbound direction. The design of the improvements along McKinley Avenue would include landscaping that would be consistent with policies of the City of Manteca.</p>
<p>C-P-29: Through regular updates to the City’s Bicycle Master Plan, the City shall establish a safe and convenient network of identified bicycle routes connecting residential areas with recreation, shopping, and employment areas within the City. The City shall also strive to develop connections with existing and planned regional routes shown in the San Joaquin County Bicycle Master Plan.</p>	<p>Consistent. The project would develop a 10-foot wide Class I bike lane/pedestrian walkway on the east side of McKinley Avenue. This bike lane would be consistent with and comply with the requirements of the Manteca Bicycle Master Plan.</p>
<p>C-P-36: City shall strive to provide a sidewalk system that serves all members of the community and meets the latest guidelines related to the Americans with Disabilities Act (ADA).</p>	<p>Consistent. The project would improve McKinley Avenue which would include development of a Class I bike lane/pedestrian walkway. The pedestrian walkway would be designed to meet City of Manteca and Americans with Disabilities Act standards.</p>
<p>C-P-37: All new sidewalks, walkways, and intersection crosswalks shall be consistent with the requirements of the ADA.</p>	<p>Consistent. The project would improve McKinley Avenue which would include development of a Class I bike lane/pedestrian walkway. The pedestrian walkway would be designed to meet Americans with Disabilities Act standards.</p>

Notes: Please note that only objectives/policies that are relevant to the project have been included in this analysis. The “San Joaquin Council of Governments Regional Expressway Study” did not have objectives/policies in the document to analyze project consistency with the study; however, the project is discussed in this document as being part of the regional expressway system.

¹ The San Joaquin Council of Governments 2013 Federal Transportation Improvement Program uses the same objectives as the 2011 Regional Transportation Plan.

ADA = Americans with Disabilities Act
Caltrans = California Department of Transportation

Table 2.2 provides an analysis on the project consistency compared with objectives/policies from the “2013 Federal Transportation Improvement Program”, the “San Joaquin County 2011 Regional Transportation Plan” and the “2023 City of Manteca General Plan-Circulation Element.” The objectives and policies that have been presented above area relevant to the project. The analysis indicates that the project is consistent with these three plans to relieve future congestion along State Route 120, provide an additional access point for motorists to the City of Manteca, and

accommodate planned growth that would occur up to the build-out of the City of Manteca in 2023.

The “San Joaquin Council of Governments 2009 Regional Expressway Study” was prepared to be a preliminary planning-level study to identify a system of expressway routes in San Joaquin County to improve connections between communities in the county, relieve congestion on freeways, and improve connectivity to adjacent counties in a cost-effective manner while supporting local land use plans. This document has identified the project as a connection for the McKinley Expressway that is proposed to be developed. The McKinley Expressway would travel south along McKinley Avenue from a new interchange at State Route 120 (the proposed project) to Peach Road, then east to Union Road, then southeast along a new alignment to Manteca Road at Sedan Avenue. The McKinley Expressway would then continue along Sedan Avenue to Austin Road, and northeast along a new alignment to a new interchange at State Route 99. Without implementation of the project this expressway would not be able to be developed. The proposed project is consistent with the future circulation pattern in the City of Manteca and unincorporated San Joaquin County as discussed in the “San Joaquin Council of Governments 2009 Regional Expressway Study.”

Development of the project has been included in future plans for the City of Manteca and would support the population increase at the time of the city’s build-out. The project would also be consistent with proposed future land uses in the area. The project would, overall, improve the circulation system for the City of Manteca and would be consistent in reducing level of service ratings for surrounding intersections, roadway segments, and segments of State Route 120.

2.1.2.3 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures would be required because the project would not adversely affect consistency with state, regional, and local plans.

2.1.3 Growth

This section discusses the potential for the project to cause growth on both a regional and local level. Information in this section was obtained from the Manteca General Plan 2023 Policy Document and the Manteca General Plan 2023 Draft Environmental Impact Report (as listed in Appendix E) approved on October 6, 2003.

2.1.3.1 Regulatory Setting

The Council on Environmental Quality regulations, which established the steps necessary to comply with the National Environmental Policy Act of 1969, require evaluation of the potential environmental effects of all proposed federal activities and programs. This provision includes a requirement to examine indirect consequences that may occur in areas beyond the immediate influence of a proposed project (action) and at some time in the future. The Council on Environmental Quality regulations (40 Code of Federal Regulations 1508.8) refer to these consequences as indirect impacts. Indirect impacts may include changes in land use, economic vitality, and population density, which are all elements of growth.

The California Environmental Quality Act also requires the analysis of a project's potential to induce growth. The California Environmental Quality Act guidelines (Section 15126.2[d]) require that environmental documents "...discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment..."

2.1.3.2 Affected Environment

The City of Manteca in the San Joaquin Valley is the second most populated city within San Joaquin County. The population growth of Manteca has increased significantly in recent years as housing prices have remained relatively affordable in the region compared to the regional housing market in the San Francisco Bay Area. The population of Manteca in 1990 was 40,773 residents, and the total population in 2000 was 49,258 residents, a 20.8 percent net increase over a 10-year period. According to the 2010 U.S. Census Bureau, the current estimated population of Manteca is 67,096, a 36.2 percent net increase since 2000 and a 64.5 percent increase since 1990.

Manteca developed and certified the Manteca General Plan 2023 on October 6, 2003 to update and replace the City's General Plan 1988 growth vision. According to the Manteca General Plan 2023, population growth within the city and the city's sphere of influence is projected to continue for the near future, primarily driven by continued demand for relatively affordable housing and the quality of life in Manteca.

Full build-out of the city would be able to accommodate a population growth of up to 113,254 residents by 2023, based on a 2.7 percent growth rate. The growth rate estimate and final build-out population estimate are growth forecast tools used by the

city to determine future population numbers based on historical and projected growth and planned future land uses.

As growth occurs in Manteca under the General Plan 2023, the city would have to update and develop new portions of the existing roadway and highway circulation system. State Route 120 runs through the southern portion of the city and provides regional access to people entering and exiting the city. The proposed project would be located between two existing heavily used interchanges (refer to the discussion of level of service in Subsection 2.1.9): Yosemite Avenue/State Route 120 and Airport Way/State Route 120 at the undercrossing of McKinley Avenue. The Manteca General Plan 2023 identifies the development of the project as needed to accommodate future growth within the city boundary from existing entitled and future projects. The City of Manteca and unincorporated San Joaquin County have a number of entitled residential projects near the project that are expected to start construction before the operational year of the project (see Table 2.3).

Table 2.3 Entitled Residential Projects near the Project

Related Project	Location	Project Description	Status
City of Manteca			
Dutra Estates Unit 5	City of Manteca Parcel 241-760-42. Approximately 0.36 mile to southeast of the project site.	This land use project includes development of a single-family residential subdivision on 9 acres of land. The project includes development of 49 single-family residential units and associate infrastructure (internal circulation, water, sewer, electrical systems).	The application date was February 1, 2010, and approval of the Adopted Mitigated Negative Declaration occurred on November 2, 2010.
The Trails	City of Manteca Parcels 241-260-05 and 241-240-02. Approximately 1 mile southwest of the project.	This project includes the development of 1,370 single-family residential units subdivision on 339 acres of land. The project would include development of associated infrastructure including internal circulation (roadways) and utilities (water, sewer, electrical systems).	The application date was March 9, 2009, and the Environmental Impact Report was certified on February 2, 2011.
Terra Ranch Apartments	City of Manteca Parcel 241-320-59. About 0.68 mile southeast of project site.	This project includes the development of a 200-unit apartment complex on 10 acres of land.	The application date was March 11, 2009, and the Environmental Impact Report was certified on June 21, 2011.

Table 2.3 Entitled Residential Projects near the Project

Related Project	Location	Project Description	Status
Terra Ranch Subdivision	City of Manteca Parcel 241-320-59 About 0.68 mile southeast of project site.	This project will develop a 212-single-family residential unit subdivision on 65 acres of land.	The application date was March 11, 2009, and the Environmental Impact Report was certified on June 21, 2011.
Oakwood Trails at Tara Park	City of Manteca Parcels 241-260-02; 241-260-03; 241-260-07. Directly southwest of the project site.	This project will develop a 207-acre single-family subdivision on three land parcels and include 578 single-family residential units and infrastructure supporting the subdivision (including residential streets and utilities).	The application date was October 31, 2013, and the Environmental Impact Report is currently under review for approval (as of December 2013).
Sundance	City of Manteca. Includes Parcels 226-160-08; 226-160-09; 226-160-10; 226-160-11; 226-210-31 and partial 226-160-05. Approximately 0.66 mile southeast of the project site.	This project will develop 451 single-family residential units on about 110 acres of land. Additional development would include circulation and utility infrastructure.	Environmental Impact Report has been certified. Tentative map was approved on January 23, 2007. Tentative map is being revised to include lots that front Woodward Avenue (as of December 2013).
Oleander Estates	City of Manteca Parcels 226-17-004; 226-170-05; 226-180-01; 226-180-02; 226-180-18; 226-180-07; 226-180-08; 226-180-15; 226-180-16; and 226-180-05. Approximately 0.93 mile southeast of the project site.	This project will develop 536 single-family residential (estate style) units on approximately 112 acres of land. Additional development would include circulation and utility infrastructure.	Environmental Impact Report has been certified, and mitigation measures have been met to allow grading. Tentative map was approved on October 19, 2010 and has two phases of development with 218 lots under final map and close grading/ construction start (as of December 2013).
San Joaquin County			
Oakwood Lake Shores	San Joaquin County. Sits on a number of parcels. Directly west southwest of project site.	This project includes the development of a single-family residential subdivision. Development of 480 single-family high-end residential units would occur along with supporting infrastructure.	Environmental Impact Report has been certified. Construction has already started on a few lots.
Machado Estates	San Joaquin County. Location on Parcel 241-320-18 approximately 0.71 mile southeast of proposed project.	This project includes the development of 558 single-family residential unit subdivision on 157 acres of land. Additional development would include circulation and utility infrastructure.	Subdivision map has not been approved, and the land area has not been annexed into the City of Manteca (as of December 2013). An Environmental Impact Report has been approved; the project is considered withdrawn at this time (December 2013), but could be developed in the future.

Table 2.3 Entitled Residential Projects near the Project

Related Project	Location	Project Description	Status
Silva Estates (Blossom Grove)	San Joaquin County. Location on Parcels 224-022-01; 224-022-02; 224-022-03; 224-022-05; 224-022-06; 224-022-04. Approximately 1.6 miles southeast of project site.	The project would include the development of 88 single-family residential (estate-style) units on about 24 acres of land. Additional development would include circulation and utility infrastructure.	Original Environmental Impact Report certified in 2007. A portion of the tentative map has been certified, and first phase has met mitigation measure requirements and has been graded. Waiting for final map and subdivision agreement approval (as of December 2013).

Source: Fehr and Peers, *Revised Final Traffic Report State Route 120/McKinley Avenue Interchange Project Approval and Environmental Document (PA/ED)*, Figure 6 Planned Development in Vicinity of State Route 120/McKinley Avenue Interchange, April 25, 2013.

Notes: Projects provided in this table are related land development residential projects that, as of December 2013, are already entitled and construction is expected to start before development of the proposed project. Additional related projects associated with transportation or commercial/industrial uses that are not currently entitled are listed in the Section 2.5 for analysis.

Once the related projects identified above are built out, they are expected to increase the population of Manteca. The increase in population near the project would result in an increase in the use of local roadways and State Route 120 leading to a degradation of level of service ratings. The project would alleviate congestion and improve level of service ratings along State Route 120 segments, local roadway intersections, and at the interchanges of Yosemite Avenue/State Route 120 and Airport Way/State Route 120.

The proposed Project would indirectly affect growth within the City by providing an additional access point to Manteca and alleviating adverse effects to circulation associated with future planned growth within the City.

2.1.3.3 Environmental Consequences

A “first-cut screening” was developed to help determine the likely growth-inducing potential of the project and whether further analysis was necessary. Below is a discussion of each factor to determine if further analysis regarding project growth inducement analysis is warranted:

- **Accessibility:** The project consists of the development of a new interchange at the McKinley Avenue undercrossing on State Route 120, State Route 120 improvements between the Yosemite Avenue and Airport Way interchanges, and McKinley Avenue improvements. Currently, motorists traveling west- and eastbound along State Route 120 can access the City of Manteca by exiting at the Yosemite Avenue/State Route 120 and Airport Way/State Route 120

interchanges. These two interchanges are currently overused and are rated below level of service standards during morning and afternoon peak hours. The project would add a third option to access Manteca along this portion of State Route 120 and would alleviate the existing and future congestion and improve the level of service ratings at the Yosemite Avenue/State Route 120 and Airport Way/State Route 120 interchanges.

- **Project Type, Location, and Growth Pressure:** The project would build a Type L-9 interchange. The Type L-9 interchange would provide full access to McKinley Avenue with on- and off-ramps. The project lies in the southwest portion of the City of Manteca, on State Route 120, between the Yosemite Avenue/State Route 120 and Airport Way/State Route 120 interchanges. The Manteca General Plan 2023 identified the project as needed to provide additional access to the city from State Route 120 due to existing entitled projects and projected future growth. The project is being developed to meet existing and projected future growth demand per the Manteca General Plan 2023 and is not expected to independently induce or affect growth in the city.
- **Foreseeable Growth:** The Manteca General Plan 2023 indicates that the city, at full build-out, could accommodate a population of 113,254 residents. The estimated build-out population would be a 68.8 percent increase in population compared to the estimated existing population of 67,096. The Manteca General Plan Environmental Impact Report provides an extensive analysis on the growth that is expected to occur within the city up to build-out conditions. The Environmental Impact Report indicates that adverse effects associated with growth and population increase within the city are “significant and unavoidable” and further indicates: “There are no specific mitigation measures that will reduce or eliminate the impact of increased population on Manteca and the surrounding area. However, monitoring and regulating growth to a responsible level will maintain the integrity of the community.” One way Manteca is implementing such monitoring and regulation of growth is by identifying improvements or new projects to its circulation system to accommodate future growth. The proposed project has been identified by the city (and by the San Joaquin Council of Governments in their 2011 Regional Transportation Plan) as a project that would need to be developed on State Route 120 to relieve existing and future circulation congestion; improve City access from a regional perspective; provide a new entrance and exit for the city; and improve level of service ratings at intersections and roadway/highway segments within the boundary of the city. The project

would not independently induce growth, but would be beneficial to future growth within the city and surrounding area for the reasons listed above.

The Caltrans *Guidance for Preparers of Growth-related, Indirect Impact Analysis* indicates that, unless transportation projects open up new land areas that had not been previously accessible, on a regional basis, the impacts to convert land uses that promote growth are generally minor. The project sits in an area of Manteca that has been served by roads, highways and other circulation amenities for many years. However, the level of service at the existing intersections, interchanges and segments along State Route 120 are operating below level of service standards and will continue to as planned growth in the city occurs. Implementation of the project would not induce new development by providing access to areas that are previously undeveloped and would improve the levels of service at different points within the city.

The proposed Project would indirectly affect growth within the City by providing an additional access point to Manteca and alleviating adverse effects to circulation associated with future planned growth within the City.

- **Growth and its Impact on Resources:** The project would not facilitate new development and so would not induce growth in the city or surrounding area. It would be developed to support and accommodate the planned growth in the city and to provide a new entrance and exit point to the city from motorists traveling along State Route 120. This document has provided analysis on the impact of resources that could potentially occur due to project implementation. When analysis concludes that there are potential adverse effects on resources due to project development, avoidance, minimization, and mitigation measures have been provided to reduce such effects. Implementation of these measures would ensure that any potential adverse effects on resources within the city and surrounding area due to project implementation would be reduced.

The Manteca General Plan 2023 has indicated that growth would occur within the city regardless of project implementation. The project is being proposed to help alleviate adverse effects associated with future growth in Manteca and would be beneficial to the city. Growth-related adverse effects are further analyzed in a “second-cut screening” in the following discussion.

Step 1: How the “right size” for the analysis was determined and what the “right size” was.

Based on a review of the project, methods were selected to analyze growth in the city using traffic and land use modeling from the Manteca General Plan 2023, the San

Joaquin Council of Governments 2011 Regional Transportation Plan, the San Joaquin Council of Governments 2014 Regional Transportation Improvement Program, and the Manteca General Plan 2023 Environmental Impact Report. The project has been identified in each of these documents as a project that would need to be implemented in the near future to alleviate traffic conditions along State Route 120 in the city and provide additional access to Manteca.

Step 2: Identify potential growth for each alternative

Using the data sources and tools identified in Step 1, a future development scenario for a no-build alternative and preferred build alternative for the existing and foreseeable land uses and development patterns are described below:

Future Development Scenario, No-Build Alternative

The no-build scenario would result in degraded operations at most local roadway intersections and State Route 120 intersections, with several spots operating at a level of service F during both morning and afternoon peak hour conditions. Higher traffic volumes at the State Route 120/Yosemite Avenue and State Route 120/Airport Way interchanges without the project in place would result in additional queuing at these locations by 2020. Operation of the freeway segments along State Route 120 is also expected to degrade by 2020 because of the increase in population and growth occurring within the city. The forecasted increase in traffic volume along the corridor would result in travel demand exceeding the existing design capacity of State Route 120, and most segments would degrade to a level of service F rating during the morning and afternoon peak hours. Worse operating conditions would occur during the afternoon peak hour compared to the morning peak hour by 2020 without implementation of the project.

As of December 2013, the city was already experiencing growth north and of the State Route 120/McKinley Avenue overcrossing between the State Route 120/Yosemite Avenue and State Route 120/Airport Way interchanges. A number of residential land development projects in the area have already gone through environmental review, are entitled, and are expected to start construction before 2018. As further described in Subsection 2.1.6, 10 residential use developments are entitled, all of which include the development of about 4,993 residential units. Based on the existing estimated California Department of Finance 3.12 persons per household ratio for Manteca, a total of 15,579 residents may potentially be added to the south and north of the State Route 120 corridor due to development of these entitled-related projects. To accommodate this development,

improvements to State Route 120 would be needed. Therefore, with implementation of the no-build alternative, the State Route 120 corridor segments and existing interchanges and city street segments and intersections would degrade in level of service queuing and general flow conditions.

Future Development Scenario, Build Alternative

The Manteca General Plan 2023 and the San Joaquin Council of Governments 2011 Regional Transportation Plan have identified the need for the project to reduce planned growth effects in Manteca. The build alternative would improve local access to State Route 120, relieving congestion on local roads in the area and accommodating forecasted traffic and population increases from planned growth in the city. Implementation of the project would improve the levels of service at nearby intersections by 2020 during morning and afternoon peak hour conditions from level of service F (without project implementation) to level of service E. The intersections of State Route 120 Westbound Ramps/Union Road would improve to a level of service A rating during morning peak hours; and, the McKinley Avenue/Atherton Drive intersection would improve to level of service C ratings during morning and afternoon peak hours compared to the estimated level of service in 2020 if the project is not developed. Implementation of the project under 2040 conditions would result in substantial beneficial improvements in the level of service on State Route 120 when compared to 2040 conditions if the project is not developed. Beneficial improvements would include:

- The eastbound State Route merge at Airport Way segment would improve to level of service E from F during afternoon peak hours because the project would reduce on-ramp vehicle volumes from 1,840 to 1,070 afternoon peak hour vehicles; and,
- The eastbound State Route 120 diverge at Union Road segment would improve to level of service C from F during peak hour conditions. Implementation of the project would reduce off-ramp volumes from 1,440 to 1,280 afternoon peak hour vehicle, and through traffic on eastbound State Route 120 would be reduced by 500 vehicles.

Overall, expected growth in the city would require the use of State Route 120 and surrounding roadways, resulting in adverse level of service effects for local interchanges and freeway segments. However, implementation of the project would shift traffic volumes away from certain adjacent interchanges and freeway segments, which would result in beneficial level of service to the State Route 120 corridor. The project has been included in the growth forecast presented in the Manteca General

Plan 2023 as a way to regulate the planned growth in the city. As discussed above and analyzed in Subsection 2.1.9, if the project is not implemented, circulation conditions would continue to degrade along State Route 120 and local roadways within Manteca.

Step 3: Assess the growth-related effects of each alternative on resources of concern

The Manteca General Plan 2023 and Manteca General Plan Environmental Impact Report analyze conditions and impacts to resources per the expected build-out of the city. Growth-induced impacts on resources would occur with implementation of the no-build alternative since the Manteca General Plan 2023 growth forecast includes development of the project as a way to monitor and regulate planned growth in the city. The General Plan Environmental Impact report acknowledges that future growth will occur and that there are no specific mitigation measures available that would reduce or eliminate the impact of increased population on Manteca and the surrounding area. However, monitoring and regulating growth to a responsible level would maintain the integrity of the community. To help in monitoring and regulating planned growth, the city has identified circulation projects that would need to be developed. Implementation of the no-build alternative would not satisfy the city's goal of regulating future growth to a responsible level.

2.1.3.4 Avoidance, Minimization, and/or Mitigation Measures

The project would not result in adverse effects on growth in the city or surrounding area; it would result in beneficial effects on growth. Project implementation would reduce congestion on State Route 120 and provide a new entry and exit point to the city. Therefore, no avoidance, minimization and/or mitigation measures would be required for project implementation.

2.1.4 Farmlands

The following section provides analysis on possible adverse effects to farmland resulting from implementation of the project. Information in this section was gathered from the U.S. Department of Agriculture Natural Resource Conservation Service and the California Department of Conservation Farmland Mapping and Monitoring Program and Williamson Act Program.

2.1.4.1 Regulatory Setting

The National Environmental Policy Act and the Farmland Protection Policy Act (7 U.S. Code 4201-4209; and its regulations, Code of Federal Regulations Part 658) require federal agencies, such as the Federal Highway Administration, to coordinate

with the Natural Resources Conservation Service if their activities may irreversibly convert farmland (directly or indirectly) to nonagricultural use. For purposes of the Farmland Protection and Policy Act, farmland includes prime farmland, unique farmland, and land of statewide or local importance.

The California Environmental Quality Act requires the review of projects that would convert Williamson Act contract land to non-agricultural uses. The main purposes of the Williamson Act are to preserve agricultural land and encourage open space preservation and efficient urban growth. The Williamson Act provides incentives to landowners through reduced property taxes to discourage the early conversion of agricultural and open space lands to other uses.

2.1.4.2 Affected Environment ***Important Farmland***

The U.S. Department of Agriculture Farmland Conversion Impact Rating Form AD-1006 was completed and is provided in the *Draft Farmland Conversion Assessment* (June 2014 – as listed in Appendix E). The project site is in the southwestern portion of the City of Manteca in San Joaquin County. San Joaquin County is in the Central Valley of California and is one of the world’s most productive agricultural regions. Only less than 1 percent of the total farmland in the United States, the Central Valley produces 8 percent of the nation’s agricultural output by value. Virtually all non-tropical crops are grown in the Central Valley, which is the main source for a number of food products throughout the United States, including: tomatoes, almonds, grapes, cotton, apricots, and asparagus. San Joaquin County is the number one producer of asparagus statewide, with 24,000 acres of San Joaquin County farmland dedicated to the production of this crop. San Joaquin County has 620,070 acres of farmland, of which 492,032 acres are currently farmable. The county has 453,980 acres of farmland that is irrigated, and the average farm size is 204 acres. In 2008, San Joaquin County had 396,986 acres of Prime Farmland, 66,624 acres of Unique Farmland, 86,299 acres of Farmland of Statewide Importance, and 65,788 acres of Farmland of Local Importance.

The City of Manteca sits in an area with rich agricultural resources, including orchards, dairies, vineyards, row crops, and pasture land. Due to excellent soil, great climate, and access to clean water, the City of Manteca has been a predominantly agricultural area for much of the past century. As of 2003, the City of Manteca has designated 5,265.1 acres of land as Prime Farmland; 11,863.2 acres of land as Farmland of Statewide Importance; and 273.5 acres of land as Farmland of Local

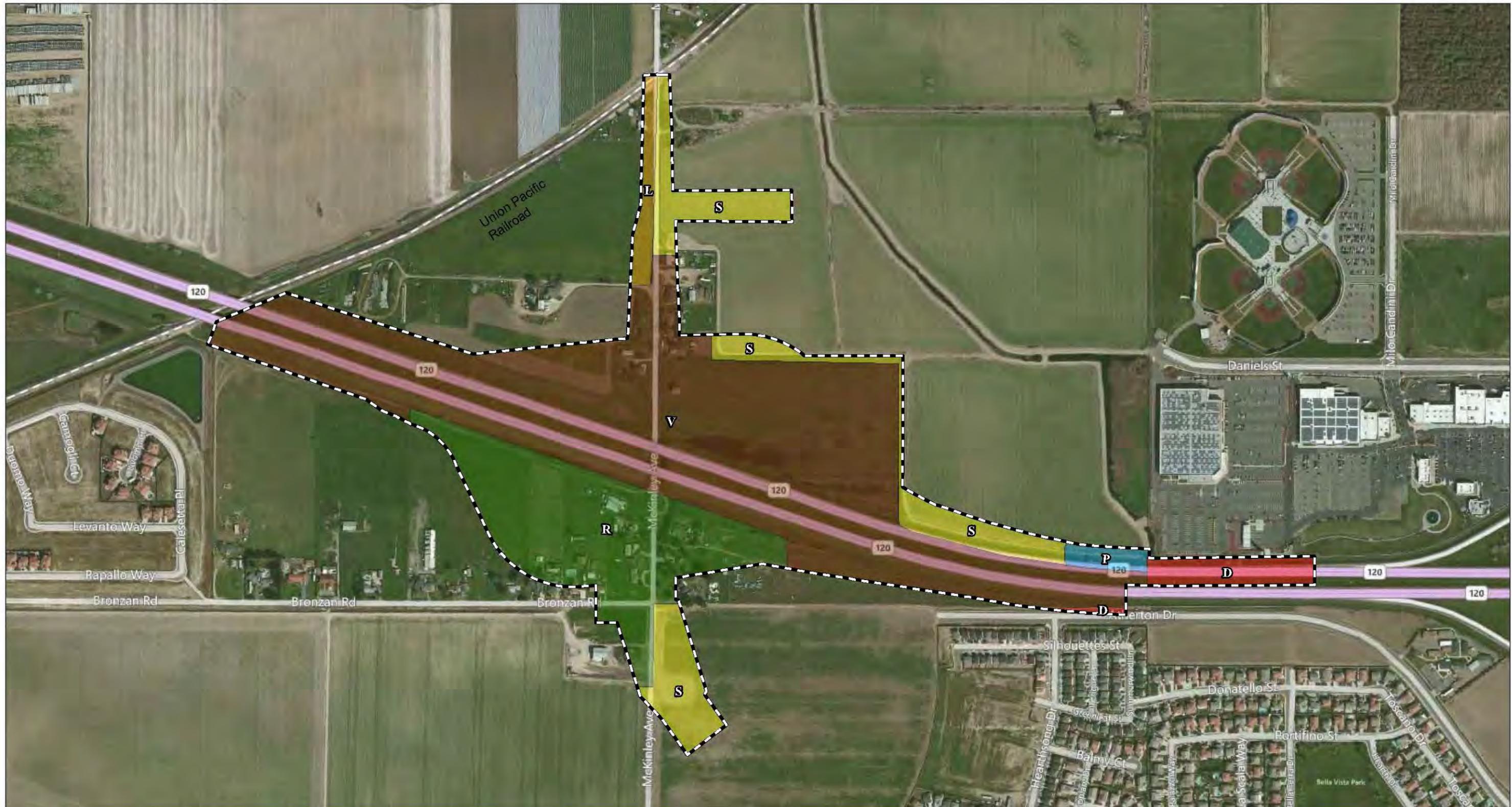
Importance. None of the agricultural land within the City of Manteca is designated as Unique Farmland.

The project site covers 109.02 acres. Soils there are designated as 1.20 acres of Prime Farmland, 14.28 acres of Farmland of Statewide Importance, and 2.10 acres of Farmland of Local Importance. Figure 2.2 shows the location of soils designated as Important Farmlands.

Agriculturally Zoned Land

The area of land surrounding the City of Manteca is within the unincorporated areas of San Joaquin County and is subject to the County General Plan Land Use and Zoning designations. Agriculture 40-acre-minimum-parcel-designated land is the predominant zone surrounding the City of Manteca and accounts for 11,667 acres of land. Agriculture Urban (AU-20), 20-acre minimum, accounts for 2,390 acres of land and is next to the existing City of Manteca boundary east of State Route 99, north of Lathrop Road, and along the south side of State Route 120.

The City of Manteca includes land that is zoned as Agricultural Zoning District (A). This designation provides for agricultural uses (such as vineyards, orchards, and row crops), single-family homes directly related to the agricultural use of the property, limited industrial uses directly related to agriculture, and similar compatible uses. The General Plan Land Use designation implemented by the Agricultural Zoning District (A) is Agricultural Use. Portions of the project site are zoned as Agriculture 40-acre parcel under the San Joaquin County Zoning Ordinance; however, the parcels of the project site within the project boundary are not zoned as agricultural. Table 2.4 provides information on the parcels that are zoned as agricultural land under the San Joaquin County Zoning Ordinance.



LEGEND

Review Area

Farmland Designations 2010 - (109.02 ac)

P - Prime Farmland - (1.20 ac)

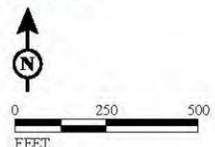
S - Farmland of Statewide Importance - (14.28 ac)

L - Farmland of Local Importance - (2.10 ac)

V - Vacant and Disturbed Land - (65.60 ac)

R - Rural Residential Land - (22.45 ac)

D - Urban and Built-up Land - (3.39 ac)



State Route 120/McKinley Avenue Interchange
 Manteca, San Joaquin County, California
 10-SJ-120-PM 1.9-3.0
 EA 10-0H8900

SOURCE: Draft Farmland Conversion Assessment State Route 120/McKinley Avenue Interchange Project, May 2013. I:\Raj1103\AIVS-EA Chapter 2\Figure 2.2.ai (7/1/2014)

Figure 2.2: Important Farmland of the Proposed Project Site

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Table 2.4 Agriculturally Zoned Parcels within the Project Boundary

Parcel Assessor's Parcel Number	Size of Parcel (acres)	Amount of Land in Parcel Being Affected by Project (acres)	Would Parcel Continue to be Zoned Agricultural with Project Implementation?
24140017	17.71	1.8	Yes
24140018	14.11	4.3	Yes
24140019	1.09	1.09	Yes
24131031	0.48	0.13	Yes
24131030	1.40	0.44	Yes
24131029	0.94	0.32	Yes
24131028	1.00	0.82	Yes
24131034	9.73	9.73	Yes
Total	46.46	18.63	--

Source: Farmland Conversion Assessment, June 2014.

As shown in Table 2.4, approximately 18.63 of the 46.46 total acres of agriculturally zoned land within the project site would be converted to urbanized (highway) uses. However, the zoning designation of each of these parcels would not change with implementation of the project.

Williamson Act Contracted Land

As of January 1, 2009, approximately 15 million acres of land were enrolled under the Williamson Act in California. San Joaquin County, as of 2010, had 536,215 acres of land enrolled under Williamson Act contracts and, at the end of 2002, the City of Manteca had 3,861 acres of land enrolled under Williamson Act contracts. None of the parcels within the project site is under a Williamson Act contract.

2.1.4.3 Environmental Consequences

Important Farmland

According to the California Department of Conservation Farmland Mapping and Monitoring Program and the Natural Resources Conservation Service, the project site contains soils that are designated as Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance. The project site contains 1.2 acres of land designated as Prime Farmland; 14.28 acres of Farmland of Statewide Importance; and 2.1 acres of Farmland of Local Importance. Project implementation would result in the irreversible conversion of agricultural soils designated as Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance to urban (highway) uses.

To determine if the loss of the soils within the project site would adversely affect the Important Farmland inventory of California, San Joaquin County, and the City of Manteca, the Natural Resources Conservation Service Farmland Conversion Impact Rating Form AD-1006 was used.

The form requires an evaluation of issues such as the feasibility of farming the land, the relationship of the land to urban development, and the current and future use of farmland in the project area. A project scoring 160 points or more out of a possible 260 points would need to consider alternatives to avoid or minimize adverse effects on Important Farmland. According to the Farmland Protection Policy Act of 1981, projects that score 160 points or less on the Natural Resources Conservation Service Farmland Conversion Impact Rating Form AD-1006 are not considered to have an adverse effect on Important Farmland.

Pursuant to the instructions of Form AD-1006, Parts I, III, and VI were completed with the understanding that the Natural Resources Conservation Service would complete Parts II and VII. The total acreage affected includes the overcrossing reconstruction, on- and off-ramps, and roadway segments within the interchange area. The total is estimated to be a maximum of about 17.5 acres of Important Farmland to be directly converted to an urbanized use. This amount of land includes the loss of farmlands due to construction improvements within the project rights-of-way needed to accommodate the interchange geometrics.

Form AD-1006 was submitted to the Natural Resources Conservation Service on March 11, 2013 for completion of Parts II and VII and was returned on March 19, 2013. The project would adversely affect about 1.2 acres of Prime Farmland and 16.4 acres of Statewide and Local Important Farmland. This loss of Important Farmland was evaluated based on the Farmland Conversion Impact Rating System. The total relative value of Important Farmland rating calculated was 72 points and a total site assessment of 58 points, for a combined total of 130 points. An explanation of how the 130 points was derived for the project site using Form AD-1006 is provided in Appendix A of the *Draft Farmland Conversion Assessment* (June 2014 – as listed in Appendix E).

Scores below 160 points do not require examination of alternatives capable of reducing the amount of farmland conversion. As discussed above, the Project was rated with 130 points on the Natural Resources Conservation Service Form AD-1006;

therefore, implementation of the Project would not have an adverse effect on farmland per the standards of the Natural Resources Conservation Service.

Agriculturally Zoned Land

The project site is in an area that is zoned for agriculture. Parcels in the western portion of the project site are located in unincorporated San Joaquin County and are zoned as Agriculture 40-acre-minimum parcels. Eight parcels within the project boundary are zoned for agriculture, totaling 46.46 acres. Portions of these parcels (totaling 18.63) would be converted to urbanized uses; however, the zoning designations on each of these parcels would remain Agriculture 40-acre-minimum parcels. Therefore, implementation of the project would not have an adverse effect on agriculturally zoned land.

Williamson Act Contracted Land

The City of Manteca has 3,861 acres of land that is currently designated under Williamson Act contracts. The project is not in an area with land parcels that are under Williamson Act contract. Implementation of the project would not result in the loss or cancellation of Williamson Act contracted land; therefore, no adverse effects on Williamson Act contracted land would occur.

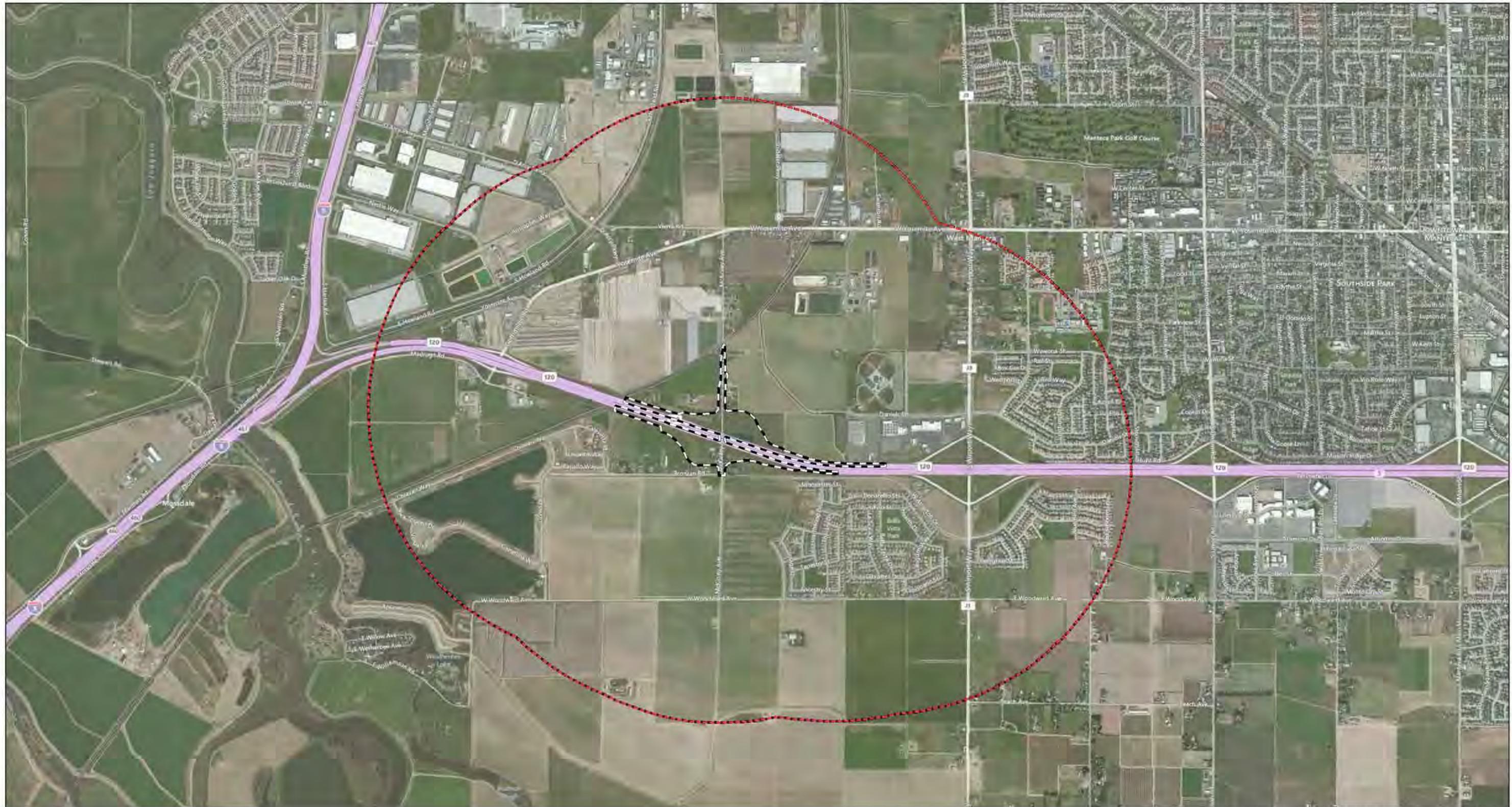
2.1.4.4 Avoidance, Minimization, and/or Mitigation Measures

Implementation of the project would not adversely affect farmland. Therefore, avoidance, minimization, and/or mitigation measures would not be required.

2.1.5 Community Impacts

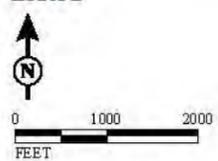
This section analyzes possible adverse effects to Community Character and Cohesion, Relocations/Real Property Acquisition, and Environmental Justice. To analyze community impacts, one must define a study area of adequate size to address neighborhood conditions. The study area encompasses an approximately 1-mile radius (which includes portions of Census Bureau Tracts 51.06; 51.14; 51.19; 51.22; 51.23) around the project as shown in Figure 2.3. No features or community areas outside the 1-mile radius were identified as being sensitive to adverse effects caused by project implementation. This study area is composed mostly of the City of Manteca, although it encompasses a small portion of unincorporated San Joaquin County. Information in this section was obtained from the 2010 U.S. Census and the 2023 City of Manteca General Plan.

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LEGEND

-  Project Footprint - (59.55 ac)
-  Study Area Boundary (Includes Portions of Census Tracts 51.06, 51.14, 51.19, 51.22 and 51.23)



*State Route 120/McKinley Avenue Interchange
 Manteca, San Joaquin County, California
 10-SJ-120-PM 1.9-3.0
 EA 10-0H8900*

SOURCE: Draft Initial Study with Mitigated Negative Declaration/Environmental Assessment State Route 120/McKinley Avenue Interchange Project (October 2013)

Figure 2.3: Community Impact Study Area

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Community Character and Cohesion

This section discusses the community character and cohesion of the area surrounding the project site. An analysis of the affected environment includes such topics as ethnicity, education, local population and housing, neighborhood/communities, housing, and community facilities such as schools and libraries.

2.1.5.1 Regulatory Setting

The National Environmental Policy Act of 1969, as amended, established that the federal government use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 U.S. Code 4331[b][2]). The Federal Highway Administration in its implementation of National Environmental Policy Act (23 U.S. Code 109[h]) directs that final decisions on projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

Under the California Environmental Quality Act, an economic or social change by itself is not to be considered a significant impact on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is significant. Since this project would result in physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the project's effects.

2.1.5.2 Affected Environment ***Race And Ethnicity***

While sometimes difficult to classify, race and ethnicity of a population are self-determined, meaning that individuals identify their own race or ethnicity in the census. The U.S. Census Bureau identifies the following racial categories when collecting census data: White; Black/African American; Native American/Native Alaskan; Asian; Native Hawaiian/Other Pacific Islander; and, Other Race. In addition, Hispanic is an ethnical term that refers to a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race. Alternative names of these classifications are also used to address matters of social sensitivity, although the population in each of these categories remains the same.

San Joaquin County, Manteca, and the study area lie in an ethnically diverse area of the San Joaquin Valley. San Joaquin County has a current population of 685,306 residents; Manteca has a current population of 67,096 residents; and the study area has a current population of 28,687 residents. The racial and ethnic compositions of the study area, Manteca, and San Joaquin County are shown in Table 2.5.

Table 2.5 Racial and Ethnic Compositions of the Study Area, City of Manteca and San Joaquin County (2010)

Geographic Area	Percentage ¹							Total Population
	White	Black/ African American	Native American/ Native Alaskan	Asian	Native Hawaiian/ Other Pacific Islander	Other Race	Hispanic ²	
Study Area ³	15,545 (54.1%)	1,888 (6.5%)	219 (0.7%)	4,676 (16.3%)	201 (0.7%)	4,443 (15.4%)	12,615 (43.9%)	28,687
City of Manteca	41,840 (62.4%)	2,869 (4.3%)	735 (1.1%)	4,780 (7.1%)	384 (0.6%)	11,648 (17.4%)	25,317 (37.7%)	67,096
San Joaquin County	349,287 (51.0%)	51,744 (7.6%)	7,196 (1.1%)	98,472 (14.4%)	3,758 (0.5%)	131,054 (19.1%)	266,341 (38.9%)	685,306

Source: U.S. Census Bureau, American Fact Finder, <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>. Data is for 2010. Accessed September 9, 2013.

¹ Percentages (in parentheses) do not add to 100 percent because the White, Black, American Indian and Alaska Native, Hawaiian and Pacific Islander, and Other categories include persons identified with one race only; the Hispanic category overlaps with other categories. Additionally, the sum of the ethnic groups does not add up to the total population. The reasons for this is that individuals may report more than one race.

² The Census Bureau recognizes Hispanic heritage as an ethnic group rather than as a separate race. If the percent Hispanic is added to the other racial groups, the total may exceed 100 percent. Source: Table P3 – Race: Total Population, Table P4 – Hispanic or Latino and Not Hispanic or Latino by Race: Total Population, U.S. Census Bureau (2000 Census).

³ The study area consists of Census Tracts 51.06; 51.14; 51.19; 51.22; and, 51.23.

As shown in Table 2.5, people of White race and Hispanic ethnicity make up most of the population in the study area, with 15,545 White residents and 12,615 Hispanic residents. People of White race make up 54.1 percent of the population in the study area, and people of Hispanic ethnicity make up 43.9 percent of the study area population. This race/ethnic composition of the study area is comparable and consistent with race/ethnic populations in the City of Manteca and San Joaquin County. People of White race and Hispanic ethnicity make up most of the population in the City of Manteca, with 41,840 residents of White race (62.4 percent of the total population) and 25,317 residents of Hispanic ethnicity (37.7 percent of the total population). People of White race and Hispanic ethnicity make up most of the population in San Joaquin County, with 349,287 residents of White race (51.0 percent

of the population) and 266,341 residents of Hispanic ethnicity (38.9 percent of the population).

Education

The percentage of people living in the study area who are 25 years and older and possess a high school diploma (includes equivalency) is 24.6 percent. The percentage of people possessing the equivalent of a high school diploma and at least 25 years of age living in the City of Manteca is 28.5 percent, versus 25.7 percent in San Joaquin County. Approximately 16.8 percent living in the study area have a bachelor’s degree or higher, while 12 percent living in the city and 12.1 percent living in the county, respectively, have a bachelor’s degree or higher.

Population

The project study area is composed of agricultural and semi-rural residential units with small areas of commercial use. Table 2.6 shows the 2010 population and households for the study area, City of Manteca, and San Joaquin County.

Table 2.6 Population and Number of Households by Area

Area	Number of Residents in 2010	Average Household Size	Total Number of Households
Study Area	29,066	3.45	1,741
City of Manteca	67,096	3.08	21,618
San Joaquin County	685,306	3.12	215,007

Note: A household is defined as an occupied housing unit.

Source: U.S. Census Bureau, American Fact Finder, <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>. Accessed May 2013.

The study area had a 2010 population of 29,066 residents, an average household size of 3.45 persons, and a total of 1,741 residential units. Comparably, the City of Manteca had a 2010 population of 67,096 residents, an average household size of 3.08 persons, and a total of 21,618 residential units. San Joaquin County had a 2010 population of 685,306 residents in 215,007 residential units. The average household size for San Joaquin County was 3.12 persons per residential unit.

Implementation of the project would require acquisition of 28 parcels of land that currently contain 18 residential units and one business (veterinarian clinic). The 18 residential units would be demolished due to project implementation and therefore would be lost to the housing inventory of the study area and the City of Manteca. Considering that the average household size for the study area is 3.45

persons/residential unit, an estimated 66 residents would be displaced due to project implementation.

Neighborhoods/Communities

The project site is in the southwestern portion of the City of Manteca. Agricultural uses and small areas of rural residential uses characterize the area. No established neighborhood is located within the boundary of the project site. The project would acquire 28 parcels that are occupied by 18 residential units, 1 commercial business (veterinarian clinic), and various agricultural uses (including ancillary agricultural outbuildings).

The closest neighborhood—Bella Vista neighborhood—is southeast of the southeastern portion of the project site and consists of more than 500 single-family residential units, Bella Vista Park and Dutra Estates Park. Implementation of the project would not require acquisition of any land containing residential uses in this established neighborhood.

Housing

The City of Manteca has developed from a mostly agricultural use to a mix of residential and agricultural uses. Table 2.7 compares the total amount of residential units within the city in 2000 and 2011.¹

Table 2.7 Housing Stock by Type — City of Manteca

Year	Total Units	Single-Family		Multi-Family		Mobile Homes
		Detached	Attached	2 to 4	5 plus	
2000	16,936	11,883	739	1,009	2,346	869
2011	22,650	17,407	981	928	2,391	887
% Change from 2000 to 2011	+33.7	+46.5	+32.7	-8.0	+1.9	+2.1

Notes: Housing units include occupied and vacant housing units.

Source: U.S. Census Bureau, American Fact Finder, <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>. Accessed May 2013.

As shown in Table 2.7, the City of Manteca had a 33.7 increase in housing stock between 2000 and 2011. The City of Manteca currently has 22,650 residential units,

¹ Note that the 2011 data in this analysis is the latest verified data by the U.S. Census Bureau. Verified 2012 data is not available at this point from the U.S. Census Bureau.

of which 17,407 are single-family detached, 981 are single-family attached, 928 are multi-family 2-to-4 units, and 2,391 are multi-family 5-plus units. The City of Manteca currently has an inventory of 887 mobile home residential units. There are 21,111 occupied housing units in the City of Manteca under existing conditions, of which 12,959 are owner-occupied and 8,152 are tenant-occupied.² The existing mean value of housing in the City of Manteca is \$208,800.

Community Facilities

Community facilities and services include fire stations, police stations, medical institutions, parks, recreational facilities, and houses of worship. The project site is in a rural portion of Manteca with minimal community facilities. Six parks and recreational facilities and one house of worship are within the project study area (1-mile radius around the project site). Other community facilities such as fire stations, police stations, and medical institutions are closer to the core of the City of Manteca.

Schools

Manteca Unified School District provides kindergarten through high school education in the City of Manteca and communities of Lathrop, French Camp, and Weston Ranch. The district has 20 elementary schools (kindergarten through 8th grade) and five high schools within its jurisdiction, with a total estimated current enrollment of 23,000 students. No elementary or high school is within the project study area.

Libraries

Library service in the City of Manteca is provided by the Manteca Branch Library of the Stockton-San Joaquin County Public Library System at 320 West Center Street. This branch, developed in 1961, consists of 14,396 square feet of space. A new library is being planned; it will be owned, operated, and maintained by the City of Manteca. The new library branch will be built in the location of the existing Manteca Branch Library and will be 54,841 square feet. No library facilities are within the project study area.

2.1.5.3 Environmental Consequences

Implementation of the project would accommodate the future growth of the City of Manteca and future vehicle volumes along McKinley Avenue and State Route 120.

² U.S. Census Bureau, American Fact Finder, Fact Sheet DP04 Selected Housing Characteristics, 2011 American Community Survey 1-Year Estimates, City of Manteca, accessed May 2013.

The City of Manteca General Plan, San Joaquin County General Plan, and the San Joaquin Council of Governments 2011 Regional Transportation Plan included the proposed project in their analyses of future build-out of the City of Manteca region and verified that the project would be needed to accommodate regional and local population forecasts.

Race And Ethnicity

Subsection 2.1.7 provides analysis on potential adverse effects to the racial/ethnic composition of the population located within the project study area.

Education

The project would build a new interchange along State Route 120 at McKinley Avenue. Project implementation would not deny the population living in the project study area educational services. Also, the education level of the residents in the living within the project study area would not change due to project implementation. No adverse effects would occur to the level of education for people living in the project study area due to project implementation.

Population

The project would acquire 28 parcels occupied by 18 residential units. Based on the 3.45 persons per residential unit average household size in the project study area, it is estimated that up to 66 residents would be displaced due to project implementation. Residents that are displaced would have the opportunity to purchase similar housing elsewhere in the City of Manteca; therefore, the population of the city would not be adversely affected. Residents may also choose to move out of the City of Manteca to neighboring cities or unincorporated areas of San Joaquin County. If those displaced residents choose to move out of Manteca, a slight decrease in population in the city would occur. Such a population decrease would be nominal when compared to the existing and future estimated populations in the city; therefore, adverse effects would not occur to the population in the City of Manteca with project implementation.

The San Joaquin County Council of Governments and City of Manteca representatives acknowledge that the population within the city will increase in the near future. To accommodate the estimated population increases, representatives acknowledge that additional new interchanges along State Route 120 through the City of Manteca would be needed. The project would fulfill this need and would also accommodate the estimated population growth within the City of Manteca. The project would not result in a direct increase in the population in the city, but it would

result in an indirect acceleration of the population increase expected in the future within the city. The increase would be nominal, and the project would have a beneficial effect on the future population in the City of Manteca.

Neighborhoods/Communities

The project would build a new interchange on State Route 120 at the McKinley Avenue undercrossing. Improvements would also be made along McKinley Avenue north and south of State Route 120 and along State Route 120 approaching McKinley Avenue from the east and west. The project site is in a rural area within the southwest portion of the City of Manteca. The area around the project site contains agricultural land uses and rural residential uses. The nearest established neighborhood is Bella Vista, next to the southeastern corner of the project site. This neighborhood includes an estimated 500 residential units and two neighborhood parks. Implementation of the project would not require acquisition of land in this neighborhood and, other than noise impacts (discussed in Subsection 2.2.6 of this document), no adverse effects are expected to occur to this neighborhood.

Of the 28 parcels required for the project, 12 would require partial acquisition and 16 would require full acquisition. The 28 parcels are occupied by 18 residential units, one commercial business (veterinarian clinic), and various agricultural uses (including ancillary agricultural outbuildings). The land that would be acquired is not part of an established neighborhood and is categorized as a rural residential/agricultural area in the City of Manteca. A discussion is provided below in Subsection 2.1.6 regarding the acquisition of these parcels and minimization measures to reduce adverse effects caused by project implementation.

The project would not affect regional population characteristics, nor would it divide an existing established neighborhood. Adverse effects to neighborhood and communities in the City of Manteca are not expected to occur due to project implementation.

Housing

The project would acquire 28 parcels that are occupied by 18 residential units. As described in Subsection 2.1.6, all displaced residents would have assistance in purchasing replacement housing and property. The City of Manteca currently has 1,539 vacant residential units, providing a large inventory for displaced residents. All other housing units near or next to the project site would not be affected because the project is included in future growth documents, including the City of Manteca

General Plan, the San Joaquin County General Plan, and the San Joaquin Council of Governments 2011 Regional Transportation Plan.

Additional urbanization of the City of Manteca and surrounding unincorporated San Joaquin County would not occur directly from implementation of the project. Planned urbanization around the project would occur due to future land use configurations and growth as projected by the City of Manteca. Urbanization, including new housing outside the city's sphere of influence, is not anticipated because of project implementation. Adverse effects to existing and future housing in the City of Manteca and unincorporated areas of San Joaquin County are not expected to occur from the project.

Community Facilities

A check of community facilities within the project study area found that there are six parks/recreational facilities and one house of worship within the project study area. No fire stations, police stations, emergency medical services stations, or medical institutions are within the project study area; most of these facilities are found closer to the core of the City of Manteca. The project would not require the demolition and/or relocation of community facilities and, therefore, would not have a direct adverse effect on such facilities. The project would result in a nominal acceleration of population growth within the City of Manteca, which could increase the need for new community facilities or increase the services such facilities provide; however, this population growth has already been accounted for by City and San Joaquin County Council of Governments representatives. Therefore, the project would not result in an indirect adverse effect to community facilities within the project study area.

Schools

As noted above, no Manteca Unified School District facilities are located within the project study area. The project would not demolish or relocate existing schools, and, therefore, would not result in a direct adverse effects on Manteca Unified School District facilities. The project would develop a transportation facility along State Route 120 and would not include the development of residential units that could generate students that would attend local schools. Therefore, the project would not result in adverse effect to schools.

Libraries

Library facilities are not located within the project study area. Project implementation would not result in the demolition or relocation of libraries, and, therefore, would not

result in a direct adverse effect toward City of Manteca operated libraries. The project would result in a nominal acceleration of population growth within the City of Manteca, which may increase the use and need of new library facilities; however, this population growth has already been accounted for by City and San Joaquin County Council of Governments representatives. Therefore, the project would not result in an indirect adverse effect to libraries.

2.1.5.4 Avoidance, Minimization, and/or Mitigation Measures

Adverse effects to community character and cohesion are not expected to occur with project implementation; therefore, avoidance, minimization and/or mitigation measures would not be required.

2.1.6 Relocations and Real Property Acquisition

2.1.6.1 Regulatory Setting

The Caltrans Relocation Assistance Program is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 Code of Federal Regulations (CFR) Part 24. The purpose of the Caltrans Relocation Assistance Program is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole.

All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 U.S. Code 2000d, et seq.). See Appendix C for a copy of the Caltrans Title VI Policy Statement.

2.1.6.2 Affected Environment

The State Route 120 and McKinley Interchange Draft Relocation Impact Study dated July 15, 2013 (as listed in Appendix E) contributed to the information discussed and analyzed in this section.

The project site and surrounding area is characterized by relatively flat lands that have been used mostly for agriculture in the past but in the last decade have become more urbanized. The project site is in an area of mixed zoning uses consisting of rural residential and agricultural. Implementation of the project would require right-of-way acquisition totaling 47.81 acres from 28 ownership parcels.

2.1.6.3 Environmental Consequences

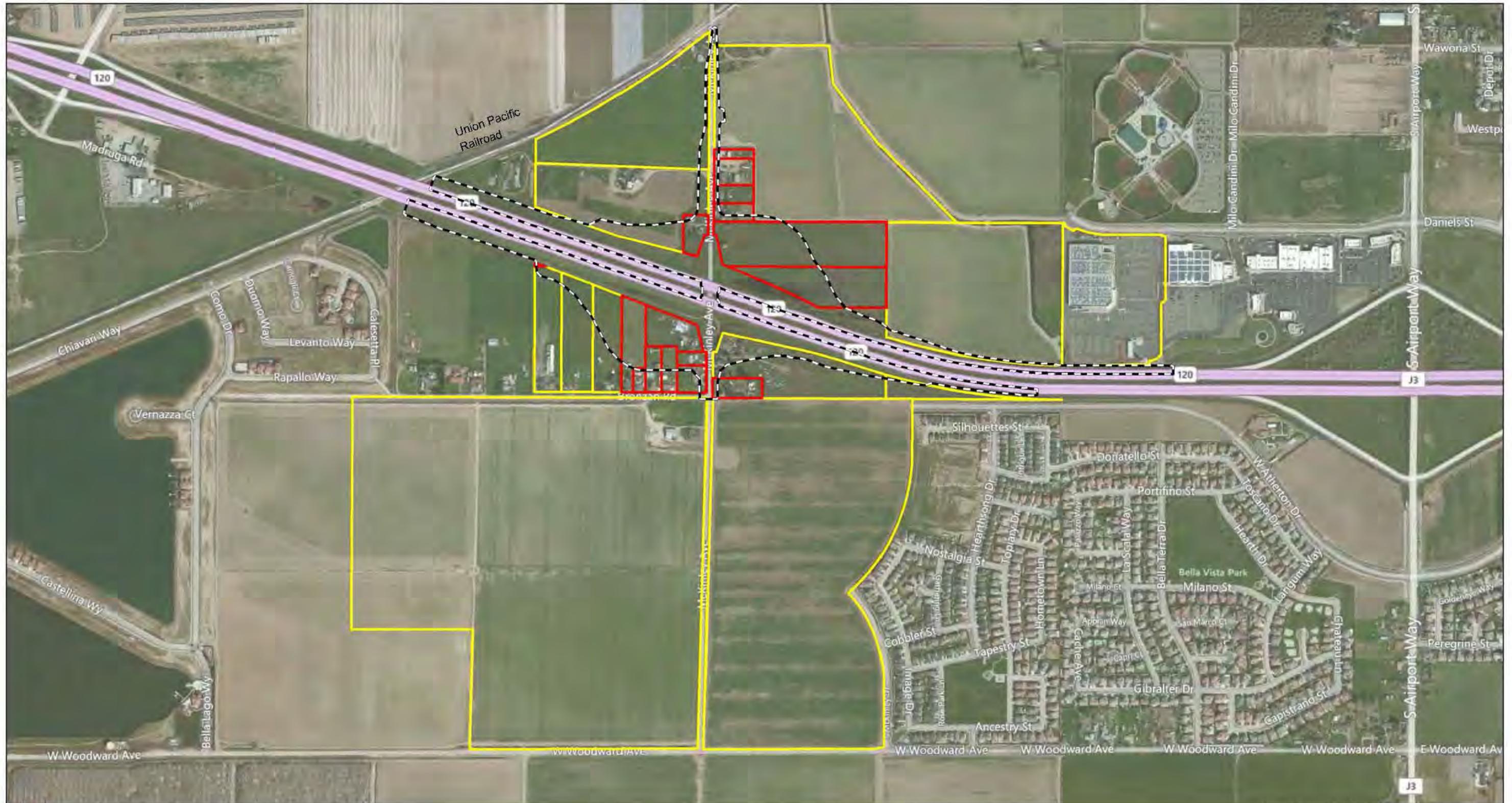
A field review of the project site was conducted to determine the potential adverse effects related to residential and nonresidential property acquisition and relocation. Residents of 18 residential units and employees/owners of one business would be displaced with implementation of the project.

The required parcels include 25 parcels that are privately owned and 3 parcels that are owned by the City of Manteca:

- 18 parcels zoned rural residential
- 6 parcels zoned agriculture
- 3 parcels zoned governmental
- 1 commercially zoned parcel

Full acquisition is required of 14 rural residential properties, 1 agricultural property, and 1 governmental property. The remaining 12 parcels would require partial acquisitions. One parcel includes a veterinary clinic operating on a residential property. The remaining parcels are partial acquisitions on the project site. Figure 2.4 shows the location of parcels that would be acquired through the eminent domain process with project implementation.

Construction of the project would require the displacement of 18 residential units due to the acquisition of the 28 parcels. A business (veterinary clinic) relocation is also anticipated to occur. Also, relocations of personal property would be required on one parcel and possibly on other partial parcels. All residential relocations associated with project implementation are of both owner- and tenant-occupied dwellings. The residential area where the project would be implemented is mixed with residential construction that was developed between the mid-1920s to the early 2000s with the predominant range from 1955 to 1972. The neighborhood consists of larger parcels and a rural setting occupied by residential units and outbuildings. Commercial services, public services and schools are located near the project site.



LEGEND

-  Project Footprint - (59.55 ac)
-  Full Acquisition Parcels
-  Partial Acquisition Parcels



0 350 700
FEET

*State Route 120/McKinley Avenue Interchange
Manteca, San Joaquin County, California
10-SJ-120-PM 1.9-3.0
EA 10-0H8900*

Figure 2.4: Location of Acquired Parcels

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The selection of replacement dwellings for displacees due to project implementation should not only consider size, neighborhood amenities, employment centers and public transportation, the dwellings must also be within their financial means. City of Manteca Relocation Assistance Program Agents would work with displacees during advisory assistance interviews to ascertain their financial capabilities to pay rent and/or to make mortgage payments with utilities included.

Research was conducted to determine the availability of replacement housing and residential rentals in the City of Manteca and City of Tracy real estate market. This research included viewing internet real estate sites and contacting the local board of realtors in June and July 2013. Research indicated that there is a moderate selection of replacement housing available for sale in the following zip codes around the project site: 95330, 95337, and 95304. At the time, approximately 286 single-family residential homes were available for sale including: 66 homes ranging from \$100,000 to \$200,000; 94 homes ranging from \$200,000 to \$300,000; 94 homes ranging from \$300,000 to \$400,000; and, 32 homes ranging from \$400,000 to \$500,000.

Comparable residential rentals were also available in moderate quantity in the City of Manteca and City of Tracy real estate market (June, July 2013). The displacement single-family residential property rental rates in the market began at \$900 per month for a small 2-bedroom/1-bath home. Research indicated that 31 single-family residential units were available for rent in Manteca, and 49 single-family residential units were available in Tracy.

In addition to the residential parcels affected by the project, one home business would also be adversely affected. A veterinarian clinic in conjunction with a residential unit sits on a parcel that would be acquired for the project.

The City of Manteca Relocation Assistance Program Agent would provide all the aid required to assist the impacted business with its relocation needs including assistance in planning the logistics and executing the move of personal property and non-realty business property. Business relocations, such as the affected veterinarian clinic, may require modifications to an existing building to meet the needs of the business.

The business being displaced due to project implementation sits on a parcel with a residence. The veterinarian clinic activity may or may not be eligible for full business relocation benefits due to being located on a mixed-use parcel. Sensitivity to the nature of the business being relocated would be considered to minimize hardships to the owner. Commercial Real Estate Brokers familiar with the project area would be

contacted for preliminary information for the availability of a replacement site for the veterinarian clinic.

Research was conducted in June and July 2013 in the City of Manteca and City of Tracy to determine the availability of commercial space for rent/sale/lease to accommodate the relocation of the veterinarian clinic due to project implementation. Research indicated that there were commercial and industrial sites available near the project site, which were of varying sizes, shapes and locations, and possess professional improvements on commercially zoned land. At the time, the following commercial uses were available for relocation of the veterinarian clinic in either the City of Manteca or City of Tracy:

- 20 retail properties for sale
- 31 retail properties for lease
- 5 industrial properties for sale
- 12 industrial properties for lease

Implementation of the minimization measures below, coupled with the availability of replacement housing and retail/industrial use would ensure that residents and the business owner relocated due to project implementation would not be adversely affected.

2.1.6.4 Avoidance, Minimization, and/or Mitigation Measures

The following minimization measures (presented in the *State Route 120 and McKinley Interchange Draft Relocation Impact Study*) would be implemented to address property displacements and relocations associated with the project:

RELO-1: All businesses and residents being displaced shall be contacted by a Relocation Agent who shall ensure that eligible displaced businesses and residences receive their full relocation benefits including advisory assistance and that all activities shall be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Relocation resources shall be available to all displacees free of discrimination. At the time of the first written offer to purchase, owner occupants shall be given a detailed explanation of City of Manteca’s “Relocation Program and Services”. Tenant occupants of properties to be acquired shall be contacted after the first written offer to purchase and also shall be given a detailed explanation of City of Manteca’s “Relocation

Program and Services”. In accordance with the Uniform Relocation Assistance and Real Property and Real Property Acquisition Policies Act of 1970, as amended, the City of Manteca shall provide relocation advisory assistance to any persons, business, farm, or non-profit organization displaced as a result of acquisition of real property for public use due to implementation of the proposed project.

- RELO-2:** The Uniform Relocation Assistance and Real Property Acquisitions Policies Act (Uniform Act) of 1970 (Public Law 91-646, 84 Stat. 1894) mandates that payments shall be made available to eligible residents, businesses, and non-profit organizations displaced or affected by public use development projects. The Uniform Act provides equitable land acquisition policies and shall be used for the acquisition of the 28 parcels associated with the proposed project.
- RELO-3:** Where acquisition is unavoidable the provisions of the Uniform Act and the 1987 Amendments as implemented by the Uniform Relocation Assistance and Real Property Acquisition Regulations for Federal and Federally Assisted Programs adopted March 2, 1989 shall be followed. An independent appraisal of the 28 affected properties shall be obtained and an offer for the full appraisal shall be made prior to final project approval.
- RELO-4:** The City of Manteca’s Relocation Assistance Agents assigned to the affected residents and business owner shall perform some or all of the following activities to ensure a smooth relocation process:
- Provide data to the Environmental Unit as needed;
 - Participate in the preparation of the Final Relocation Impact Statement or Document;
 - Request Parcel Occupancy Data Sheets from the Appraisal Units;
 - Coordinate first City of Manteca Relocation Assistance Program call with presentation of First Written Offer by Acquisition Unit;
 - Provide Advisory Assistance as needed to all displacees and potential displacees;
 - Conduct an assessment of displacees financial abilities;
 - Determine the current family housing needs of the displacees and potential displacees;

- Conduct replacement housing searches;
- Prepare and submit 30-day and 90-day notices and deliver in a timely manner;
- Assist displacees with document preparation and coordination of interpreters as needed;
- Coordinate moving from displacement to replacement dwellings; and
- Coordinate personal property moves.

2.1.7 Environmental Justice

2.1.7.1 Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, signed by President Bill Clinton on February 11, 1994. This order directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2013, in San Joaquin County, the low income limit is \$50,400 for a family of four.

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project. Caltrans' commitment to upholding the mandates of Title VI is evidenced by its Title VI Policy Statement, signed by the Director, which can be found in Appendix C of this document.

2.1.7.2 Affected Environment

The environmental justice analysis done using demographic data of the 2010 U.S. Census Bureau for the study area and the 2023 City of Manteca General Plan, and San Joaquin County General Plan 2010. The discussion below includes comparative analysis of the study area, City of Manteca, and San Joaquin County for:

- Ethnicity
- Percentage of population below the poverty level
- Median household income

The project site sits in a portion of southwestern Manteca with agricultural uses and rural residential uses. The study area has a White population of 15,545 residents

(54.2 percent of the total population) and a Hispanic ethnicity population of 12,615 residents (44.0 percent of the total population). These statistics are comparable to the ethnic composition of both the City of Manteca and San Joaquin County.

In 2010, the population living below the federal poverty level in the study area totaled 1,735 residents, or 6.5 percent of the population for whom poverty status was determined (18 to 65+ years of age). Residents in the City of Manteca living below the poverty level totaled 5,884 residents, or 8.8 percent for whom poverty status was determined; and residents in San Joaquin County living below the poverty line totaled 128,748 residents, or 19.2 percent of the total population for whom poverty status was determined.

The median household income in the project study area was estimated to be \$75,970 in 2011. In comparison, for the same year, the median household incomes in the City of Manteca and County of San Joaquin in 2011 were \$53,037 and \$50,853, respectively.

The project would also have an adverse effect on properties located nearby. The project would acquire 28 land parcels that are occupied with 18 residential units and 1 commercial business (veterinarian clinic). Besides these acquisitions, the project would have little effect on the ethnicity and poverty levels of the local population or the median household income in the area.

2.1.7.3 Environmental Consequences

The project is in an area of agricultural and rural residential uses. As discussed above, most of the population within the study area is White or Hispanic residents. Given the total population of 28,687, the population within the study area consists of 15,545 residents of White race, or 54.2 percent of the population, and 12,615 residents of Hispanic ethnicity, or 44.0 percent of the population. The population of White residents and residents of Hispanic ethnicity and percentage of their race/ethnicity total population within the study area is comparable to the same race/ethnic population and percentage of total population for residents living in the City of Manteca and San Joaquin County.

Residents in the study area living below the federal poverty level totaled 1,735 residents or 6.5 percent of the population for whom poverty status was determined. The percentage of residents living under the poverty level in the study area is comparable to the 8.8 percent of the population living under the poverty level in the

City of Manteca and well below the 19.2 percent of the population living under the poverty level in San Joaquin County.

The racial and economic composition of the project site within the study area is predominantly non-minority populations living above the federal poverty line. Compared to the City of Manteca and San Joaquin County, the study area has fewer minorities and fewer residents living below the federal poverty level. Notwithstanding the socio-economic setting of the study area, the project would not adversely affect any population segment, as the residential displacements that would occur would be minimized through implementation of mitigation/minimization measures as described earlier in Subsection 2.1.6. Also, the project includes the build-out of an existing highway (State Route 120) that has been planned to accommodate the future population growth within the City of Manteca. For these reasons, the project would not cause a disproportionate adverse effect on any minority or low-income population, as outlined in Executive Order 12898 regarding environmental justice. Therefore, the project is not subject to the provisions of Executive Order 12898.

2.1.7.4 Avoidance, Minimization, and/or Mitigation Measures

The project would not cause disproportionately high and/or adverse effects on any minority or low-income populations based on Executive Order 12898 regarding environmental justice. No avoidance, minimization and/or mitigation measures would be required.

2.1.8 Utilities/Emergency Services

This section provides analysis on possible adverse effects to utility systems including water, sewer, electricity, and natural gas systems with implementation of the project. Possible adverse effects to emergency services such as law enforcement and fire protection are also discussed.

2.1.8.1 Affected Environment

Information for this subsection was obtained from the City of Manteca 2023 General Plan (October 6, 2003) and the Manteca Municipal Services Review document.

The project site is in the City of Manteca, an urban area in San Joaquin County that provides residents with utility and emergency services. The following provides information on the existing water, sewer, electricity, natural gas, telecommunications, law enforcement and fire protection services within the City of Manteca.

Water Service

The City of Manteca provides water service to all its residents through 17,556 connections. Of these connections, 16,726 are residential, 803 are commercial, and 27 are industrial. The City of Manteca currently has two water sources: surface water and groundwater supplies. The City participates in the South County Surface Water Supply Project for surface water, and the City operates and maintains its own groundwater system of wells. In 2007, the City's total water demand was 15,880 acre feet for a service area population of approximately 65,076 residents. This water demand represents an average consumption of 218 gallons of water per capita per day. In 2007, the groundwater system supplied about 59 percent of the City's water supply needs. Surface water provides the remaining 41 percent of water supply needed for the City of Manteca. The ultimate goal for the City is for surface water to provide 53 percent of the water demand and groundwater to provide 47 percent of the water demand.

Sewer Service (Collection And Treatment)

The project site is in an area where sewer service infrastructure exists. The City of Manteca maintains and operates 3,750 feet of 12-inch-diameter sanitary sewer force main and 3,250 feet of 36-inch-diameter sanitary sewer main within the boundary of the project. These sanitary sewer mains currently run longitudinal along both sides of McKinley Avenue and would need to be relocated outside of the proposed widened roadway.

Electrical/Natural Gas Service

Electricity and natural gas service are provided by the Pacific Gas and Electric Company in the City of Manteca and at the project site. Pacific Gas and Electric Company currently owns and operates electricity and natural gas infrastructure within the City of Manteca. Pacific Gas and Electric Company currently has 4,810 feet of 17 kilovolts electrical lines on 24 joint utility poles on the eastern side of the existing McKinley Avenue. Pacific Gas and Electric Company owned and operated natural gas lines are not located within the boundary of the project.

Telecommunications Service

Verizon and AT&T provide telecommunications service in the City of Manteca. About 3,030 feet of Verizon-owned and -operated fiber optic lines are located on the 24 joint utility poles on the eastern side of the existing McKinley Avenue. In addition, Verizon has 890 feet of buried fiber optic lines within the McKinley Avenue right-of-

way. AT&T buried telephone cables run parallel to McKinley Avenue along the west side.

Cable Television Service

Comcast provides cable television service in the area of the project site. About 3,070 feet of overhead cable television lines are located on the 24 joint utility poles on the eastern side of the existing McKinley Avenue. Comcast also has 890 feet of buried fiber optic lines within the McKinley right-of-way.

Law Enforcement Service

Law enforcement protection services in the City of Manteca are provided by the Manteca Police Department at 1001 West Center Street, about 1.75 miles northeast of the project site. The Manteca Police Department is in the process of purchasing land to develop a new headquarters at 555 Industrial Drive, 2.6 miles east of the project site. This new facility would allow the Manteca Police Department to grow over the next 10 to 20 years.

As of 2008, the Manteca Police Department had 80 sworn officers, including 1 chief, 2 captains, 2 lieutenants, 10 sergeants, and 64 police officers. The 2008 ratio of police officers per residents was 1.21 officers per 1,000 residents. The Manteca Police Department also has three full-time equivalent non-sworn personnel, including both full-time and part-time administrators, public safety dispatchers, community services officers, animal services, records clerks, custody officers, and a records supervisor.

The Manteca Police Department divides calls for service into three categories: Priority 1 calls are defined as life-threatening situations; Priority 2 calls are not life threatening, but require immediate response; and, Priority 3 calls cover all other calls received by the Manteca Police Department. The Manteca Police Department responds to Priority 1 calls in less than 3 minutes 90 percent of the time, and Priority 2 and 3 calls in less than 31 to 71 minutes 90 percent of the time, respectively. The Manteca Police Department currently provides adequate service to residents and businesses in the City of Manteca, including the area of the project site.

Fire Protection Service

The Manteca Fire Department is responsible for providing fire service and emergency medical response to the City of Manteca and its residents. The department serves residents throughout about 17.7 square miles within the city limits and an additional 9.4 square miles outside the city limits within the existing sphere of influence and Manteca's 10-Year Planning Horizon.

The Manteca Fire Department operates out of three facilities within the city. The closest fire station to the project site is Station 242 (headquarters) at 1154 South Union Road, 1.3 miles to the east.

The Manteca Fire Department currently employs 45 people, including 1 full-time Fire Chief, 4 Division Chiefs, 1 Deputy Fire Marshal, 1 Fire Inspector, 3 administrative personnel, and 36 firefighters. As of January 2008, the Manteca Fire Department had an average response time of 4.59 minutes, with a response time for structural fires of 4.89 minutes and a response time for medical emergencies of 4.55 minutes. The department currently provides adequate service to residents and businesses in the City of Manteca, including the project site.

Environmental Consequences

Utility relocations would be required for the project. Twenty-four joint utility poles stand along the eastern side of McKinley Avenue supporting 4,810 feet of Pacific Gas and Electric Company 17-kilovolt overhead electric lines; 3,070 feet of Comcast overhead cable television lines; and 3,030 feet of Verizon overhead fiber optics lines. Buried in McKinley Avenue within the project boundary are 890 feet of Comcast and Verizon fiber optic lines; a 3,750-foot 12-inch-diameter City of Manteca-maintained sanitary sewer force main; and a 3,250-foot 36-inch-diameter City of Manteca-maintained sanitary sewer main.

According to project engineers, utility relocations would be considered minor and would occur at the same time as improvements to McKinley Avenue are completed. This joint work would result in minimal customer disruption within the area surrounding the project site.

Temporary lane, road, and intersection closures are expected during construction. Such closures would result in delays, but are not expected to disrupt emergency services since the construction contractor would circulate construction schedules and traffic control information to City of Manteca emergency-service providers. This would allow emergency service providers to plan for the use of alternate routes during project construction related road closures. Once construction is complete, congestion on McKinley Avenue, State Route 120 and surrounding roadways would decrease, and traffic levels of service would improve, resulting in an overall benefit to emergency services and response times. Therefore, construction of the project would have temporary adverse effects on utility and emergency services, but no adverse effects to utility and emergency services would occur during project operation.

2.1.8.2 Avoidance, Minimization, and/or Mitigation Measures

Utilities for water, wastewater, electric, natural gas, and telecommunications services are in the project area. Project construction activities may require relocation of utilities that would be affected by project implementation. The relocations should not present any unusual situations and are considered routine for roadway construction projects. Implementation of the following minimization measures would reduce adverse effects to utilities and emergency services:

- UT-1:** The contractor shall be required to notify utility users of any short-term, limited interruptions of service.
- UT-2:** The contractor shall circulate construction schedules and traffic control information to Manteca emergency-service providers at least one to two weeks before any road closures.

2.1.9 Traffic And Transportation/Pedestrian And Bicycle Facilities

This section provides analysis on possible adverse effects on regional and local traffic and transportation as well as non-transit-type facilities (pedestrian paths, and bicycle facilities).

2.1.9.1 Regulatory Setting

Caltrans, as assigned by Federal Highway Administration, directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (see Code of Federal Regulations 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

In July 1999, the U.S. Department of Transportation issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the U.S. Department of Transportation regulations (49 CFR Part 27) implementing Section 504 of the Rehabilitation Act (29 U.S. Code 794). Federal Highway Administration has enacted regulations for the implementation of the 1990 Americans with Disabilities Act, including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the Americans with Disabilities Act requirements to federal-aid projects, including Transportation Enhancement Activities.

The following provide regional and local regulatory settings regarding traffic and transportation/non-transit-type facilities.

2.1.9.2 Affected Environment

The Revised Final Traffic Report State Route 120/McKinley Avenue Interchange Project Approval and Environmental Document dated April 25, 2013 (as listed in Appendix E) contributes to the information and analysis of traffic and circulation in this section.

Existing Intersection And Freeway Segment Level of Service

The project site is in the City of Manteca and is part of the city's existing circulatory system. This section describes the existing circulation system conditions within the project area, including the existing roadway network, traffic data collection, and existing traffic operations. The analysis below is based on the Caltrans level of service standards for two-lane highways as shown in Figure 2.5.

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LEVELS OF SERVICE

for Two-Lane Highways

Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
A		55+	Highest quality of service. Free traffic flow with few restrictions on maneuverability or speed. No delays
B		50	Stable traffic flow. Speed becoming slightly restricted. Low restriction on maneuverability. No delays
C		45	Stable traffic flow, but less freedom to select speed, change lanes or pass. Minimal delays
D		40	Traffic flow becoming unstable. Speeds subject to sudden change. Passing is difficult. Minimal delays
E		35	Unstable traffic flow. Speeds change quickly and maneuverability is low. Significant delays
F			Heavily congested traffic. Demand exceeds capacity and speeds vary greatly. Considerable delays

Source: 2000 HCM, Exhibit 20-2, LOS Criteria for Two-Lane Highways in Class 1



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Figure 2.5: Level of Service for Two-Lane Highways

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The City of Manteca sits at the junction of State Routes 120 and State Route 99 in San Joaquin County. State Route 99 and Interstate 5 provide regional access to Manteca from the north and the south, and State Route 120 provides regional access to Manteca from the east and west. The project site is on State Route 120 between the Yosemite Avenue/State Route 120 interchange and Airport Way/State Route 120 interchange. Key roadways around the project site include the following:

- State Route 120 – State Route 120 is an east-west four-lane freeway in the project site that connects Interstate 5 and State Route 99 through Lathrop and Manteca. The freeway features interchanges at Yosemite Avenue, Airport Way, Union Road, and Main Street. State Route 120 is grade-separated above McKinley Avenue and has a posted speed limit of 65 miles per hour.
- Yosemite Avenue interchange (post mile 1.328) – This interchange is a tight-diamond configuration in which State Route 120 is elevated above Yosemite Avenue. The ramp terminal intersections are spaced about 410 feet apart and operated with stop-control on the off-ramps. Yosemite Avenue extends northerly from the interchange as a two-lane roadway carrying an average daily traffic volume of 5,000 vehicles. Several industrial/agricultural businesses directly south of State Route 120 are accessed exclusively from this interchange via Madruga Road.
- Airport Way interchange (post mile 3.323) – This interchange is a spread-diamond configuration, in which Airport Way is elevated above State Route 120. The ramp terminal intersections are spaced about 1,475 feet apart and operate with traffic signals. Within the project area, Airport Way is generally a two-lane roadway, but has been widened to four lanes directly north of the interchange through the Daniels Way intersection, which has traffic signals. North of State Route 120, Airport Way is designated by the San Joaquin Council of Governments as a Congestion Management Program facility. As of June 2010, Airport Way carried an average daily traffic volume of 16,400 vehicles directly north of State Route 120 and an average daily traffic volume of 8,500 vehicles south of State Route 120.
- Union Road interchange – This interchange is a spread-diamond configuration in which Union Road is elevated above State Route 120. The ramp terminal intersections are spaced about 1,250 feet apart and operate with traffic signals. Union Road has one lane in each direction in the immediate interchange vicinity and widens to a four-lane arterial roadway 350 feet north of the interchange.

- McKinley Avenue – McKinley Avenue is a two-lane rural road that extends northerly from Woodward Avenue under State Route 120 to Yosemite Avenue and beyond.
- Union Pacific Railroad track – The project site is near a Union Pacific Railroad track with an at-grade crossing at McKinley Avenue about 2,000 feet north of State Route 120. This crossing, in unincorporated San Joaquin County, has advanced warning signs, railroad crossing pavement markings, stop lines, crossing gates, flashing lights, and warning bells. According to the U.S. Department of Transportation Inventory, an average of 13 trains per day crosses this segment of McKinley Avenue.

The Traffic Report for the project discusses existing capacities and level of service ratings for various intersections and street/freeway segments in the project area. Information on roadway conditions, including freeway segment and intersection level of service, was collected to determine the existing conditions of the circulatory system around the project site. Traffic volumes at the study intersections were collected on December 7, 2011 during the morning peak period (6:00 to 9:00 a.m.) and afternoon peak period (3:30 to 6:30 p.m.). These counts included heavy vehicles, bicycles, pedestrians, and observed maximum queue lengths at interchange ramp terminal intersections. A Caltrans traffic monitoring station on State Route 120 at the Union Road overcrossing was used to obtain existing level of service information for select freeway segments and convergence/divergence areas along State Route 120. The Traffic Report analyzed 10 intersections around the project site:

- State Route 120 Westbound Ramps/Yosemite Avenue (within Caltrans' right-of-way)
- State Route 120 Eastbound Ramps/Yosemite Avenue (within Caltrans' right-of-way)
- McKinley Avenue/Yosemite Avenue (not within Caltrans' right-of-way)
- McKinley Avenue/Bronzan Road (not within Caltrans' right-of-way)
- Airport Way/Daniels Street (not within Caltrans' right-of-way)
- State Route 120 Westbound Ramps/Airport Way (within Caltrans' right-of-way)
- State Route 120 Eastbound Ramps/Airport Way (within Caltrans' right-of-way)
- Airport Way/Atherton Drive (not within Caltrans' right-of-way)
- State Route 120 Westbound Ramps/Union Road (within Caltrans' right-of-way)
- State Route 120 Eastbound Ramps/Union Road (within Caltrans' right-of-way)

Table 2.8 displays the average control delay and level of service under existing conditions for each of the study intersections during the morning and afternoon peak hours.

Table 2.8 Existing Level of Service of Study Intersections Inside and Outside of Caltrans Right-of-Way

Intersection	Control	Morning Peak Hour		Afternoon Peak Hour	
		Delay (sec/veh)	Level of Service	Delay (sec/veh)	Level of Service
Intersections Inside Caltrans' Right-of-Way					
1. State Route 120 Westbound Ramps/Yosemite Avenue	Side-street stop	2	A	2	A
2. State Route 120 Eastbound Ramps/Yosemite Avenue	Side-street stop	4	A	5	A
6. State Route 120 Westbound Ramps/Airport Way	Traffic signal	10	A	15	B
7. State Route 120 Eastbound Ramps/Airport Way	Traffic signal	10	A	26	C
9. State Route 120 Westbound Ramps/Union Road	Traffic signal	6	A	12	B
10. State Route 120 Eastbound Ramps/Union Road	Traffic signal	11	B	21	C
Intersections Outside Caltrans' Right-of-Way					
3. McKinley Avenue/Yosemite Avenue	All-way stop	6	A	7	A
4. McKinley Avenue/Bronzan Avenue	Side-street stop	1	A	2	A
5. Airport Way/Daniels Street	Traffic signal	16	B	25	C
8. Airport Way/Atherton Drive	Side-street stop	11	B	6	A

Source: Revised Final Traffic Report State Route 120/McKinley Avenue Interchange Approval and Environmental Document, Table 7, pg. 22, April 25, 2013.
sec/veh = seconds per vehicle

As shown in Table 2.8, all of the study intersections currently operate at level of service C or better. According to the table, all individual movements at the study intersections within the Caltrans right-of-way currently operate at level of service C or better.

Existing level of service during morning and afternoon peak hour conditions for segments of State Route 120 were analyzed as well. The following freeway segments were studied near the project site:

- Eastbound State Route 120 merge with Interstate 5 southbound off-ramp (merge movement).
- Eastbound State Route 120 between Interstate 5 and Yosemite Avenue (basic freeway segment).
- Eastbound State Route 120 diverge at Yosemite Avenue (diverge movement).
- Eastbound State Route 120 merge at Yosemite Avenue (merge movement).
- Eastbound State Route 120 between Yosemite Avenue and Airport Way (basic freeway segment).
- Eastbound State Route 120 diverge at Airport Way (diverge movement).
- Eastbound State Route 120 diverge at Union Road (diverge movement).
- Eastbound State Route 120 merge at Union Road (merge movement).
- Westbound State Route 120 diverge at Airport Way (diverge movement).
- Westbound State Route 120 merge at Airport Way (merge movement).
- Westbound State Route 120 between Airport Way and Yosemite Avenue (basic freeway segment).
- Westbound State Route 120 diverge at Yosemite Avenue (diverge movement).
- Westbound State Route 120 merge at Yosemite Avenue (merge movement).
- Westbound State Route 120 diverge with Interstate 5 northbound on-ramp (diverge movement).
- Northbound Interstate 5 south of State Route 120 (basic freeway segment).
- Northbound Interstate 5 merge with State Route 120 Westbound (merge movement).
- Northbound Interstate 15 north of State Route 120 (basic freeway segment).
- Southbound Interstate 5 north of State Route 120 (basic freeway segment).
- Southbound Interstate 5 diverge at State Route 120 Eastbound (diverge movement).
- Southbound Interstate 5 south of State Route 120 (basic freeway segment).

Table 2.9 shows the existing morning and afternoon peak hour density and level of service ratings of freeway segments within the project area.

Table 2.9 Freeway Level of Service – Existing Conditions

Freeway Segment	Type	Morning Peak Hour		Afternoon Peak Hour	
		Density	Level of Service	Density	Level of Service
Eastbound State Route 120 merge with Interstate 5 southbound off-ramp	Merge Movement	18	B	31	D
Eastbound State Route 120 between Interstate 5 and Yosemite Avenue	Basic Freeway Segment	18	C	34	D
Eastbound State Route 120 diverge at Yosemite Avenue	Diverge Movement	24	C	38	E
Eastbound State Route 120 merge at Yosemite Avenue	Merge Movement	19	B	32	D
Eastbound State Route 120 between Yosemite Avenue and Airport Way	Basic Freeway Segment	18	B	33	D
Eastbound State Route 120 diverge at Airport Way	Diverge Movement	22	C	36	E
Eastbound State Route 120 merge at Airport Way	Merge Movement	20	C	31	D
Eastbound State Route 120 diverge at Union Road	Diverge Movement	23	C	35	D
Westbound State Route 120 merge at Union Road	Merge Movement	28	D	27	C
Westbound State Route 120 diverge at Airport Way	Diverge Movement	33	D	32	D
Westbound State Route 120 merge at Airport Way	Merge Movement	30	D	26	C
Westbound State Route 120 between Airport Way and Yosemite Avenue	Basic Freeway Segment	31	D	25	C
Westbound State Route 120 diverge at Yosemite Avenue	Diverge Movement	35	D	31	D
Westbound State Route 120 merge at Yosemite Avenue	Merge Movement	30	D	27	C
Westbound State Route 120 diverge with Interstate 5 northbound on-ramp	Diverge Movement	34	D	31	D
Northbound Interstate 5 south of State Route 120	Basic Freeway Segment	13	B	23	C
Northbound Interstate 5 merge with State Route 120 Westbound	Merge Movement	15	B	24	C
Northbound Interstate 5 north of State Route 120	Basic Freeway Segment	18	B	26	D
Southbound Interstate 5 north of State Route 120	Basic Freeway Segment	22	C	18	B
Southbound Interstate 5 diverge at State Route 120 Eastbound	Diverge Movement	27	C	24	C
Southbound Interstate 5 south of State Route 120	Basic Freeway Segment	21	C	15	B

Source: Revised Final Traffic Report State Route 120/McKinley Avenue Interchange Approval and Environmental Document, Table 12, pg. 29, April 25, 2013.

As shown in Table 2.9, some of the studied freeway segments in the project area are operating at below level of service standards under existing conditions. Under existing conditions, the westbound State Route 120 ramp merge/diverge movements and mainline segments between Airport Way and Interstate 5 operate at level of service D during the morning peak hour. During the afternoon peak hour, the eastbound State Route 120 ramp diverging movements at Yosemite Avenue and Airport Way operate at level of service E under existing conditions while all other eastbound State Route 120 study segments operate at level of service D conditions. In the westbound direction, several merge/diverge movements operate at level of service D under existing conditions.

Existing Non-Transit Facilities

The City of Manteca developed the Bicycle Master Plan Final Report in September 2003 to identify existing differences in alternative modes of travel within the city. The current bicycle Route system and support facilities are dispersed throughout the central core of the city with the Tidewater Bike path serving as the backbone of the system. In addition, the following areas for bicycle facilities have been approved (if not already developed) by the City:

- Class I trails on Industrial Park Drive connecting with Tidewater Bike Path, Spreckles Bike Path, and the future Atherton Drive Bike Path
- Class II bike lane on Center Street between Winters Drive and the Union Pacific Railroad
- Class III bike Route on North Cherry Street between Center Street and Union Street

State Route 120 and McKinley Avenue are not currently designated with a Class I Bike Path, Class II Bike Lane, or Class III Bike Route. However, a Class I Bike Path is proposed along the Union Pacific Railroad line joining with McKinley Avenue and continuing south under the State Route 120 undercrossing to Woodward Road, according to the Bicycle Master Plan of the City of Manteca.

2.1.9.3 Environmental Consequences

The information provided in this section is a summary of the potential adverse/beneficial affects the project would have on the local circulatory system. A detailed analysis is presented in *Revised Final Traffic Report State Route 120/McKinley Avenue Interchange Project Approval and Environmental Document (PA/ED)* (as listed in Appendix E). The project would cause both significant

degradations and significant beneficial improvements in the level of service on State Route 120 in 2040 when compared to 2040 conditions without the project. The project under 2040 conditions would cause four significant degradations in level of service on State Route 120 compared to 2040 without-project conditions:

- Westbound State Route 120 diverge at Airport Way – level of service E to F during the morning peak hour. The project would result in a decrease of 630 vehicles on the off-ramp, but overall westbound State Route 120 volume increases by 280 vehicles, which results in degradation.
- The westbound State Route 120 merge at Union Road segment would degrade from level of service E to level of service F during the morning peak hours due to the net increase of 130 morning peak hour vehicles estimated to be added to the on-ramp.
- The westbound State Route 120 diverge at Airport Way segment would degrade from level of service E to F during the morning peak hour. The project would result in a 630-vehicle decrease on the off-ramp, but overall westbound State Route 120 volumes would increase by 280 vehicles by 2040, resulting in the degradation in level of service.
- The westbound State Route 120 between Airport Way and McKinley Avenue segment would degrade from level of service E to F during the morning peak hours due to additional ramps and greater traffic levels along State Route 120.

The project under 2040 conditions would result in two significantly beneficial improvements in level of service on State Route 120 compared to 2040 conditions without the project:

- The eastbound State Route 120 merge at Airport Way segment would improve to level of service E from F during the afternoon peak hours because the project would reduce on-ramp vehicle volumes from 1,840 to 1,070 afternoon peak hour vehicles.
- The eastbound State Route 120 diverge at Union Road segment would improve to level of service C from F during peak hour conditions. The project would reduce off-ramp volume from 1,440 to 1,280 afternoon peak hour vehicles, and through traffic on eastbound State Route 120 would be reduced by 500 vehicles.

The above analysis indicates that the project would attract more traffic to the State Route 120 corridor, which would result in some adverse level of service effects for local interchanges and freeway segments. However, the project would also shift

traffic volumes away from certain adjacent interchanges and freeway segments, which would result in beneficial level of service effects.

The project under 2020 and 2040 conditions would improve traffic circulation in the project area and would not have a significant adverse effect on the safety and operations of State Route 120. The project would improve entry and exit along State Route 120 and would serve as the westerly end of the McKinley Avenue Expressway, which would extend southeasterly from the interchange to State Route 99 as a local bypass of State Route 120 (the McKinley Expressway is a Tier I project in San Joaquin Council of Government's 2011 Regional Transportation Plan – a section of this roadway from State Route 120 to the south end of Tara Business Park would be designated a truck Route while the remaining areas would be designated as an expressway).

As with the development of most interchanges, construction and implementation of the project would attract more travelers to the State Route 120 corridor, which would result in several level of service degradations at local intersections and on freeway segments. However, these degradations would be offset by improved operations in other areas along the State Route 120 corridor resulting from diverted traffic to the new interchange, two-lane exit ramps, and continuous auxiliary lanes associated with the project.

Additionally, the project would include an auxiliary lane in the westbound direction exit ramp of the new intersection and ramp meter installations at the State Route 120/McKinley Avenue interchange on-ramps. Operations of the project area would be improved to level of service E under 2020 with-project conditions because new ramp meters along the project corridor would operate at 500 to 600 vehicles per hour per lane.

Non-Transit Facility Analysis

The project would improve non-transit facilities along McKinley Avenue to include a 10-foot-wide Class I Bike Lane/pedestrian walkway on the east side of McKinley Avenue that would comply with the proposed Class I Bike Lane discussed in the City of Manteca's Bicycle Master Plan (September 2003). Implementation of the project would therefore improve bicycle facilities in the City of Manteca. No adverse effects would occur.

2.1.9.4 Avoidance, Minimization, and/or Mitigation Measures

The project would not adversely affect traffic or circulation during operation, but the project would implement the following minimization measures to reduce construction-related traffic impacts:

- TRA-1:** The contractor shall be required to prepare and implement a Traffic Management Plan that shall identify the locations of temporary detours and signage to facilitate local traffic patterns and through-traffic requirements.
- TRA-2:** The project special provisions of the highway contract shall require that emergency service providers (i.e., law enforcement, fire protection, and ambulance services) be given adequate advance notice of any street closures during the construction phases of the proposed project.
- TRA-3:** Construction activities shall be coordinated to avoid blocking or limiting access to residential units and businesses to the extent possible. Residents and business owners shall be notified in advance about potential access or parking effects prior to commencement of construction activities.
- TRA-4:** Any interchange, ramp, or road closures required during construction shall, to the extent possible, be limited to nighttime hours to reduce effects on businesses in the project area.
- TRA-5:** Construction activities shall be coordinated to avoid blocking or limiting access to businesses during business hours. Businesses shall be notified in advance concerning construction activities prior to their commencement.
- TRA-6:** The Traffic Management Plan shall be prepared and implemented to address short-term disruptions in existing circulation patterns during construction; for example, the Traffic Management Plan shall identify the locations of temporary detours or temporary roads to facilitate local traffic circulation and through-traffic requirements.

2.1.10 Visual/Aesthetics

The Visual Impact Assessment (as listed in Appendix E), dated October 2013, contributed to the information and analysis in this section.

2.1.10.1 Regulatory Setting

The National Environmental Policy Act of 1969, as amended, establishes that the federal government use all practicable means to ensure all Americans are provided safe, healthful, productive, and aesthetically (emphasis added) and culturally pleasing surroundings (42 U.S. Code 4331[b][2]). To further emphasize this point, the Federal Highway Administration, in its implementation of National Environmental Policy Act (23 USC 109[h]), directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

The California Environmental Quality Act establishes that it is the policy of the state to take all action necessary to provide the people of the state “with...enjoyment of aesthetic, natural, scenic and historic environmental qualities” (California Public Resources Code Section 21001[b]).

2.1.10.2 Affected Environment

The following neighbors were considered for the evaluation of the project:

- Residences along McKinley Avenue and Bronzan Road

The following highway users were considered for the evaluation of the project:

- Travelers along State Route 120
- Travelers along McKinley Avenue

In 2013, site field visits were conducted and photographs of existing conditions were taken at Key Viewpoints to further describe the visual characterization of the project. Figure 2.6 shows the location of the three Key Viewpoints. Figure 2.7 provides three photographs that were taken at the Key Views showing the existing conditions of the project site. The three Key Viewpoints were chosen because they represent the visual context of the project area as seen by viewer groups (who consider exposure and sensitivity) that would have the highest potential to be affected by project implementation:



Not To Scale

★ View Point Location

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 Interchange Manteca, San Joaquin
 County, California 10-SJ-120-PM
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SOURCE: Visual Impact Assessment State Route 120/McKinley Avenue Interchange Project (September 2013)

Figure 2.6: Existing View Point Locations

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Key View (KV) 1 - From McKinley Avenue (just past Bronzan Road) looking north at elevated State Route 120.



Key View (KV) 2 - From McKinley Avenue looking south at elevated State Route 120.



Key View (KV) 3 - From Eastbound State Route 120 looking East toward the proposed Project Site.



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- Key View 1 is south of the project site along McKinley Avenue and just south of Bronzan Road. This area represents the views of residents along McKinley Avenue looking north toward the project site and motorists traveling northbound on McKinley Avenue approaching the site. The photograph for Key View 1 shows McKinley Avenue as it approaches the existing McKinley Avenue undercrossing at State Route 120, with disked agricultural fields and utility lines on the west and east side of McKinley Avenue in the foreground; residential uses and vegetation on the west and east side of McKinley Avenue in the mid-ground; and vegetation and the State Route 120 overpass above McKinley Avenue in the background.
- Key View 2 is north of the project site along McKinley Avenue. This area represents the views of residents along McKinley Avenue looking south toward the project site and motorists traveling southbound on McKinley Avenue approaching the site. The photograph for Key View 2 shows McKinley Avenue in the foreground; residential uses, utility lines, vegetation and a vegetated hillside on the east and west side of McKinley Avenue in the mid-ground; and McKinley Avenue undercrossing State Route 120 in the background.
- Key View 3 is on eastbound State Route 120 looking east toward the project site. This area represents the views of motorists traveling eastbound along State Route 120 as they approach the site. The photograph for Key View 3 shows the existing conditions along State Route 120 as motorists approach the project site from the east. The photograph shows that motorists' existing view of the site includes eastbound lanes of State Route 120; open space (unimproved parcels) south of State Route 120; the State Route 120 Bridge over McKinley Avenue; and sparse areas of vegetation, utility poles and rural residential units.

2.1.10.3 Environmental Consequences

Visual impacts are determined by assessing changes to the visual resources and predicting viewer response to those changes at the specified Key Views shown above in Figure 2.7. The following provides a summary of the visual changes at the Key Views with project implementation:

Key View 1: Compared to existing conditions, the views would be somewhat different but are not expected to be negatively affected due to the background of the existing elevated freeway, which would remain the dominant feature in the area.

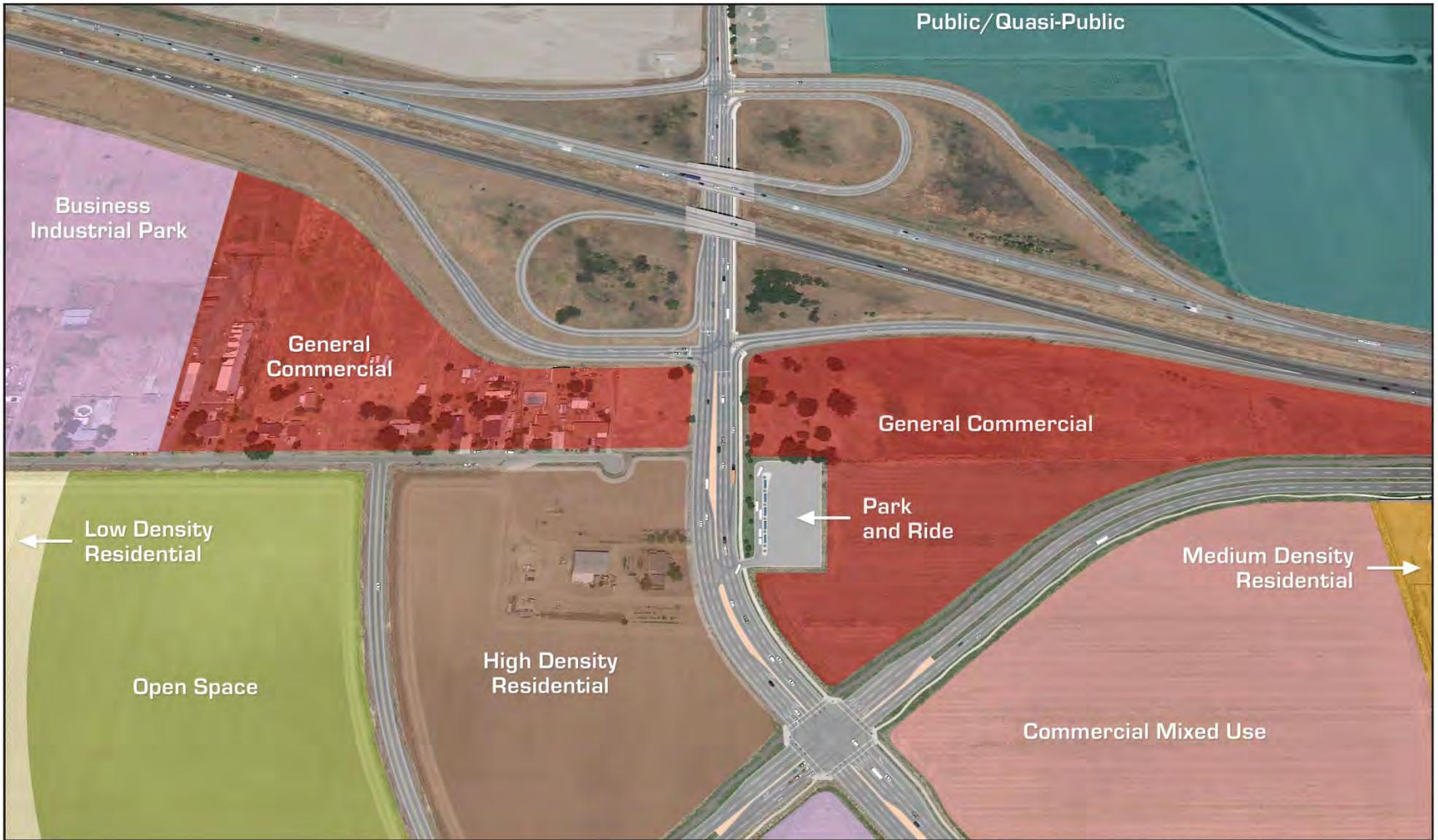
Key View 2: Compared to existing conditions, the views would be somewhat different but are not expected to be negatively affected due to the background of the

existing elevated State Route 120, which would remain the dominant feature in this area.

Key View 3: Compared to existing conditions, the views would be somewhat different but are not expected to be negatively affected due to the background of the existing elevated State Route 120, which would remain the dominant feature in this area.

Figure 2.8 shows the visual characteristics and the future land uses in the area of the project from an elevated view of 300 feet. This shows that the proposed project would be visually compatible with expected future growth in the City of Manteca.

The project would have a low-moderate impact to the visual environment of the project corridor. The recommended minimization measures, identified below, would reduce the project's visual impact as seen from McKinley Avenue, State Route 120, and the surrounding residences. The intent of these measures would be to reduce the visual change to the project corridor resulting from the project. Even with implementation of the measures listed below, visual impacts would remain, regardless of project implementation. The listed measures, combined with proposed project features such as replacement landscaping and aesthetic treatments on the structure facades, would lessen the noticeable visual change to the corridor. However, some of the detrimental visual impacts would remain because of the acquisition of residential properties to develop the project, increased hard surfaces, and loss of vegetative character.



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Figure 2.8: Visual Simulation of the Proposed Project

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2.1.10.4 Avoidance, Minimization, and/or Mitigation Measures

Inclusion of aesthetic features in the project design can help generate public acceptance of the project. This section describes additional avoidance, minimization, and/or mitigation measures to address specific visual impacts associated with project implementation. These measures would be designed and implemented with concurrence of the District Landscape Architect. The following measures to avoid or minimize visual impacts would be incorporated into the project:

- AES-1:** Structural surfaces (such as retaining walls and soundwalls if required) and the facades for overcrossing infrastructure shall be designed with an aesthetically pleasing treatment that reflects state-of-the-art type selection and engineering standards, consistent with existing and future construction features and roadway design within the surrounding area and community.
- AES-2:** Screen planting shall be required as a “visual screen” where feasible to minimize viewer impacts from the proposed project. All plantings shall meet the requirement for Replacement Highway Planting as directed in the Caltrans Project Development Procedure Manual.
- AES-3:** Where feasible, landscape plantings shall be included on roadway slopes.

2.1.11 Cultural Resources

The following section discusses the efforts undertaken to identify and evaluate cultural resources within the Area of Potential Effects.

2.1.11.1 Regulatory Setting

The term “cultural resources” as used in this document refers to all “built-environment” resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act of 1966, as amended, sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places. Section 106 of National Historic Preservation Act of 1966 requires federal agencies to take into account the effects of their undertakings on such

properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 Code of Federal Regulations 800). On January 1, 2014, the first amended Section 106 Programmatic Agreement among between the Advisory Council, the Federal Highway Administration, State Historic Preservation Officer, Army Corps of Engineers, and Caltrans went into effect for Caltrans projects, both state and local, with Federal Highway Administration involvement. The Programmatic Agreement implements the Advisory Council's regulations, 36 Code of Federal Regulations 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The Federal Highway Administration's responsibilities under the Programmatic Agreement have been assigned to Caltrans as part of the Surface Transportation Project Delivery Program (23 U.S. Code 327).

Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the "use" of land from historic properties. With the exception of de minimis, see Appendix B for specific information on Section 4(f).

Historical resources are considered under the California Environmental Quality Act, as well as the California Public Resource Code Section 5024.1, which established the California Register of Historical Resources. California Public Resource Code Section 5024 requires state agencies to identify and protect state-owned resources that meet the National Register of Historic Places listing criteria. It further specifically requires Caltrans to inventory state-owned structures in its rights-of-way. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register or are registered or eligible for registration as California Historical Landmarks.

2.1.11.2 Affected Environment

Information in this section comes from the Archaeological Survey Report (October 2013 – as listed in Appendix E), Historical Resources Evaluation Report (July 2013 – as listed in Appendix E), Extended Phase One Proposal (September 2013 – as listed in Appendix E), and, Extended Phase One Report (January 2014 – as listed in Appendix E), which identify cultural resources within the Area of Potential Effects and evaluate these resources for inclusion in the National Register of Historic Places (National Register) and California Register of Historical Resources (California Register), to meet the requirements of California Environmental Quality Act and

Section 106 of the National Historic Preservation Act. Results of the evaluations, contacts with consulting parties, and potential effects to the cultural resources are presented in the Historic Property Survey Report (February 2014 – as listed in Appendix E).

The Area of Potential Effects is defined based on consideration of the expected direct and indirect effects to any cultural resources by the project. The area of direct effects encompasses all of the proposed ground disturbance and development activities and can be referred to as the Archaeological Area of Potential Effects. This includes grading for new on-ramps and off-ramps, drainage basins, and excavation for roadside drainage facilities, overhead sign foundations, and bridge piles, as well as effects to the ground's surface caused by equipment movement in and adjacent to the proposed construction locations and in staging areas. The vertical extent for the direct effects includes excavation and grading that would not exceed 50 feet below the present ground surface.

The area considered for indirect effects includes the area of direct effects and is extended to include adjoining real estate parcels with built-environment resources. *The project would have the potential to cause indirect effects (e.g., increased noise levels or alterations to the surrounding setting) to cultural resources on those parcels.* This extended area consists of two 500-foot-long segments of high-voltage power transmission lines and 27 small-to-medium-sized parcels used mainly for residential purposes. These areas are referred to as the Architectural Area of Potential Effects.

Consulting Parties

The Native American Heritage Commission and the Native American Coordinator for Caltrans District 10 identified nine Native American groups and individuals as having cultural ties to the project vicinity. As a result of various contacts by mail, telephone, email, and fax with representatives of those groups, three groups were identified who had concerns for the identification of cultural resources in the Area of Potential Effects.

The Chairperson of the California Valley Miwok Tribe and the Chairperson of the Nototumne/Northern Valley Yokuts both expressed interest in the project and provided representatives to observe portions of the field survey and geo-archaeological investigations. Both groups were given copies of the Historic Property Survey Report. The Director of the Buena Vista Rancheria Me-Wuk Indians requested and was sent a copy of the Archaeological Survey Report. As the

investigations found no resources of concern to them, the three interested groups had no further concerns, but they asked to be informed should resources be discovered during project construction. The other groups either stated that they had no concerns for the project or did not respond to the multiple inquiries.

Research

The staff of the Central California Information Center at California State University, Stanislaus conducted a records search for the Area of Potential Effects and a 1-mile radius of the Area of Potential Effects. The search found two state-owned bridges within the Area of Potential Effects, but no other previously recorded cultural resources. In addition, the search found that only small portions of the Area of Potential Effects had been examined by prior investigations.

The Native American Heritage Commission was contacted to identify any listings for the Area of Potential Effects in its Sacred Lands File. No listings were found, but the commission provided a list of local Native Americans and tribal representatives who might have information about cultural resources.

An initial inquiry for historical information on the project location was made through request letters with project maps sent to the Haggin Museum, Manteca Historical Society and Museum, and San Joaquin County Historical Society and Museum. No responses were received to the letters or follow-up phone calls, but research visits to the Manteca Historical Museum and the Manteca Branch of the Stockton–San Joaquin County Public Library did provide background records and other information for built-environment resources identified during the field surveys.

An Historical Resources Evaluation Report was prepared for the project and describes background research, interested parties consultation, and a field survey of the Area of Potential Effects. The report identified nine built-environment cultural resources 45 years old or older. The nine resources were evaluated for their eligibility for inclusion in the National Register of Historic Places and the California Register. Analysis of the background research and field survey information concluded that none of the nine resources are eligible, either individually or as a district, for inclusion in the National Register or the California Register and are not historical resources for the purposes of California Environmental Quality Act. The resources lack significant historical associations or do not possess historic integrity.

An Archaeological Survey Report documented the results of identification efforts to determine the presence archaeological resources in the Area of Potential Effects.

These efforts consisted of archival and background research, geological and soils research, contact with potentially interested parties, and field survey. The research and field survey found no archaeological resources, but the geological research found that the depositing of new sediments on old land surfaces at this location has the potential to preserve older land surfaces and any archaeological items as buried deposits.

To investigate this potential for buried archaeological deposits, a subsurface study was done and an Extended Phase I Report was prepared. The report describes the geologic context, field methods for excavation of backhoe trenches and one hand-excavated unit, sedimentary stratigraphy, and interpretation. The study found four major buried soils. Five radiocarbon dates ranging from 14,946 to 4500 before present were obtained on organic matter from buried soils to assess the timing and extent of landscape changes in the Area of Potential Effects. Although no buried archaeological sites were identified, evidence generated by this study indicated the Area of Potential Effects contains formerly stable alluvial landforms that were buried by younger alluvium at different times during the Holocene.

Results and Identified Cultural Resources

The cultural resource investigations identified nine built-environment cultural resources 45 years old or older in the Area of Potential Effects that were evaluated for their eligibility for inclusion in the National Register and the California Register. None of the nine resources are eligible, either individually or as a district, for inclusion in the National Register or the California Register and are not historic-era resources for the purposes of California Environmental Quality Act. The resources lack significant historical associations or do not possess historic integrity. The State Historic Preservation Officer concurs with the determinations of eligibility for these cultural resources:

- **18771 McKinley Avenue** – At 18771 McKinley Avenue in the City of Manteca. Determined ineligible for National Register status.
- **Transmission Line Segments** – Span McKinley Avenue near the Union Pacific Railroad in the City of Manteca. Determined ineligible for National Register status.
- **19020 McKinley Avenue** – At 19020 McKinley Avenue in the City of Manteca. Determined ineligible for National Register status.

- **19160 McKinley Avenue** – At 19160 McKinley Avenue in the City of Manteca. Determined ineligible for National Register status.
- **19365 McKinley Avenue** – At 19365 McKinley Avenue in the City of Manteca. Determined ineligible for National Register status.
- **19465 McKinley Avenue** – At 19465 McKinley Avenue in the City of Manteca. Determined ineligible for National Register status.
- **19589 McKinley Avenue** – At 19589 McKinley Avenue in the City of Manteca. Determined ineligible for National Register status.
- **2693 Bronzan Road** – At 2963 Bronzan Road in the City of Manteca. Determined ineligible for National Register status.
- **2785 Bronzan Road** – At 2485 Bronzan Road in the City of Manteca. Determined ineligible for National Register status.

The investigations identified two State-owned bridges in the Area of Potential Effects. As listed in the Caltrans Historic Highway Bridge Inventory, these bridges are “Category 5,” not eligible for listing on the National Register, and are not historical resources for purposes of the California Environmental Quality Act:

- **McKinley Avenue Undercrossing, 290273R** - bridge built in 1980
- **McKinley Avenue Undercrossing, 290273L** - bridge built in 1995

2.1.11.3 Environmental Consequences

There are no Section 4(f) resources in the Area of Potential Effects, there are no cultural resources in the Area of Potential Effects that are eligible for listing in the National Register, and there are no historical resources for purposes of California Environmental Quality Act. As such, and in accordance with Section 106, since no historic properties were identified in the Area of Potential Effects, a finding of “No Historic Properties Affected” is appropriate for the project. The State Historic Preservation Officer concurred with this finding on April 1, 2014.

No archaeological resources have been identified in the Area of Potential Effects; however, the possibility exists that previously unknown buried historical and archaeological deposits could be discovered during grading and excavation work associated with construction activities. If such cultural resources are discovered, avoidance measures identified below would be implemented to ensure such sensitive cultural resources are not adversely affected due to project implementation.

No human remains, including those of Native American descent, are known to exist within the Area of Potential Effects. If during construction of the project, undocumented human remains are uncovered, avoidance measures identified below would be implemented to ensure that adverse effects do not occur due to project implementation.

2.1.11.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance measures would be implemented in the event that cultural resources or human remains are identified during construction activities:

- CULT-1:** Prior to any ground disturbance, a qualified archaeologist shall conduct a preconstruction meeting to orient the construction crew to the potential for encountering prehistoric archaeological deposits during construction. This instructional meeting would also include a discussion of the types of artifacts that could be encountered and the steps to take upon discovery to avoid inadvertent impacts to such finds.
- CULT-2:** If cultural materials are discovered during construction, all earth-moving activity within 33 feet of the find shall be diverted until a qualified archaeologist can assess the nature and significance of the find. If the cultural materials are Native American in origin, Native American groups shall be contacted.
- CULT-3:** If human remain are encountered during project activities, the project shall comply with the requirements of California Health and Safety Code Section 7050.5. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of San Joaquin County has determined the manner and cause of any death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his/her authorized representative. At the same time, an archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. Project personnel/construction workers shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of

this identification. The Native American Heritage Commission would identify a Native American Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

2.2 Physical Environment

This section provides analysis to determine if project implementation would have an adverse effect on the Physical Environment. The Physical Environment includes analysis of the following topics: Water Quality and Stormwater Runoff, Geology/Soils/Seismic/Topography, Paleontology, Hazardous Waste/Materials, Air Quality, and Noise.

2.2.1 Water Quality And Storm Water Runoff

This subsection provides analysis on possible adverse effects to water quality and stormwater runoff due to implementation of the project.

2.2.1.1 Regulatory Setting

Federal Requirements: Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States from any point source unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System permit. This act and its amendments are known today as the Clean Water Act. Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of stormwater from municipal and industrial/construction point sources to comply with the National Pollutant Discharge Elimination System permit scheme. The following are important Clean Water Act sections:

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the United States to obtain certification from the state that the discharge will comply with other provisions of the act. Section 401 is most frequently required in tandem with a Section 404 permit request (see below).
- Section 402 establishes the National Pollutant Discharge Elimination System, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the United States. The Regional Water Quality Control Board administers this permitting program in California. Section 402(p) requires permits for discharges of stormwater from industrial/construction and municipal separate storm sewer systems.

- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the United States. This permit program is administered by the U.S. Army Corps of Engineers.

The goal of the Clean Water Act is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”

The U.S. Army Corps of Engineers issues two types of 404 permits: General and Standard Permits. Two types of General permits include: Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under the U.S. Army Corps of Engineers Standard permits. Two types of Standard permits include: Individual permits and Letters of Permission. For Standard permits, the U.S. Army Corps of Engineers decision to approve is based on compliance with U.S. Environmental Protection Agency Section 404 (b)(1) Guidelines (U.S. Environmental Protection Agency Code of Federal Regulations [CFR] 40 Part 230), and whether permit approval is in the public interest. The Section 404(b) (1) Guidelines (Guidelines) were developed by the U.S. Environmental Protection Agency in conjunction with U.S. Army Corps of Engineers, and allow the discharge of dredged or fill material into the aquatic system (waters of the United States) only if there is no practicable alternative which would have lesser adverse effects.

The Guidelines state that the U.S. Army Corps of Engineers may not issue a permit if there is a least environmentally damaging practicable alternative to the proposed discharge that would have lesser effects on waters of the United States, and not have any other significant adverse environmental consequences. According to the Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause “significant degradation” to waters of the United States. In addition, every permit from the U.S. Army Corps of Engineers, even if not subject to the Section 404(b) (1) Guidelines, must meet general requirements. See 33 CFR 320.4. A

discussion of the U.S. Environmental Protection Agency determination, if any, for the document is included in Subsection 2.3.2.

State Requirements: Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the Clean Water Act and regulates discharges to waters of the state. Waters of the state include more than just waters of the United States and include groundwater and surface waters not considered waters of the United States. Also, it prohibits discharges of "waste" as defined, and this definition is broader than the Clean Water Act definition of "pollutant". Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements and may be required even when the discharge is already permitted or exempt under the Clean Water Act.

The State Water Resources Control Board and Regional Water Quality Control Boards are responsible for establishing the water quality standards (objectives and beneficial uses) required by the Clean Water Act and regulating discharges to ensure compliance with the water quality standards. Details about water quality standards in a project area are included in the applicable Regional Water Quality Control Board Basin Plan. In California, Regional Water Quality Control Boards designate beneficial uses for all water body segments in their jurisdictions and then set criteria necessary to protect these uses. As a result, the water quality standards developed for particular water segments are based on the designated use and vary depending on that use.

In addition, the State Water Resources Control Board identifies waters failing to meet standards for specific pollutants. These waters are then state-listed in accordance with Clean Water Act Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-point source controls (National Pollutant Discharge Elimination System permits or Waste Discharge Requirements), the Clean Water Act requires the establishment of Total Maximum Daily Loads. Total Maximum Daily Loads specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The State Water Resources Control Board administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, Total Maximum Daily Loads, and National Pollutant Discharge Elimination System permits. Regional Water Quality Control Boards are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

- **National Pollutant Discharge Elimination System Program**

Municipal Separate Storm Sewer Systems

Section 402(p) of the Clean Water Act requires the issuance of National Pollutant Discharge Elimination System permits for five categories of stormwater discharges, including Municipal Separate Storm Sewer Systems. A municipal separate storm sewer system is defined as “any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over stormwater, that is designed or used for collecting or conveying stormwater.” The State Water Resources Control Board has identified the Caltrans as an owner/operator of a municipal separate storm sewer system under federal regulations. Caltrans municipal separate storm sewer system permits cover all rights-of-way, properties, facilities, and activities in the state. The State Water Resources Control Board or the Regional Water Quality Control Board issues National Pollutant Discharge Elimination System permits for five years, and permit requirements remain active until a new permit has been adopted.

Caltrans municipal separate storm sewer system Permit (Order No. 2012-0011-DWQ) was adopted on September 19, 2012 and became effective on July 1, 2013. The permit has three basic requirements:

1. Caltrans must comply with the requirements of the Construction General Permit (see below).
2. Caltrans must implement a year-round program in all parts of the state to effectively control stormwater and non-stormwater discharges.
3. Caltrans stormwater discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices, to the Maximum Extent Practicable, and other measures as the State Water Resources Control Board determines to be necessary to meet the water quality standards.

To comply with the permit, Caltrans developed the Statewide Stormwater Management Plan to address stormwater pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The Stormwater Management Plan assigns responsibilities within Caltrans for implementing stormwater management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The Stormwater Management Plan describes the minimum procedures and practices Caltrans uses to reduce pollutants in stormwater and non-stormwater discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of Best Management Practices. The proposed project will be programmed to follow the guidelines and procedures outlined in the latest Stormwater Management Plan to address stormwater runoff.

Construction General Permit

Construction General Permit (Order No. 2009-009-DWQ), adopted on September 2, 2009, became effective on July 1, 2010. The permit regulates stormwater discharges from construction sites that result in a Disturbed Soil Area of 1 acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all stormwater discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least 1 acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than 1 acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity

as determined by the Regional Water Quality Control Board. Operators of regulated construction sites are required to develop stormwater pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory stormwater runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Stormwater Pollution Prevention Plan. In accordance with the Caltrans Standard Specifications, a Water Pollution Control Plan is necessary for projects with Disturbed Soil Area less than 1 acre.

Section 401 Permitting

Under Section 401 of the Clean Water Act, any project requiring a federal license or permit that may result in a discharge to a water of the United States must obtain a 401 Certification, which certifies that the project complies with state water quality standards. The most common federal permits triggering 401 Certification are Clean Water Act Section 404 permits issued by the U.S. Army Corps of Engineers. The 401 permit certifications are obtained from the appropriate Regional Water Quality Control Board, dependent on the project location, and are required before the U.S. Army Corps of Engineers issues a 404 permit.

In some cases, the Regional Water Quality Control Board may have specific concerns with discharges associated with a project. As a result, the Regional Water Quality Control Board may issue a set of requirements known as Waste Discharge Requirements under the State Water Code (Porter-Cologne Act) that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. Waste Discharge Requirements can be issued to address both permanent and temporary discharges of a project.

2.2.1.2 Affected Environment

Water quality in an area depends on several factors, including population and land use, topography, regional and local hydrological conditions, geology and soils, and

biological communities. The Water Quality Assessment Report (June 2014 – as listed in Appendix E) provides information on each of these factors in full detail. The following information pertains to the water quality and stormwater runoff of the City of Manteca and the project site.

Water Quality

Water quality summaries for San Joaquin County are used to determine impacts on beneficial uses and focus areas for future planning and best management efforts. The Regional Water Quality Control Board’s regulatory “Basin Plan Water Quality Objectives” and the Maximum Contaminant Levels were exceeded in specific areas throughout San Joaquin County.

The project site is in a water subbasin identified as the Eastern San Joaquin Area. Groundwater in the Eastern San Joaquin Area subbasin is characterized as calcium-magnesium bicarbonate or calcium-sodium bicarbonate water types. Indications of contaminations include high concentration of chlorides, salinity intrusion, and some nitrate and arsenic in the Eastern San Joaquin Area subbasin. Large areas of water containing chlorides occur along the San Joaquin River, resulting from salinity intrusion from the west. Based on the analysis of 174 supply wells in the Eastern San Joaquin Area subbasin total dissolved solids values ranged from 30 to 1,632 milligrams per liter with an average near 300 milligrams per liter. Other studies done in the subbasin have indicated total dissolved solids values exceeding 3,500 milligrams per liter. Declining water levels and increasing salinity intrusion are major concerns in the Eastern San Joaquin Area subbasin.

The City of Manteca has high groundwater levels and, therefore, is not affected by Eastern San Joaquin Area salinity. The city’s wells produce groundwater that meet or exceed the State Department of Health Services recommended drinking water quality standards. Therefore, groundwater quality is not a concern in the City of Manteca.

Impaired surface waters within San Joaquin County are those listed by the Central Valley Regional Water Quality Control Board as impaired due to one or more pollutants. The Federal Clean Water Act, Section 303(d) requires the regional water quality control boards to prepare a list of water bodies with pollutant levels in excess of the standards established to protect the beneficial uses of the water. The latest update of this list was published by Central Valley Regional Water Quality Control Board in 2006. The impaired waterways include Calaveras River, Camanche Reservoir, Cosumnes River, the Delta waterways, Five mile Slough, Middle River,

Mokelumne River, Mormon Slough, Mosher Slough, San Joaquin River, and Stanislaus River. Most of these rivers are contaminated due to urban and agricultural runoff and resource extraction. Central Valley Regional Water Quality Control Board plans forecast that the Total Maximum Daily Load would be met for these water bodies between 2010 and 2020.

The closest Section 303(d) impaired surface waterway to the City of Manteca is the San Joaquin River. Land uses and activities within the City of Manteca contribute to impairment of surface waters including construction activities, agricultural land uses, dairy land, urban runoff, and the City's wastewater treatment plant.

Construction Activity in Manteca: Construction activity impacts water quality in the city 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 that empty to surface waters.

Agricultural Activity in Manteca: Water runoff from irrigated agricultural fields within the city contains fertilizers and pesticides. Improper use and disposal of farm chemicals can contaminate surface water 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 in the city.

Dairy Farming Activity in Manteca: A dairy farm sits in the city along Airport Way north of Yosemite Avenue. Waters from confined animals can cause pollution in nearby surface waters within the city. The wastes associated with dairy farming include nitrate, ammonia, bacteria, and total dissolved solids.

Urban Runoff in Manteca: Urban runoff in the city includes household chemicals (including pesticides, herbicides, and paints) as well as petroleum products from automobiles and landscaping equipment. Municipal sources of pollution include City yards where transportation, fueling, and maintenance activities occur.

Wastewater Treatment Plant in Manteca: Discharge from the City's wastewater treatment plant may produce high coliform counts, elevated temperatures, pH changes, increased turbidity, and low dissolved oxygen in surface water bodies within the city.

The project site sits in an area that contains wetlands. No other surface water areas of concern are present within or next to the project site.

A total of 5.9 acres of potential seasonal wetlands in the project area were identified in field surveys performed on August 15, 2012 and September 20, 2012. These wetlands, totaling 5.9 acres, were seen in four distinct depressions within the project area; two depressions were southwest of the McKinley Avenue overpass (in the southwest quadrant of the project site), and two depressions were northeast of the McKinley Avenue overpass (in the northeast quadrant of the project site). Based on the topography of the area around the project site, all four depressions appear to be isolated and have no connectivity to navigable waters of the United States.

The largest feature, a 5.45-acre depression northeast of the McKinley Avenue overpass, is about 5 feet lower in elevation than the surrounding topography. This depression collects surface runoff from the surrounding lands; a ditch along the north side of State Route 120 that collects roadway and other surface runoff also flows into the depression. No waters of the United States flow into this feature, and there are no outlets to waters of the United States. A smaller depression (0.10 acre) is east of and next to the large depression in this quadrant; the two depressions are separated only by a small berm. The smaller depression has the same hydrology characteristics as the larger feature in this quadrant. The remaining two depressions southwest of the McKinley Avenue overpass (0.30 and 0.05 acre) are shallow depressions at the toe of the State Route 120 embankment. These depressions collect only local surface runoff. No waters of the United States flow into these features, and there are no outlets to waters of the United States.

Stormwater Runoff

The South San Joaquin Irrigation District operates drainage facilities within the City of Manteca carrying a portion of the city's drainage. Due to the topography of the city, these drainage facilities generally follow along an east-to-west alignment. However, in some instances where subdivisions have been developed near irrigation laterals, drainage pumping stations have been installed in lieu of long trunk lines to drains. Water from South San Joaquin Irrigation District 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 City north to French Camp Canal.

The City of Manteca's goal is to collect, store, and meter the stormwater into the terminal drainage conduits and channels. Individual development plans in the City of Manteca are required to provide onsite detention/retention designed to reduce the peak flow. Typically, 7 to 10 percent of the land in such developments is required to be designated for onsite detention/retention. All stormwater in the City of Manteca flows to retention basins to help control both the quality and quantity of stormwater runoff discharge to the City's main drainage system and ultimately the San Joaquin River.

2.2.1.3 Environmental Consequences

Potential impacts to water quality and stormwater runoff can be attributed to soil erosion and suspended solids being introduced into surface waters. Minimization measures for construction and operational impacts would focus on the control of sediment and suspended solids from entering the wetland areas around the project site and containment of runoff into the 12 onsite retention basins. The construction activities needed to complete the project may have an adverse effect, although temporary, on the water quality of the wetlands within the project site boundary. Commonly used Best Management Practices would be required during construction activities to minimize any potential impacts to the maximum extent possible.

Construction of the project would start in early 2017, and the project would be operational by early 2020. The project would be developed in a 30-month time period in four distinct construction phases. During construction of the project, equipment would be used, increasing the chance that accidental spills or releases of fuels, oils, or other potentially toxic materials could occur within the site boundary. No streams or waterways run within or near the project site that could be exposed to such pollutants during construction activities. During construction, any runoff that is generated would be temporarily conveyed to the existing wetland areas where runoff from existing land uses currently flows.

During construction, disturbed soil areas would be created totaling 55.5 acres. Because more than 1 acre of soil is being disturbed during construction, the project applicant would be required to prepare a Stormwater Pollution Prevention Plan, pursuant to the Construction General Permit Order 2009-0009-DWQ, which became effective on July 1, 2010 for the project. The Stormwater Pollution Prevention Plan would include measures to avoid and reduce potential impacts to water quality during project construction by incorporating applicable temporary construction site-specific Best Management Practices. These practices would be selected as part of the

Stormwater Pollution Prevention Plan to employ the Best Available Technology economically achievable and Best Conventional Pollutant Control Technology to reduce or eliminate pollutants in construction site stormwater runoff.

Six potential categories of Best Management Practices that could be implemented for construction activities for the project would include:

- Soil stabilization practices
- Sediment control practices
- Tracking control practices
- Wind erosion control
- Non-stormwater controls
- Waste management and material pollution controls

Furthermore, additional Best Management Practices may be implemented during the construction process, including but not limited to:

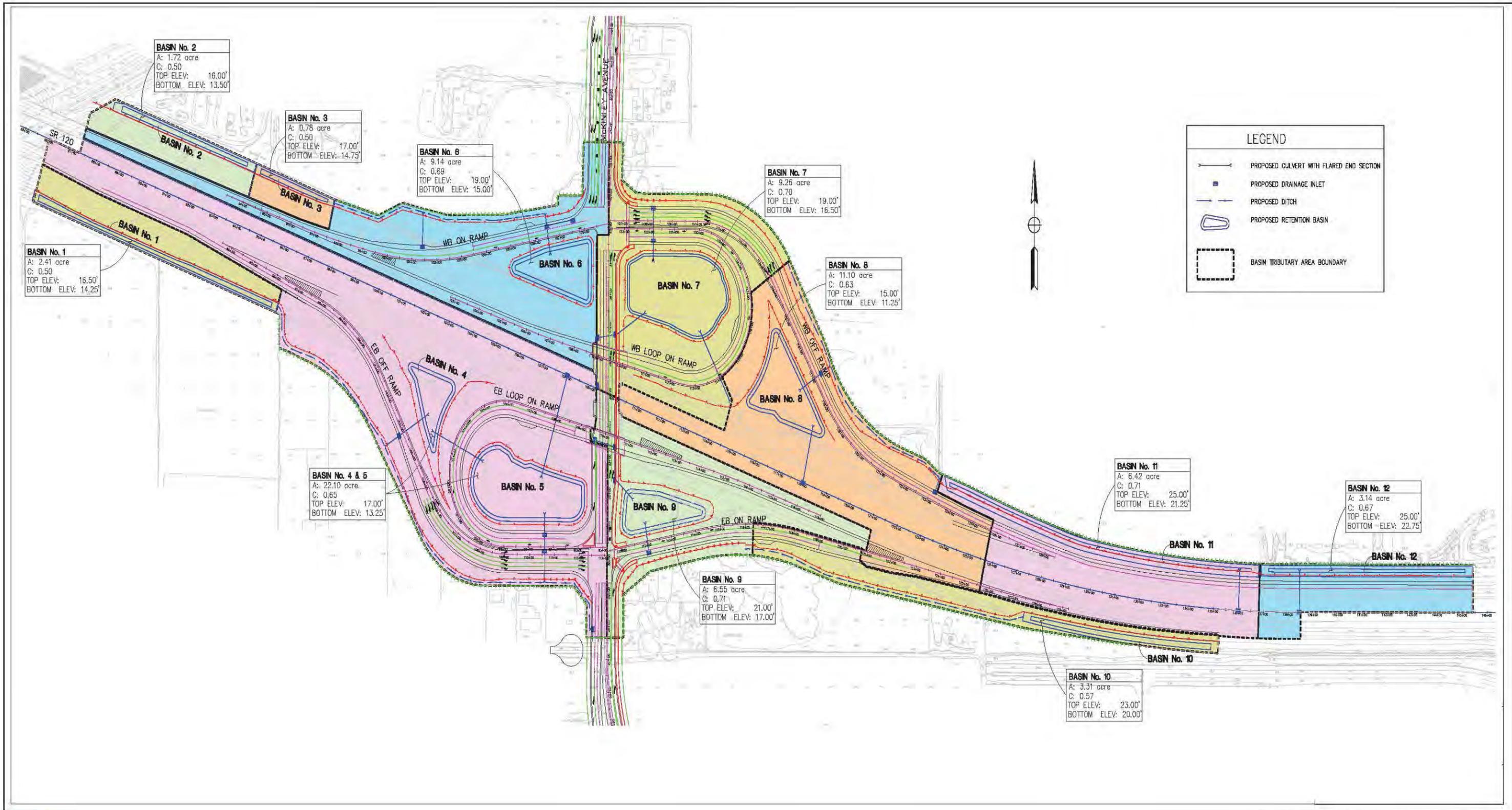
- Water pollution control maintenance sharing
- Additional water pollution control
- Stormwater sampling and analysis
- Job site management
- Stormwater annual report
- Move-in/move-out (temporary erosion control)
- Temporary hydraulic mulch
- Temporary soil binder
- Temporary drainage inlet protection
- Temporary fiber roll
- Temporary silt fence
- Temporary construction entrance
- Street sweeping
- Temporary cover
- Temporary concrete washout
- Temporary environmental sensitive area fencing

Minimization measures presented below would be implemented to ensure that a Stormwater Pollution Prevention Plan and construction Best Management Practices are applied during construction of the project so that stormwater is correctly conveyed and retained onsite.

The project includes a new interchange at the McKinley Avenue undercrossing along State Route 120, as well as improvements to both McKinley Avenue and State Route 120. Wetland areas sit within the northeast and southwest quadrants of the project site. Four distinct wetland areas, totaling 5.9 acres, sit within the project boundary. Minimization measures provided in the Natural Environment Study prepared for the project would reduce stormwater runoff to these wetland areas within the project boundary. No receiving waters would be affected by the project throughout the operational cycle because the project would not discharge into any surface water bodies. The closest surface water body is the San Joaquin River, about 4 miles southwest of the project site.

To control stormwater runoff and reduce water quality issues, the project would be developed to incorporate 12 retention basins in the design, as shown in Figure 2.9.

Table 2.10 shows the retention basin size, total runoff amount expected to infiltrate each basin during project operation, retention basin capacity, and the retention basin depth.



State Route 120/McKinley Avenue Interchange
 Manteca, San Joaquin County, California
 10-SJ-120-PM 1.9-3.0
 EA 10-0H8900

Figure 2.9: Location of Project Retention Basins

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Table 2.10 Retention Basin Characteristics of the Proposed Project

Retention Basin ID	Retention Basin Size (acres)	Total Runoff Amount (acre-feet)	Retention Basin Capacity (acre-feet)	Retention Basin Depth (feet)
1	2.41	0.21	0.49	2.25
2	1.72	0.15	0.38	2.50
3	0.78	0.07	0.15	2.25
4 and 5	22.1	1.31	5.43	3.75
6	9.14	0.47	2.27	4.00
7	9.26	0.46	2.64	2.50
8	11.10	1.25	2.57	3.75
9	6.55	0.83	1.77	4.00
10	3.31	0.33	0.72	3.00
11	6.42	0.81	1.59	3.75
12	3.14	0.38	0.74	2.25
Total	75.93	6.27	18.75	--

Source: McKinley Avenue/State Route 120 Project, Long Form-Stormwater Data Report, May 14, 2013.
Notes: ¹ The total stormwater amount comes from a combination of the following: runoff volume from new impervious surfaces; runoff volume from existing impervious area; and runoff volume from pervious areas of the project site.

All stormwater runoff associated with the project would be conveyed and retained in these basins indefinitely. The northeast quadrant of the project site would be developed with retention basins 7, 8, 11, and 12; the southeast quadrant would contain retention basins 9 and 10; the southwest quadrant would be developed with retention basins 1, 4, and 5; and, the northwest quadrant would contain retention basins 2, 3, and 6. The retention basins would total 75.93 acres and would be designed to retain 18.75 acre-feet (816,740 cubic feet) of water.

The retention basins would be sized to fully contain the stormwater runoff created by two consecutive 10-year 24-hour storm events with adequate storage room remaining. In the event that two consecutive 10-year 24-hour storm events occur, it is estimated that the project would generate an estimated 6.27 acre-feet (388,037 cubic feet) of stormwater runoff that would be retained within the 12 onsite retention basins. Therefore, during such an event, the retention basins would operate at 33.44 percent of their capacity.

The project would be designed for operational use that would minimize stormwater runoff impacts by limiting the disturbance of existing vegetation, using all appropriate design pollution prevention techniques, and implementing treatment (operational) Best Management Practices. Such practices would include, but are not limited to, the following:

- Include water pollution control measures such as silt fences, fiber rolls, and hydroseeding at disturbed soil areas.
- Incorporate slope rounding to reduce concentrated flows.
- Minimize and construct as flat as feasible cut and fill slopes to allow revegetation and limit erosion.
- Provide maintenance vehicle pull-outs to allow easy access to Best Management Practices.

A Water Quality Assessment Report (June 2014) was prepared for the project per the Caltrans Stormwater Quality Handbooks Project Planning and Design Guide to determine the types of operational Best Management Practices that would need to be implemented. The following provides information on the operational Best Management Practices that were considered to be implemented and the operational Best Management Practices that would be implemented in the project's design per the Caltrans Design Pollution Prevention BMP Checklist as provided in the Stormwater Data Report:

Downstream Effects Related to Potentially Increased Flow (Checklist, Parts 1 and 2)

- No streams or waterways are within or near the boundary of project. The project, during operation, would not discharge stormwater into any surface water bodies but would retain the stormwater onsite in retention basins within the project right-of-way. Therefore, no downstream effects related to potentially increased flows would occur and no Best Management Practices would be required regarding this subject.

Slope/Surface Protection Systems (Checklist, Parts 1 and 3)

- No high cut or fill slopes are proposed within the project boundary; therefore, Best Management Practices associated with benches or terraces would not be incorporated into the operational design of the project site.
- Existing cut and fill slopes within the project would be disturbed. New embankments would be developed within the project site, with slope ratios 4:1 or flatter except along portions of eastbound and westbound State Route 120 where embankments would be developed with slope ratios between 2:1 and 4:1.
- The 12 retention basins developed within the project boundary would have embankments with slope ratios of 3:1 or flatter.
- The project would include new landscaping. Cut and fill slopes would be vegetated to prevent erosion and to filter potential pollutants in the stormwater

runoff generated by the proposed project. Slopes would be rounded or shaped to reduce concentrated flows that are collected in stabilized ditches throughout the project site.

Concentrated Flow Conveyance Systems (Checklist, Parts 1 and 4)

- The project would include concrete barriers, curbs, and hot mix asphalt dikes along the edge of McKinley Avenue and State Route 120 shoulders to intercept and direct surface water runoff to inlet structures that would connect to the 12 onsite retention basins.
- The project would include downdrains that would be installed (throughout the project site) along embankment slopes to convey concentrated flows of runoff.
- The project would include installation of rock slope protection and flared end section protection at pipe outfalls within the retention basins.

Preservation of Existing Vegetation (Checklist, Parts 1 and 5)

- The project would include clearing and grubbing of some areas of existing vegetation. However, existing vegetation would be preserved as much as possible to provide erosion- and sediment-control benefits. Additional landscaping would be provided in areas throughout the project site.
- Installation of temporary Environmental Sensitive Area fencing would occur as part of the project to protect the existing wetland areas in the northeast and southwest quadrants.

Considering that the project would not discharge stormwater runoff into nearby surface waters, project proponents would not be required to provide permanent treatment Best Management Practices. With implementation of the Best Management Practices described above, the project would ensure that water quality issues are within standards during operation with no adverse effects to water quality and stormwater runoff. Minimization measures would not be required for operation of the project.

2.2.1.4 Avoidance, Minimization, and/or Mitigation Measures

The following water quality minimization measures would be implemented for construction activities on the project site:

- WQ-1:** A Stormwater Pollution Prevention Plan prepared by the project contractor shall be submitted to the Regional Water Quality Control Board 30 days prior to the start of construction activities. The Stormwater Pollution Prevention Plan is required since the proposed

project would create a Disturbed Soil Area totaling 55.5 acres (more than 1.0 acre of soil is being disturbed). Within the Stormwater Pollution Prevention Plan, the contractor shall develop Best Management Practices used during construction activities to reduce the amount of runoff that would avoid and reduce the potential impacts to water quality onsite and offsite. The Stormwater Pollution Prevention Plan shall incorporate the applicable temporary construction site Best Management Practices for the proposed project. The Stormwater Pollution Prevention Plan shall be developed with site-specific Best Management Practices selected to employ the Best Available Technology to reduce or eliminate pollutants in construction site stormwater runoff.

WQ-2: The project contractor, thirty (30) days prior to start of construction, shall develop and submit to the Regional Water Quality Control Board a Notice of Construction. Once construction is completed, the project contractor shall submit a Notice of Construction Completion to the Regional Water Quality Control Board.

WQ-3: All new drainage inlets located adjacent to pedestrian facilities along McKinley Avenue shall be marked with plaques, tiles, painted or pre-cast messages warning citizens not to dump pollutants into the drain. The messages shall be a simple phrase or graphic to remind those passing by that the storm drains connect to local water bodies and that dumping will pollute those waters. Storm drain marker shall specify which water body the inlet drains to or name the particular river, lake, or bay. Messages that could be (but are not limited) used include: “No Dumping. Drains to Water Source.”; “Drains to River”; and/or “You Dump it, You Drink it. No Waste Here.” Stencil types and messages shall be approved by the Manteca Public Works Department and shall conform to similar design and types used throughout the City.

Implementation of these minimization measures as well as construction Best Management Practices discussed in the Stormwater Pollution Prevention Plan would ensure that stormwater flows are conveyed and retained properly onsite and that surface water quality would not be adversely affected during construction activities.

During operation, the project would not discharge stormwater or pollutants to surface water bodies because there are none within or near the project site. All stormwater would be conveyed to 12 onsite retention basins that would be designed to collect and retain the estimated amount of runoff that would be generated during two consecutive 10-year 24-hour storm events. Also, Best Management Practices described above would be incorporated into the design of the project to reduce potential operational adverse effects to water quality and stormwater runoff. Therefore, operational minimization measures would not be required.

2.2.2 Geology/Soils/Seismic/Topography

The following section describes the geology, soils, seismic conditions, and topography of the project site and the susceptibility to adverse effects from geological events. Information in this section came from the County of San Joaquin General Plan, City of Manteca General Plan, and the Preliminary Geotechnical Report (December 2012 – as listed in Appendix E) prepared for the project.

2.2.2.1 Regulatory Setting

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects “outstanding examples of major geological features.” Topographic and geologic features are also protected under the California Environmental Quality Act.

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. The Caltrans Office of Earthquake Engineering is responsible for assessing the seismic hazard for Caltrans projects. Structures are designed using the Caltrans Seismic Design Criteria. The Seismic Design Criteria provide the minimum seismic requirements for highway bridges designed in California. A bridge’s category and classification will determine its seismic performance level and which methods are used for estimating the seismic demands and structural capabilities. For more information, please see the Caltrans Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

2.2.2.2 Affected Environment

Geological Conditions

The project is in the City of Manteca in the northern part of the San Joaquin Valley in the southern section of the Great Central Valley of California. The San Joaquin Valley contains thousands of feet of alluvial material derived from the Sierra Nevada Mountains and locally deposited through geologic processes. Based on geologic mapping done by the California Geological Survey, the project site is underlain by the Modesto Formation. The Modesto

low shrink-swell potential and is estimated to have an erodibility rate of 5 tons of soil per acre per year.

- **Soil 108 (Arents, saline-sodic, 0 to 2 percent slopes)** – This soil type is somewhat poorly drained, nearly level and is located in areas on low alluvial fans or fan terraces where ripping, cutting, or filling has altered the landscape. It is moderately deep or deep to a hardpan or is very deep. It was formed in alluvium derived from mixed rock sources. Most areas of this soil are used for irrigated crops or pasture. This soil may provide wetland functions and values. The San Joaquin County soil survey did not provide a rating for the shrink-swell and erodibility potentials of this soil.
- **Soil 142 (Delhi loamy sand, 0 to 2 percent slopes)** – This soil type is very deep, somewhat excessively drained, nearly level and is located on dunes. This soil formed in wind-modified alluvium derived from granitic rock sources. Most areas of this soil are used for irrigated crops, orchards, or vineyards. This soil has a low shrink-swell potential and is estimated to have an erodibility rate of 5 tons of soil per acre per year.
- **Soil 254 (Timor loamy sand, 0 to 2 percent slopes)** – This soil type is moderately well drained, nearly level, and is located on low fan terraces. It is deep to a hardpan and formed in alluvium derived from granitic rock sources. Most areas are used for irrigated crops or irrigated pastureland while few areas are used for homesite development. This soil has a low shrink-swell potential and is estimated to have an erodibility rate of 5 tons of soil per acre per year.
- **Soil 266 (Veritas fine sandy loam, 0 to 2 percent slopes)** – This soil type is moderately well drained, nearly level, and is located on low fan terraces. It is deep to a hardpan and was formed in alluvium derived from mixed rock sources. This soil is suited for irrigated crops, orchards, or vineyards and a few areas are used as irrigated pasture or for homesite development. This soil has a low shrink-swell

potential and is estimated to have an erodibility rate of 3 tons of soil per acre per year.

- **Soil 109 (Bisgani loamy coarse sand, partially drained, 0 to 2 percent slopes)**
 - This soil type is very deep, poorly drained, nearly level and is found on low alluvial fans. This soil formed on alluvium derived from granitic rock sources. This soil is used for irrigated crops and a few areas are used as irrigated pasture or for homesite development. This soil has a low shrink-swell potential and is estimated to have an erodibility rate of 5 tons of soil per acre per year.

Seismicity Hazards

Seismic hazards are a risk or danger to the human environment due to existence of active or potentially active earthquake faults. An earthquake typically occurs when a sudden slip along a fault occurs resulting in different levels of ground shaking. Earthquake events also generate hazards including surface faulting, ground shaking, landslides, liquefaction, tectonic deformation, tsunamis, and seiches. 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.

The project site is not within an Alquist-Priolo Earthquake Fault Zone as established by the California State Geologist. A review of available literature and field study indicated no active fault trace through or near the project site. The project site is about 13 miles northeast of the Great Valley Fault-Segment 7 and about 58 miles north-northeast of the San Andreas Fault (Santa Cruz Mountains Section). The Great Valley Fault-Segment 7 and San Andreas Fault (Santa Cruz Mountains Section) are capable of producing a maximum magnitude 6.7 and 7.9 earthquake event, respectively.

Liquefaction is a phenomenon in which loose, saturated, and relatively cohesionless soil deposits beneath the groundwater table lose strength during strong ground motions. Primary factors controlling liquefaction include intensity and duration of ground accelerations, characteristics of the subsurface soil, in-situ stress conditions, and depth to groundwater. The potential for liquefaction at the project site is considered low due to the dense nature of the alluvium at the project site.

As a result of strong ground movements, seismic-induced settlement may be expected in areas underlain by liquefiable soils, unconsolidated alluvial deposits, and/or loose granular soils. The potential for seismic-induced settlement at the site is considered

low due to the dense nature of the alluvial deposits underlying the surface soils on the project site.

Seismically induced landslides typically occur in areas with unstable hills, cliffs, and/or mountains. The project site is topographically flat and is not in an area that would have the potential for seismically induced landslides.

Tsunamis are large sea waves caused by submarine earthquakes, landslides, or volcanic eruptions. A seiche is defined as a free or standing wave oscillation of the water surface in an enclosed basin such as a lake or reservoir. The potential for tsunamis and/or seiches to occur on the project site does not exist due to the distance of the project site from the Pacific Ocean and enclosed bodies of water.

Topography

The project site and surrounding area is topographically flat, similar to much of the San Joaquin Valley. McKinley Avenue lies within about 2 to 3 feet above natural grade with roadway elevations about 18 feet mean sea level at the intersection with State Route 120. Embankment fills of up to about 20 feet high exist along State Route 120 to create grade separation over McKinley Avenue. The existing undercrossing bridges on eastbound and westbound State Route 120 are built atop the embankment fill materials. Slopes that descend from the existing westbound State Route 120 bridge abutments range from about 1.5:1 (horizontal:vertical) to 20:1. Surface elevations on the northern undercrossing structures are about 38 to 39.5 feet above mean sea level.

Mineral Resources

According to the City of Manteca General Plan, the California Division of Mines and Geology has identified and designated one location within the city as an MRZ-2 Zone, Significant Mineral Resource Zone. The designated area is near the San Joaquin River and is not near or within the boundary of the project site.

2.2.2.3 Environmental Consequences

The project is in the City of Manteca within San Joaquin County. San Joaquin County is a seismically active region, in a Seismic Zone 3 as defined by the Uniform Building Code. Building standards and regulations in this zone assume earthquakes have the potential to make standing difficult and to cause stucco and some masonry walls to fail. Transportation uses (roadways, freeways, highways, overpasses) are not expected to be damaged or destroyed in areas designated as Seismic Zone 3.

The project site is about 13 miles northeast of the Great Valley Fault-Segment 7 and about 58 miles north-northeast of the San Andreas Fault-Santa Cruz Mountain Section. The Great Valley Fault and San Andreas Fault are the two closest active faults to the project site, and they are estimated to generate a maximum magnitude earthquake of 6.7 and 7.9, respectively. No faults or fault traces are within or near the project boundary, and the project site is not within a designated Alquist-Priolo Earthquake Fault Zone. Due to the distance from the project site to active faults, it is estimated that low to moderate ground shaking would occur at the site. The project would be designed and developed to meet the Caltrans Seismic Design Criteria to withstand such seismic activities. Therefore, implementation of the project would not expose people or structures to potential adverse effects including the risk of loss, injury, or death involving earthquakes.

According to the City of Manteca General Plan, the project site is not in an area known for seismically induced liquefaction events. The potential for liquefaction to occur at the site is considered low due to the dense nature of the alluvium underlying the soils. As a result of strong motions, seismically induced settlement may be expected in areas underlain by liquefiable soils, unconsolidated alluvial deposits, and/or loose granular soils. The potential for seismic-induced settlement at the project site is considered low due to the dense nature of the alluvial deposits underlying the soils.

The project site is topographically flat, but during construction earthwork to develop the new on- and off-ramps and new human-made slopes would occur. The new human-made slopes would be designed to meet the Caltrans Seismic Design Criteria and, therefore, would reduce the risk of slope failure during a seismic event. Therefore, implementation of the project would not expose people or structures to potential adverse effects including the risk of loss, injury, or death involving seismically induced events such as liquefaction, seismic induced settlement, or seismic induced slope failure.

The land within and surrounding the proposed project site is topographically flat. There is no potential for landslides to occur within or near the Project site due to the flat topography of the land. Therefore, implementation of the proposed project would not expose people or structures to potential adverse effects including the risk of loss, injury, or death involving landslides.

As discussed above, the project site is on various types of soil. Soils 255, 108, 142, 254, 266, and 109 within the project boundary all have low erodibility rates according

to the San Joaquin County soil survey developed by the Natural Resources Conservation Service. Construction activities occurring onsite have the potential to cause minimal soil erosion or loss of topsoil; however, Best Management Practices in compliance with Caltrans standards for soil erosion control would be incorporated into construction activities to reduce erosion.

Four types of soils have been identified in the City of Manteca as being subject to shrink-swell occurrences (expansive soils): Soils 152 and 153 (Egbert Series) with a moderate-high shrink-swell potential, Soil 169 (Guard Series) with a moderate shrink-swell potential, and Soil 160 (Galt Series) with a high shrink-swell potential. The soils identified within the project boundary all have a low shrink-swell potential. Development of the project on these soils would not have an adverse effect nor would it create substantial risks to life or property.

2.2.2.4 Avoidance, Minimization, and/or Mitigation Measures

The project would incorporate recommendations and design features from the Preliminary Geotechnical Report to minimize adverse geologic effects. The following minimization measures would be incorporated:

GEO-1: Prior to final approval of the proposed project, a geologist will be retained to perform in-field investigations to evaluate the potential for liquefaction, seismic-induced settlement, and slope stability, as recommended in the *Preliminary Geotechnical Report*. The field investigation shall include shallow borings located along proposed roadway alignments and comparatively deeper borings near proposed structures. Laboratory testing of the borings shall include shear strength testing to evaluate various engineering properties of the existing site soils. Gradation and Atterberg Limits testing and other index testing shall also be performed to evaluate suitability of onsite material for backfill and corrosion testing shall be performed on boring samples from areas in the project limit where soils are expected to be in contact with proposed structures. If the project area is found to be susceptible to such geological conditions, the recommendations for project design discussed in the *Preliminary Geotechnical Report* and any additional recommendations made by the retained geologist shall be implemented as part of the final project design. Such recommendations in the design of the proposed project shall be published in a *Foundation Report* (or *Final Geotechnical Report*),

reviewed, and approved by Caltrans to ensure the final design of the proposed project is compliant with Caltrans standards for interchange development.

- GEO-2:** Deep foundations shall be required at the abutments for the new ramp bridge due to structural loading and soils conditions at the project site. Caltrans Class 90 or 140 Standard Alternative W or X driven piles are feasible and shall be used based on the investigated onsite soil conditions. Cast-in-drilled hole piles shall also be considered; however, shallow groundwater and soils conditions would likely require that casing be used during construction.

2.2.3 Paleontology

The Paleontological Resources Identification and Evaluation Report, dated January 2014 (as listed in Appendix E), contributes to the information and analysis of paleontological resources discussed in this section.

2.2.3.1 Regulatory Setting

Paleontology is a natural science focused on the study of ancient animal and plant life as it is preserved in the geologic record as fossils. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized projects:

- 16 U.S. Code 431-433 (the “Antiquities Act”) prohibits appropriating, excavating, injuring, or destroying any object of antiquity situated on federal land without the permission of the Secretary of the Department of Government having jurisdiction over the land. Fossils are considered “objects of antiquity” by the Bureau of Land Management, the National Park Service, the Forest Service, and other federal agencies.
- 16 U.S. Code 461-467 (the National Registry of Natural Landmarks) establishes the National Natural Landmarks program. Under this program, property owners agree to protect biological and geological resources such as paleontological features. Federal agencies and their agents must consider the existence and location of designated National Natural Landmarks and of areas found to meet the criteria for national significance, in assessing the effects of their activities on the environment under National Environmental Policy Act.
- 16 U.S. Code 470aaa (the Paleontological Resources Preservation Act) prohibits the excavation, removal, or damage of any paleontological resources located on

federal land under the jurisdiction of the Secretaries of the Interior or Agriculture without first obtaining an appropriate permit. The statute establishes criminal and civil penalties for fossil theft and vandalism on federal lands.

- 23 U.S. Code 1.9(a) requires that the use of federal-aid funds must be in conformity with federal and state law.
- 23 U.S. Code 305 authorizes the appropriation and use of federal highway funds for paleontological salvage as necessary by the highway department of any state, in compliance with 16 U.S. Code 431-433 above and state law.

Under California law, paleontological resources are protected by the California Environmental Quality Act.

The federal statutes apply only if the project is located on federal land such as the U.S. Department of Interior, Bureau of Land Management or the U.S. Department of Agriculture, Forest Service (Forest Service). As this project is not located on federal land, the only statute that would apply is 23 U.S. Code 305. In addition, protections to paleontological resources following California Environmental Quality Act would also apply.

2.2.3.2 Affected Environment

The Paleontological Resources Identification and Evaluation Report (January 2014) examined available geologic maps of the project area to determine what geological units would likely be encountered during ground-disturbing activities associated with the project. On June 13, 2013, research was done online for a fossil locality search through the University of California Museum of Paleontology. The fossil locality search was done by a University of California Museum of Paleontology representative (scientist). The search included the project area and a 1-mile radius around the project area. The locality search was done to establish the status and extent of previously recorded paleontological resources within and next to the project study area. Also, a pedestrian survey of the project area was completed on October 29 and 30, 2012, to confirm the accuracy of the geologic mapping.

The Area of Potential Disturbance lies in the northeastern San Joaquin Valley at the base of the Sierra Nevada foothills within the Great Valley Geomorphic Province (California Geologic Survey 2002). The Great Valley is an alluvial valley in the central portion of California that is about 50 miles wide and more than 400 miles long. Its northern part is drained by the Sacramento River and is known as the

Sacramento Valley; the southern portion is drained by the San Joaquin River and is known as the San Joaquin Valley.

The San Joaquin Valley is a large structural trough between the Coast Ranges and the Sierra Nevada. The valley is filled with marine and alluvial sediments that are about 6 miles thick. These sediments have been deposited almost continuously since the Jurassic (160 million years ago) to the present. These sediments overlie the westward-tilted block of the plutonic and metamorphic Sierra Nevada basement. The northern portion of the San Joaquin Valley was part of the Pacific Ocean and subject to submarine deposition from the Jurassic (160 million years ago) until the late Paleocene (59 million years ago) when uplift of the Sierra Nevada put this portion of the San Joaquin Valley on or near the shore of the Pacific Ocean. Between the Paleocene (59 million years ago) and the Pliocene (5.3–2.6 million years ago), deposition alternated between terrestrial and marine, depending on conditions. The entire valley did not become isolated from the Pacific Ocean until the Pliocene (5.3–2.6 million years ago).

During the Late Pleistocene, changing climatic conditions resulted in the creation of a series of large alluvial fans on either side of the San Joaquin Valley, including within the Area of Potential Disturbance. According to geologic mapping, the entire project area contains Late Pleistocene alluvial sediments of the Modesto Formation. The Modesto Formation is basically a large extensive alluvial fan complex with its source in the Sierra Nevada to the east. In addition, although not mapped, artificial fill exists within the Area of Potential Disturbance.

The walk-through survey revealed that ground visibility within the Area of Potential Disturbance varied from zero to 100 percent, with much of the ground surface obscured by paving, landscaping, grasses, weeds, and crops. The sediments that are visible are composed of artificial fill and disturbed soil that is consistent with the Modesto Formation. Artificial fill is located mostly within the current footprint of State Route 120 and was placed as a means to elevate the freeway above McKinley Avenue and the Union Pacific Railroad. In some areas, this fill is in excess of 40 feet thick. Areas outside the current State Route 120 footprint have been disturbed by agricultural and residential uses. This disturbance likely extends down several feet beneath the surface. No intact exposures of the Modesto Formation or paleontological resources were identified in the Area of Potential Disturbance during the survey. Intact exposures of the Modesto Formation likely exist 2 to 3 feet below the original

ground surface below the plow zone and other disturbances associated with the development of the area.

The locality search done online indicated that the University of California Museum of Paleontology is not aware of any paleontological localities within the Area of Potential Disturbance of the project or in the immediate vicinity. However, sediments from the Modesto Formation have produced fossils from bison and mammoth in other areas where the formation is present. Also, based on the age of the Modesto Formation, it is possible that fossils from other middle to late Pleistocene animals such as ground sloth, dire wolf, saber-toothed cat, camel, horse, rodent, bird, reptile, and amphibians may be present as well. All of these fossil remains are scientifically significant as they add to the knowledge of past environmental conditions. Therefore, the Modesto Formation has a high paleontological sensitivity. Artificial fill can contain fossils, but these fossils have been removed from their original location and are then out of context. Fossils found in fill are not considered important for scientific study and have a low paleontological sensitivity.

2.2.3.3 Environmental Consequences

The City of Manteca, in conjunction with Caltrans and the Federal Highway Administration, proposes the State Route 120/McKinley Avenue Interchange Project to construct a new interchange where State Route 120 passes over McKinley Avenue in the southwestern portion of the City of Manteca in San Joaquin County.

Based on current project design, the project would excavate and grade to the following depths during construction activities:

- Utility pole relocations to 10 feet deep along McKinley Avenue.
- Traffic signal foundations to 15 feet deep at intersections.
- Roadside drainage facilities to 10 feet deep along McKinley Avenue.
- Drainage basins to 5 feet deep.
- Roadway base to 3 feet deep.
- Ground disturbance associated with equipment moving around the project site to 2 feet deep.
- If the railroad grade separation is widened, abutments would be 10 feet deep.

- Overhead sign foundations along State Route 120 would be to 25 deep. The foundations would, however, be in 40-foot deep fill along State Route 120, so there would be no effects to paleontological resources.
- Utility line relocations and/or new utility lines (if needed) between 3 to 5 feet deep.

During the walk-through survey of the project site, it was observed that much of the current footprint of the freeway contains artificial fill that is up to 40 feet thick. It was also observed that the areas next to the freeway footprint appeared to be consistent with the sediments of the Modesto Formation, but may be disturbed to depths of several feet below the surface from prior agricultural activities and development in the area. Therefore, it is likely that undisturbed sediments of the Modesto Formation would be encountered in some areas, but they would not be encountered until a depth of at least 5 feet is reached.

Operation of the project would not adversely affect paleontological resources because operational activities would not intrude into the Modesto Formation.

2.2.3.4 Avoidance, Minimization, and/or Mitigation Measures

Because the Modesto Formation runs throughout the Area of Potential Disturbance and surrounding area, there is no way to avoid it even if design changes are made. To reduce direct or indirect impacts to nonrenewable paleontological resources that may be present, where excavation may take place in areas of undisturbed sediments, minimization measures would be implemented. A minimization measure is to be implemented in areas identified as having a high paleontological sensitivity and would follow guidelines in the current Caltrans Standard Environmental Reference, Environmental Handbook, Volume 1, Chapter 8 – Paleontology and recommendations from the Society of Vertebrate Paleontology prior to completion of final project design.

PAL-1: Prior to construction activities, the City of Manteca shall ensure that a Paleontological Mitigation Plan is prepared by a qualified paleontologist and adhered to during construction of the project for those areas that have been identified as having high paleontological sensitivity. The Paleontological Mitigation Plan shall apply to all areas that involve excavation that extends deeper than three feet below the surface, unless the area of excavations is known to be artificial fill.

The Paleontological Mitigation Plan shall include, but not be limited to, the following:

- A requirement for a pre-construction meeting attended by a qualified paleontologist or designee. At this meeting, the paleontologist or designee shall describe the likelihood of encountering paleontological resources, what kinds of resources may be discovered, and the methods of recovery that shall be employed should such resources be encountered.
- During construction excavation, a qualified vertebrate paleontological monitor shall initially be present on a full-time basis whenever excavation occurs within the sediments that have a high paleontological sensitivity rating. Spot-check monitoring shall occur for excavation in sediments with a low sensitivity rating. Monitoring may be reduced to a part-time basis if no resources are discovered in sediments with a high sensitivity rating (monitoring reductions, when they occur, shall be determined by the qualified paleontologist in consultation with the Resident Engineer).
- Native sediments shall be spot-screened occasionally through 1/8- to 1/20-inch mesh screens to determine whether microfossils are present. If microfossils are encountered, sediment samples (up to 3 cubic yards, or 6,000 pounds) shall be collected and processed through 1/20-inch mesh screens to recover additional fossils.
- Recovered fossil specimens shall be prepared to the point of identification and permanent preservation. Preparation includes the sorting of any washed mass samples to recover small invertebrate and vertebrate fossils, the removal of surplus sediment from around larger specimens to reduce the volume and cost of storage for the repository, and the addition of approved chemical hardeners/stabilizers to fragile specimens.
- Specimens shall be identified to the lowest taxonomic level possible and curated in an institutional repository with retrievable storage. The repository institution may be a local museum or university with a curator who can retrieve the specimens upon request. A draft curation agreement shall be in place with an approved curation facility prior to the initiation of any paleontological monitoring or mitigation activities.

- The Paleontological Mitigation Report documenting completion of the Paleontological Mitigation Plan shall be prepared.

Implementation of the minimization measures identified above would reduce adverse effects on nonrenewable paleontological resources within and adjacent to the project site. More project-specific minimization measures may be developed during preparation of the Paleontological Mitigation Plan to further reduce adverse effects during final project design.

2.2.4 Hazardous Waste/Materials

This section discusses possible adverse effects to the environment due to the release of hazardous waste or materials associated with project implementation. The information and analysis contained in this section is based on the March 2013 Initial Site Assessment prepared for the project (as listed in Appendix E). The following provides information on the regulatory setting, affected environment, environmental consequences, and avoidance, minimization, mitigation measures associated with hazardous waste/materials that could be released due to project implementation.

2.2.4.1 Regulatory Setting

Hazardous materials including hazardous substances and wastes are regulated by many federal laws. Statutes govern the generation, treatment, storage, and disposal of hazardous materials, substances, and waste, and the investigation and mitigation of waste releases, air and water quality, human health, and land use.

The main federal laws regulating hazardous wastes/materials are the Comprehensive Environmental Response, Compensation and Liability Act of 1980 and the Resource Conservation and Recovery Act of 1976. The purpose of Compensation and Liability Act of 1980, often referred to as “Superfund,” is to identify and clean up abandoned contaminated sites so that public health and welfare are not compromised. The Resource Conservation and Recovery Act of 1976 provides for “cradle to grave” regulation of hazardous waste generated by operating entities. Other federal laws include:

- Community Environmental Response Facilitation Act of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety & Health Act

- Atomic Energy Act
- Toxic Substances Control Act
- Federal Insecticide, Fungicide, and Rodenticide Act

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control Standards, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

California regulates hazardous materials, waste and substances under the authority of the California Health and Safety Code and is also authorized by the federal government to implement Resource Conservation and Recovery Act of 1976 in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and clean up contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Worker and public health and safety are key issues when addressing hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is encountered, disturbed during, or generated during project construction.

2.2.4.2 Affected Environment

Hazardous wastes and materials are substances that may pose a potential hazard to human health or the environment when handled improperly. Household hazardous waste/materials and non-household hazardous waste/materials are abundant in the City of Manteca. Household hazardous waste/materials include 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. Hazardous waste can also be generated by small businesses, industry, and government facilities (non-household hazardous waste/materials).

The City of Manteca has businesses and land uses that have used or released hazardous materials in the past. The hazardous materials sites in the City of Manteca

have been identified in the CalSites Database. This database contains information on properties in California where hazardous substances have or may have been released. No sites within the City of Manteca have been identified as a confirmed CalSites or State Superfund site; however, the CalSites Database has identified 11 potential toxic sites within the City of Manteca.

San Joaquin County Public Health Services monitors possible groundwater and soil contamination from underground tanks in the City of Manteca. The County has identified 48 sites (either active or non-active) within the City of Manteca that are currently being monitored for either groundwater or soil contamination from underground tanks.

The project is in a mixed residential and agricultural area of San Joaquin County and consists of an approximately 1.15-mile-long segment of State Route 120 and an approximate 0.75-mile-long segment of McKinley Avenue. Twenty-eight properties consisting of a mix of vacant land, and residential, commercial, and agricultural land next to State Route 120 and McKinley Avenue are proposed for full or partial acquisition as part of the improvements associated with the project. Parcels that would be partially or fully acquired by eminent domain are shown above in Figure 2.4. Of the 28 parcels that would be partially or fully acquired, 20 parcels are connected to the City of Manteca sewer services system. The remaining eight parcels are not connected to the City of Manteca sewer services system and it is therefore assumed that they are using septic system for sewage disposal. Properties surrounding the project site (which includes the 28 parcels of land that would be partially or fully acquired) consist of a mix of residential and agricultural uses in all directions. Also, a segment of Union Pacific Railroad track crosses McKinley Avenue just north of the project site.

Historical aerial photographs and U.S. Geological Survey topographic maps were reviewed for indications of past land uses that had the potential to have affected the project site through the use, storage or disposal of hazardous substances. Historical aerial photographs for the years 1957, 1963, 1974, 1982, 1993, 1998, 2005, and 2006 and U.S. Geological Survey topographic maps for the years 1915, 1952, 1868, 1976, 1987, 1994, and 1996 were reviewed.

Aerially Deposited Lead

Aerially deposited lead refers to lead deposited along highway and roadway shoulders from past leaded fuel vehicle emissions. Even though leaded fuels have been

prohibited in California since the 1980s, aerially deposited lead can still be found along highways and roadways that were in use prior to that time period. In California, soil within the Caltrans right-of-way that contains hazardous waste concentrations of aerially deposited lead can be reused under the authority of a variance issued by the California Department of Toxic Substances Control. The variance allows stockpiling, transporting, and reuse of soils with hazardous waste concentrations of lead below maximum allowable levels on Caltrans' rights-of-way when specific conditions are met. Aerially deposited lead may be present on the shoulder of McKinley Avenue and State Route 120 within the project boundary.

Asbestos-Containing Materials

Asbestos describes six naturally occurring fibrous minerals found in certain types of rock formations. Asbestos is a mineral compound of silicon, oxygen, hydrogen, and various metal cations. Of the six types, the minerals chrysotile, amosite, and crocidolite have been most commonly used in building products. When mined and processed, asbestos is typically separated into very thin fibers. When these fibers are present in the air, they are normally invisible to the naked eye. Asbestos fibers are commonly mixed during processing with a material, which binds them together so that they can be used in many different products. Because these fibers are so small and light, they may remain in the air for many hours if they are released from the asbestos-containing material in a building. Asbestos fibers can cause serious health problems. If inhaled, these tiny fibers can impair normal lung functions and increase the risk of developing lung cancer, mesothelioma, or asbestosis.

Asbestos-containing material may be present in residential and commercial structures on the land parcels to be acquired through project implementation and in structures (e.g., undercrossing structures at McKinley Avenue and State Route 120) along McKinley Avenue and State Route 120. An asbestos-containing materials survey may need to be done to determine the amount of asbestos in residential, commercial and highway structures within the project boundary.

Lead-Based Paint

The Environmental Protection Agency and the Department of Toxic Substances Control require that lead-based paint with lead concentrations equal to or greater than the U.S. Department of Housing and Urban Development definition of lead-based paint (greater or equal to 0.5 percent by weight) be removed prior to demolition if the paint is loose and peeling. If the paint is securely adhering to the substrate, the entire material may be disposed of as demolition debris, which is a non-hazardous waste.

Loose and peeling paint must be disposed of as a State and/or federal hazardous waste, if the concentration of lead exceeds applicable waste thresholds. Hazardous wastes must be managed, labeled, transported, and disposed of in accordance with local requirements by trained workers. State and federal construction worker health and safety regulations require air monitoring and other protective measures during demolition activities where lead-based paint is present.

Lead-based paint may be present in residential and commercial structures on the land parcels that would be acquired through project implementation. A lead-based paint survey may need to be done to determine the amount of asbestos in residential, commercial and highway structures within the project boundary.

Traffic Striping

McKinley Avenue, State Route 120 and Bronzan Road have been developed with both yellow and white traffic striping. Both types of striping are known to contain lead, but older yellow striping is known to contain higher levels of heavy materials such as lead and chromium concentrations in excess of the hazardous waste thresholds established by the California Code of Regulations. When heated, the yellow striping may generate toxic fumes.

2.2.4.3 Environmental Consequences

An Initial Site Assessment for the project was prepared in March 2013 to assess the potential for hazardous materials/wastes on the project site (including the 28 parcels of land that would be partially or fully acquired). A check of the project site occurred on January 23, 2013 to survey conditions within the project boundary. The project site was surveyed from public thoroughfares to attempt to identify visual indicators of potential contaminated properties. Also, regulatory agency databases and GeoTracker records were reviewed to determine if any sites within or near the project boundary were listed as hazardous materials sites. Finally, a *Preliminary Site Investigation Report, Aerially Deposited Lead* was prepared in July 2013 after field investigations to determine the amount of aerially deposited lead in soils in the vicinity of the project site. The following describes the results of the onsite check and the review of federal, state and local databases for the project site and surrounding areas.

Onsite Properties Database Search Results

The 28 properties within the project site proposed for full or partial acquisition consist of a mix of residential, commercial and agricultural land uses. The Dutra Farms (also known as Danna Farms) property at 19589 McKinley Avenue (parcel

Assessor's Parcel Number 241-260-02-proposed for partial acquisition) was identified in the regulatory database search report on the Underground Storage Tank and Historical Underground Storage Tank databases. The database listings consisted of closed unleaded gasoline (1,000-gallon) and diesel fuel (1,000-gallon) Underground Storage Tanks with no reported releases; however, potential petroleum hydrocarbon releases to soil from operations on this site and from the former Underground Storage Tanks may have adversely affected soil at this property. Therefore, minimization measures would be implemented to reduce this adverse impact.

The existing segments of State Route 120, McKinley Avenue and Bronzan Road were not listed as contaminated properties in the database search. None of the remaining private properties within the project site proposed for full or partial acquisition were listed as contaminated in the database search.

Offsite Properties Database Search Results

No potentially contaminated properties are within the approximately ¼-mile upgradient, 1/8-mile crossgradient (based on reported groundwater flow directions), or adjacent to the project site as identified on the California State Water Resources Control Board Geotracker database or California Department of Toxic Substances Control EnviroStor database.

The Costco gas station at 2440 Daniels Street in the Stadium Shopping Center was identified during the site check and is an active gas station north of the eastern portion of the project site. This facility was not listed in any federal, state or local databases as being contaminated nor was it listed in the Geotracker or EnviroStor database. Considering this facility is active and is not designated as a release property in regulatory agency listings, the likelihood of potential contamination from hazardous materials/wastes from this property during project construction is considered low.

An Orphan Summary was completed to identify properties next to or near the project site that have incomplete address information and could not be specifically plotted. A total of 16 properties surrounding the project site were listed on this report; however, based on federal, state, local and GeoTracker database searches of these listed "orphan properties," their locations and contamination status, these properties present a low potential for hazardous material/waste contamination of the project site during construction and operation activities.

Aerially Deposited Lead, Asbestos-Containing Material and Lead-Based Paint Analysis

The State Route 120 corridor and McKinley Avenue have had extensive exposure to historical automotive vehicle emissions. The potential exists for elevated lead levels from aerially deposited lead to be present in shallow soils near the roadways within the project boundary. Also, yellow thermoplastic and paint striping, potentially containing lead chromate, was seen on roadway surfaces (State Route 120 and McKinley Avenue) within the project boundary. Suspect asbestos-containing materials and possible lead-based paint may be present in the existing McKinley Avenue undercrossing spans. However, a lead-based paint and asbestos-containing materials survey for the existing McKinley Avenue undercrossing spans would not occur because no work is proposed for these structures. Separate structures would be built for the new ramps, and the existing structures would not be removed.

A preliminary site investigation was prepared to determine concentrations of aerially deposited lead in soil on the project site. A field investigation was performed on June 7, 2013 where 54 soil samples were collected from a total of 24 soil borings that were drilled to a depth of 2.5 feet each along the westbound State Route 120 shoulder and the eastbound State Route 120 shoulder. Analysis of the soil samples concluded that total lead concentrations for soil along the westbound and eastbound State Route 120 shoulder were less than 50 milligrams per kilogram and therefore were not above threshold limits. Also, total lead concentrations in the onsite soil were below the residential and commercial land use environmental screening levels and the construction worker exposure environmental screening levels. Therefore, onsite reuse of excavated soils can occur based on the minimal lead concentration.

The private properties within the project boundary are currently and have formerly been used for rural residential and agricultural purposes interspersed with vacant land, and residual agricultural chemicals may be present in soils at these properties. Also, residential and commercial structures developed prior to the 1970s are present on land proposed for partial or full acquisition. Considering that these structures were developed before the 1970s, suspect asbestos-containing material and possible lead-based paint may be present at these private properties. Therefore, minimization measures identified below would be implemented to reduce this possible adverse impact.

2.2.4.4 Avoidance, Minimization, and/or Mitigation Measures

The following minimization measures would be implemented for construction activities occurring on the project site:

- HAZ-1:** Prior to the start of construction activities, the construction contractor shall prepare a project-specific health and safety plan that provides guidelines that prevent or minimize worker exposure to lead in onsite soils that are being excavated and reused. The safety plan shall include (but not be limited to) protocols for environmental and personal monitoring, requirements for personal protective equipment, and other health and safety protocols and procedures for the handling of soils.
- HAZ-2:** The 19589 McKinley Avenue property (Assessor's Parcel Number 241-060-02) proposed for partial parcel acquisition was identified in the regulatory database search report on the Underground Storage Tank and Historical Underground Storage Tank databases. The databases listed a closed unleaded gasoline (1,000-gallon) and a closed diesel fuel (1,000-gallon) Underground Storage Tank at the property with no reported releases. Potential undocumented petroleum hydrocarbon releases from operation of the former Underground Storage Tanks may have adversely affected soil at the property. The status and location of the Underground Storage Tanks at the property shall be confirmed, and soil sampling for petroleum hydrocarbons shall be conducted at the portions of the private property proposed for acquisition to evaluate potential adverse effects, responsible party liability, and soil material management and disposal if required.
- HAZ-3:** Current and historical land use of private properties for full and partial acquisition includes agricultural purposes (orchards and row crops). Residual pesticides and herbicides may be present in soil at these properties. A preliminary site investigation within the project boundary consisting of soil sampling for pesticides, herbicides, and metals shall be conducted to evaluate potential adverse effects, responsible party liability, and soil material management and disposal.
- HAZ-4:** Residential and commercial structures located on private properties proposed for full and partial acquisition may require demolition as part of the project development. Additionally, the McKinley Avenue

undercrossing spans are present within the project boundary. Asbestos-containing material and lead-based paint may be present at the private property structures planned for demolition and the bridge spans. An asbestos and lead-based paint survey shall be required to evaluate the presence of asbestos and lead at the structures to be demolished due to project implementation.

HAZ-5: If encountered, undocumented Underground Storage Tanks, septic systems and domestic/agricultural/oil production wells shall be properly removed or abandoned in accordance with San Joaquin County requirements.

HAZ-6: Yellow thermoplastic and paint striping that is removed during planned roadway improvements associated with the proposed project may require special handling and disposal requirements unless combined with sufficient asphalt grindings per Caltrans Special Provisions. Asbestos-containing pipe and treated-wood may also be encountered during project construction. Any encountered asbestos-containing pipe or treated-wood waste shall require proper handling and disposal in accordance with Caltrans and City of Manteca regulatory requirements.

2.2.5 Air Quality

The following provides information on adverse effects to air quality with implementation of the project. Information in this section comes from the Air Quality Analysis Report (June 2014- as listed in Appendix E) and the Air Quality Conformity Analysis (September 2013 –as listed in Appendix E) prepared for the project. The following terms are used throughout this section:

- **PM₁₀:** Suspended/coarse/respirable particulate matter, or particulate matter with a diameter of 10 microns or smaller.
- **PM_{2.5}:** Fine particulate matter, or particulate matter with a diameter of 2.5 microns or smaller.

2.2.5.1 Regulatory Setting

The Federal Clean Air Act, as amended, is the main federal law that governs air quality. The California Clean Air Act is its companion state law. These laws, and related regulations by the U.S. Environmental Protection Agency and California Air Resources Board, set standards for the concentration of pollutants in the air. At the

federal level, these standards are called National Ambient Air Quality Standards. National Ambient Air Quality Standards and state ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide, nitrogen dioxide, ozone, particulate matter, which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM₁₀) and particles of 2.5 micrometers and smaller (PM_{2.5}), and sulfur dioxide. In addition, national and state standards exist for lead and state standards exist for visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride.

The National Ambient Air Quality Standards and state standards are set at levels that protect public health with a margin of safety, and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act. In addition to this environmental analysis, a parallel “conformity” requirement under the Federal Clean Air Act also applies.

Conformity

The conformity requirement is based on Federal Clean Air Act Section 176(c), which prohibits the U.S. Department of Transportation and other federal agencies from funding, authorizing, or approving plans, programs or projects that do not conform to State Implementation Plan for attaining the National Ambient Air Quality Standards. “Transportation Conformity” applies to highway and transit projects and takes place on two levels: the regional—or, planning and programming—level and the project level. The project must conform at both levels to be approved.

Conformity requirements apply only in nonattainment and “maintenance” (former nonattainment) areas for the National Ambient Air Quality Standards, and only for the specific National Ambient Air Quality Standards that are or were violated. The Environmental Protection Agency regulations at 40 Code of Federal Regulations 93 govern the conformity process. Conformity requirements do not apply in unclassifiable/attainment areas for National Ambient Air Quality Standards and do not apply at all for state standards regardless of the status of the area.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the National Ambient Air Quality Standards for carbon monoxide, nitrogen dioxide, ozone, PM₁₀ and PM_{2.5}, and in some areas (although not in California) sulfur dioxide. California has attainment or maintenance areas for all of these transportation-related “criteria pollutants” except sulfur dioxide, and also has a nonattainment area for lead; lead is not currently required by the Federal Clean Air Act to be covered in transportation conformity analysis.

Regional conformity is based on emission analysis of Regional Transportation Plans and Federal Transportation Improvement Programs that include all transportation projects planned for a region over a period of at least 20 years for the Regional Transportation Plan and 4 years for the Federal Transportation Improvement Programs. Regional Transportation Plan and Federal Transportation Improvement Programs conformity uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the Clean Air Act and the State Implementation Plan are met. If the conformity analysis is successful, the Metropolitan Planning Organization, Federal Highway Administration, and Federal Transit Administration, make determinations that the Regional Transportation Plan and Federal Transportation Improvement Programs are in conformity with the State Implementation Plan for achieving the goals of the Federal Clean Air Act. Otherwise, projects in the Regional Transportation Plan and/or Federal Transportation Improvement Programs must be modified until conformity is attained. If the design concept, scope, and “open-to-traffic” schedule of a proposed transportation project are the same as described in the Regional Transportation Plan and Federal Transportation Improvement Programs, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Conformity analysis at the project-level includes verification that the project is included in the regional conformity analysis and a “hot-spot” analysis if an area is “nonattainment” or “maintenance” for carbon monoxide and/or PM₁₀ or PM_{2.5}. A region is “nonattainment” if one or more of the monitoring stations in the region measure a violation of the relevant standard and the Environmental Protection Agency officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but subsequently meet the standard may be officially redesignated to attainment by the Environmental Protection Agency and are then called “maintenance” areas. “Hot-spot” analysis is essentially the same, for technical purposes, as carbon monoxide or particulate matter analysis performed for

National Environmental Policy Act purposes. Conformity does include some specific procedural and documentation standards for projects that require a hot-spot analysis. In general, projects must not cause the “hot-spot” related standard to be violated and must not cause any increase in the number and severity of violations in nonattainment areas. If a known carbon monoxide or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s).

2.2.5.2 Affected Environment

Meteorology

The project site is in the San Joaquin Valley Air Basin, which encompasses approximately 25,000 square miles and covers all of seven counties including Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare, and the western portion of Kern. The San Joaquin Valley Air Basin is bounded by the Sierra Nevada in the east, the Coast Ranges in the west, and the Tehachapi mountains in the south. The valley is topographically flat with a slight downward gradient to the northwest. The valley opens to the sea at the Carquinez Straits where the San Joaquin-Sacramento Delta empties into San Francisco Bay. These topographic features restrict air movement throughout the basin.

Local climatological effects, including wind speed and direction, temperature, inversion layers, precipitation, and fog, can exacerbate the air quality in the San Joaquin Valley Air Basin. Wind speed and direction play an important role in the dispersion and transport of air pollutants. Wind at the surface and aloft can disperse pollution by mixing vertically and by transporting it to other locations. For example, in the summer, wind usually originates at the north end of the San Joaquin Valley Air Basin and flows south-southeasterly through the basin, through Tehachapi pass, and into the Southeast Desert Air Basin. In winter, wind direction is reversed and flows north-northwesterly. In addition to the seasonal wind flow, a sea breeze flows into San Joaquin Valley Air Basin during the day and a land breeze flows out of the San Joaquin Valley Air Basin at night. The diversified wind flow enhances the pollutant transport capability within San Joaquin Valley Air Basin.

The climatological station monitoring temperature closest to the project site is in Stockton. Monthly average temperature for the last 64 years ranges from 45.7 degrees Fahrenheit (°F.) in January to 77.3° F. in July. January is typically the coldest month in this area. Most of the annual rainfall in the basin occurs between November and April. Summer rainfall is minimal and generally limited to scattered thundershowers

along the coastal side of the mountains. Average monthly rainfall measured at the station during that period varies from 2.80 inches in January to 0.41 inch or less per month between May and September, with an annual total rainfall of 13.76 inches. Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

Air Pollution Constituents

As discussed above, the National Ambient Air Quality Standards were established for major pollutants, termed “criteria” pollutants. Criteria pollutants are defined as those pollutants for which the federal and state governments have established ambient air quality standards or criteria for outdoor concentrations in order to protect public health. The National Ambient Air Quality Standards are two-tiered: primary, to protect public health, and secondary, to prevent degradation to the environment (e.g., impairment of visibility, damage to vegetation and property).

The Environmental Protection Agency established new national air quality standards for ground-level ozone and for fine particulate matter (PM_{2.5}) in 1997. The primary standards for these pollutants are shown in Table 2.11.

Air quality monitoring stations are located throughout the nation and maintained by the local air districts and state air quality regulating agencies. Data collected at permanent monitoring stations are used by the Environmental Protection Agency to identify regions as “attainment” or “nonattainment,” depending on whether the regions meet the requirements stated in the primary National Ambient Air Quality Standards. Nonattainment areas are imposed with additional restrictions as required by the Environmental Protection Agency. In addition, different classifications of attainment, such as marginal, moderate, serious, severe, and extreme, are used to classify each air basin in the state on a pollutant-by-pollutant basis. The classifications are used as a foundation to create air quality management strategies to improve air quality and comply with the National Ambient Air Quality Standards. The San Joaquin Valley Air Basin’s attainment status for each of the criteria pollutants is listed in Table 2.12.

Table 2.11 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards ¹		Federal Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷
Ozone	1-Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	–	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.07 ppm (137 µg/m ³)		0.075 ppm (147 µg/m ³)		
PM ₁₀ ⁸	24-Hour	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m ³		–		
PM _{2.5} ⁸	24-Hour	No Separate State Standard		35 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation	15 µg/m ³		
Carbon Monoxide	8-Hour	9.0 ppm (10 mg/m ³)	Nondispersive Infrared Photometry	9 ppm (10 mg/m ³)	None	Nondispersive Infrared Photometry
	1-Hour	20 ppm (23 mg/m ³)		35 ppm (40 mg/m ³)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m ³)		–		
Nitrogen Dioxide ⁹	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m ³)	Same as Primary Standard	Gas Phase Chemiluminescence
	1-Hour	0.18 ppm (339 µg/m ³)		100 ppb (188 µg/m ³) ⁸	None	
Lead ^{11,12}	30-day average	1.5 µg/m ³	Atomic Absorption	–	–	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 µg/m ³	Same as Primary Standard	
	Rolling 3- month Average ¹⁰	–		0.15 µg/m ³		
Sulfur Dioxide ¹⁰	Annual Arithmetic Mean	–	Ultraviolet Fluorescence	0.14 ppm (for certain areas) ⁹	–	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	24-Hour	0.04 ppm (105 µg/m ³)		0.030 ppm (for certain areas) ⁹	–	
	3-Hour	–		–	0.5 ppm (1300 µg/m ³)	
	1-Hour	0.25 ppm (655 µg/m ³)		75 ppb (196 µg/m ³)	–	
Visibility Reducing Particles ¹³	8-Hour	See footnote ¹²	Beta Attenuation and Transmittance through Filter Tape	No Federal Standards		
Sulfates	24-Hour	25 µg/m ³	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence			
Vinyl Chloride ¹¹	24-Hour	0.01 ppm (26 µg/m ³)	Gas Chromatography			

Source: California Air Resources Board, June 7, 2012.
Footnotes can be found on the next page

Footnotes:

- ¹ California standards for ozone; carbon monoxide (except Lake Tahoe); sulfur dioxide (1- and 24-hour); nitrogen dioxide; suspended particulate matter, PM₁₀; and visibility-reducing particles are values not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
- ² National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth-highest 8-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 mg/m³ is equal to or less than 1. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the United States Environmental Protection Agency for further clarification and current federal policies.
- ³ Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Centigrade and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25 degrees Centigrade and a reference pressure of 760 torr; ppm in this table refers to parts per million by volume, or micromoles of pollutant per mole of gas.
- ⁴ Any equivalent procedure that can be shown to the satisfaction of the California Air Resources Board to give equivalent results at or near the level of the air quality standard may be used.
- ⁵ National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- ⁶ National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- ⁷ Reference method as described by the United States Environmental Protection Agency. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the United States Environmental Protection Agency.
- ⁸ To attain the 1-hour standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum 1-hour average at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million. To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to parts per million. In this case, the national standard of 100 ppb is identical to 0.100 parts per million.
- ⁹ On June 2, 2010, the new 1-hour sulfur dioxide standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 sulfur dioxide national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million. To directly compare the 1-hour national standard to the California standard, the units can be converted to parts per million. In this case, the national standard of 75 ppb is identical to 0.075 parts per million.
- ¹⁰ The California Air Resources Board has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
- ¹¹ The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standards are approved.
- ¹² In 1989, the California Air Resources Board converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basins, respectively.

ppm = parts per million
mg/m³ = milligrams per cubic meter
µg/m³ = micrograms per cubic meter

Table 2.12 Attainment Status of Criteria Pollutants in San Joaquin Valley

Pollutant	Federal Standards Status	State Standards Status
Ozone - 1 hour	No Federal Standard	Nonattainment
Ozone - 8 hour	Nonattainment/Extreme ¹	Nonattainment
PM ₁₀	Attainment/Maintenance ²	Nonattainment
PM _{2.5}	Nonattainment	Nonattainment
carbon monoxide	Attainment/ Maintenance	Attainment/Unclassified
nitrogen dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead	*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, 2010. www.valleyair.org. July.

Notes:

¹ The San Joaquin Valley was reclassified from a Serious nonattainment area for the 8-hour ozone standard to Extreme, effective June 4, 2010.

² On September 25, 2008, the Environmental Protection Agency redesignated the San Joaquin Valley to attainment for the PM₁₀ National Ambient Air Quality Standard and approved the PM₁₀ Maintenance Plan.

Ozone

Ozone (or smog) is formed by photochemical reactions between nitrogen oxide and reactive organic gases rather than being directly emitted. Ozone is a pungent, colorless gas typical of San Joaquin smog. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as those with compromised immune systems, the elderly and young children. Ozone levels peak during summer and early fall. Effective June 15, 2005, the Environmental Protection Agency revoked in full, the federal 1-hour ozone ambient air quality standard, including associated designations and classifications, in all areas except 14 early action compacts all of which are outside California. The entire San Joaquin Valley Air Basin is designated as a nonattainment area for the state ozone standards. The Environmental Protection Agency has designated the status in the San Joaquin Valley Air Basin for the 8-hour ozone standard as “extreme” nonattainment.

Carbon Monoxide

Carbon monoxide is formed by the incomplete combustion of fossil fuels almost entirely from automobiles. It is a colorless, odorless gas that can cause dizziness, fatigue, and impairments to central nervous system functions. The San Joaquin Valley Air Basin is an attainment/maintenance area for federal carbon monoxide standards.

Nitrogen Oxides

Nitrogen dioxide, a reddish brown gas, and nitric oxide, a colorless, odorless gas, are formed from fuel combustion under high temperature or pressure. These compounds are referred to as nitrogen oxides, or nitrogen oxide. Nitrogen oxides are a primary component of photochemical smog reaction and contribute to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition. Nitrogen dioxide decreases lung function and may reduce resistance to infection. Based on the published monitoring data, the entire San Joaquin Valley Air Basin has not exceeded either federal or state standards for nitrogen dioxide in the past five years. The San Joaquin Valley Air Basin is designated as an attainment area under both state and federal standards.

Reactive Organic Gases

Reactive organic gases are formed from combustion of fuels and evaporation of organic solvents. Consequently, reactive organic gases accumulate in the atmosphere much quicker during the winter when sunlight is limited and photochemical reactions are slower. Reactive organic gases is an ozone precursor and a prime component of the photochemical reaction that forms ozone; however, reactive organic gases are not considered a criteria pollutant on their own.

Sulfur Dioxide

Sulfur dioxide is a colorless, irritating gas formed mainly from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous sulfur dioxide levels. Sulfur dioxide irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight. The entire San Joaquin Valley Air Basin is in attainment with both federal and state sulfur dioxide standards.

Particulate Matter

Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles (all particles less than or equal to 10 micrometers in diameter, or PM_{10}) are derived from a variety of sources, including windblown dust and grinding operations. Fuel combustion and resultant exhaust from power plants and diesel buses and trucks are primarily responsible for fine particle levels (less than 2.5 microns in diameter, $PM_{2.5}$). Fine particles can also be formed in the atmosphere through chemical reactions. Coarse particles (PM_{10}) can accumulate in the respiratory system and aggravate health problems such as asthma.

The Environmental Protection Agency's scientific review concluded that PM_{2.5}, which penetrates deeply into the lungs, is more likely than PM₁₀ to contribute to health effects listed in a number of recently published community epidemiological studies at concentrations that extend well below those allowed by the current PM₁₀ standards. These health effects include premature death and increased hospital admissions and emergency room visits; increased respiratory symptoms and disease; decreased lung functions; and alterations in lung tissue and structure and in respiratory tract defense mechanisms. The entire San Joaquin Valley Air Basin is a nonattainment area for the federal PM_{2.5} standards, and State PM_{2.5} and PM₁₀ standards.

Lead

Lead is found in old paints and coatings, plumbing, and a variety of other materials. Once in the bloodstream, lead can cause damage to the brain, nervous system, and other body systems. Children are highly susceptible to the effects of lead. The entire San Joaquin Valley Air Basin is in attainment for federal and State lead standards.

Local Air Quality

The project site is within the jurisdiction of the San Joaquin Valley Air Pollution Control District. The district monitors air quality at several locations within the San Joaquin Valley. The closest multi-pollutant monitoring site that has data available for most pollutants is in Stockton, and its air quality trends represent the ambient air quality in the project area.

The two pollutants known to exceed the state standards in the project area are regional pollutants. Ozone and PM₁₀ are regional emissions and are not determined by proximity to individual sources, but show a relative uniformity over a region. So, the data shown in Table 2.13 for these pollutants provides a good characterization of levels of these pollutants within the project site. The pollutants monitored are carbon monoxide, ozone, PM₁₀, PM_{2.5} and nitrogen dioxide. Table 2.13 summarizes the exceedance of state and federal standards at this monitoring site during the period 2011 through 2013.

**Table 2.13 Ambient Air Quality at the Nearest Monitoring Location
(Stockton, California)**

Pollutant		Standard	2011	2012	2013
Carbon Monoxide					
Maximum 1 hour concentration (ppm)			3.2	3.0	2.7
Number of Days exceeded:	State: > 20 ppm		0	0	0
	Federal: > 35 ppm		0	0	0
Maximum 8 hour concentration (ppm)			2.1	1.8	1.8
Number of Days exceeded:	State: > 9 ppm		0	0	0
	Federal: > 9 ppm		0	0	0
Ozone					
Maximum 1 hour concentration (ppm)			0.089	0.097	0.08
Number of days exceeded:	State: > 0.09		0	1	0
Maximum 8 hour concentration (ppm)			0.068	0.083	0.067
Number of Days exceeded	State: > 0.07 ppm		0	6	0
	Federal: > 0.08 ppm		0	2	0
Coarse Particulates (PM₁₀)					
Maximum 24 hour concentration (µg/m ³)			66.1	69.4	90.1
Number of Days exceeded:	State: > 50 µg/m ³		4	3	10
	Federal: > 150 µg/m ³		0	0	0
Annual arithmetic average concentration (µg/m ³)			24.1	22.8	32.0
Exceedance for the year:	State: > 20 µg/m ³		Yes	Yes	Yes
Fine Particulates (PM_{2.5})					
Maximum 24-hour concentration (µg/m ³)			60.0	60.4	66.5
98 th percentile 24-hour concentration (µg/m ³)			44.8	33.9	56.3
Exceeded 98 th percentile:	Federal: > 35 µg/m ³		Yes	No	Yes
State Annual Standard Design Value (µg/m ³)			14.0	14.0	14.0
Exceedance for the Year:	State: > 12 µg/m ³		Yes	Yes	Yes
National Annual Standard Designation Value (µg/m ³)			11.2	11.6	13.9
Exceedance for the year:	Federal: > 15 µg/m ³		No	No	No
Nitrogen Dioxide					
Maximum 1 hour concentration (ppm)			0.062	0.078	0.062
Number of Days Exceeded:	State: > 0.25 ppm		0	0	0
Annual arithmetic average concentration (ppm)			0.015	0.014	No
Exceeded for the year:	Federal: > 0.053 ppm		No	No	No
Sulfur Dioxide¹					
Maximum 1 hour concentration (ppm)			0.016	0.009	0.006
Number of days exceeded:	State: > 0.25 ppm		0	0	0
Maximum 3 hour concentration (ppm)			0.008	0.005	0.005
Number of days exceeded:	Federal: > 0.5 ppm		0	0	0
Maximum 24 hour concentration (ppm)			0.004	0.002	0.002
Number of days exceeded:	State: > 0.04 ppm		0	0	0
	Federal: > 0.14 ppm		0	0	0

Source: California Air Resources Board. <http://www.arb.ca.gov/adam/welcome.html>; Environmental Protection Agency. <http://www.epa.gov/air/data/geosel.html>. 2013.

Notes:

¹ Measured at the Fresno Station.

ppm = parts per million

µg/m³ = micrograms per cubic meter

The data in Table 2.13 show that the monitoring results exceeded state 24-hour and annual PM₁₀ standards during the three-year period but did not exceed the federal 24-hour standard. The pollutant concentrations exceeded the federal PM_{2.5} 24-hour standard (98th percentile) in 2011 and 2013 as well as state PM_{2.5} annual standards, during the three-year period between 2011 and 2013. Eight-hour ozone levels exceeded both state and federal standards in 2012.

Hot Spot Methodology-Interagency Consultation

The project is within a nonattainment area for federal PM_{2.5} standards. Therefore, per 40 Code of Federal Regulations Part 93, analyses are required for conformity purposes. However, the Environmental Protection Agency does not require hot spot analyses, qualitative or quantitative, for projects that are not listed in Section 93.123 (b) (1) as an air quality concern.

According to the Environmental Protection Agency Transportation Conformity Guidance, an “interchange configuration project that involves either turn lanes or slots, or lanes or movements that are physically separated” is not a project of air quality concern. These kinds of projects improve operations by smoothing traffic flow and vehicle speeds by improving weave and merge operations, which would not be expected to create or worsen PM_{2.5} or PM₁₀ violations. In addition, the guidance indicates that “interchange reconfiguration projects that are designed to improve traffic flow and vehicle speeds, and do not involve increases in idling” are also not considered projects of air quality concern.

Interagency consultation was completed for this project on July 1, 2014 with the concurrence that the project is not a “project of air quality concern”. To finalize this process, a public notice soliciting public comments on the project-level conformity analysis will occur during circulation of the public review draft environmental document.

Mobile Source Air Toxics

In addition to the criteria air pollutants for which there are National Ambient Air Quality Standards, the Environmental Protection Agency also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g., factories or refineries).

Mobile Source Air Toxics are a subset of the 188 air toxics defined by the Federal Clean Air Act. Mobile Source Air Toxics are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted into the air when the fuel evaporates or passes through an engine unburned. Other toxics are from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

The Environmental Protection Agency is the lead federal agency for administering the Federal Clean Air Act and has certain responsibilities regarding the health effects of Mobile Source Air Toxics. The Environmental Protection Agency issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources (66 Federal Register 17229 [March 29, 2001]). This rule was issued under the authority in Section 202 of the Clean Air Act. In its rule, the Environmental Protection Agency examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline program, its national low-emission vehicle standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy-duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements.

Evaluating the environmental and health impacts from Mobile Source Air Toxics on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling to estimate ambient concentrations resulting from the estimated emissions, exposure modeling to estimate human exposure to the estimated concentrations, and then a final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the Mobile Source Air Toxics health impacts of projects.

Exposure to toxics has been a focus of a number of Environmental Protection Agency efforts. Most notably, the Environmental Protection Agency conducted the National Air Toxics Assessment to evaluate modeled estimates of human exposure applicable to the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the National Air Toxics Assessment database best illustrate the levels of various toxics when aggregated to a national or state level.

The Environmental Protection Agency is in the process of assessing the risk of various kinds of exposure to these pollutants. The Environmental Protection Agency

Integrated Risk Information System is a database of human health effects that may result from exposure to various substances found in the environment. The following toxicity information for the six prioritized Mobile Source Air Toxics was obtained from the Integrated Information System database Weight of Evidence Characterization summaries. This information represents the Environmental Protection Agency's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures:

- Benzene is characterized as a known human carcinogen.
- The potential carcinogenicity of acrolein cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation Route of exposure.
- Formaldehyde is a probable human carcinogen, based on limited evidence in humans and sufficient evidence in animals.
- 1,3-butadiene is characterized as carcinogenic to humans by inhalation.
- Acetaldehyde is a probable carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.
- Diesel Exhaust is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel Exhaust is the combustion of diesel particulate matter and diesel exhaust organic gases.
- Diesel Exhaust also represents chronic respiratory effects, possibly the primary non-cancer hazard from Mobile Source Air Toxics. Prolonged exposures to Diesel Exhaust may impair pulmonary function and could produce symptoms such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

Because of the uncertainties outlined above, a quantitative assessment of the effects of air toxic emissions impacts on human health cannot be made at the project level. While available tools allow reasonable prediction of relative emission changes between alternatives for larger projects, the amount of Mobile Source Air Toxics emissions from the proposed project cannot be predicted with sufficient accuracy to be useful in estimating health impacts.

2.2.5.3 Environmental Consequences

Air pollutant emissions associated with the project would occur over the short term from construction, such as fugitive dust from grading/site preparation and equipment exhaust. Long-term emissions would improve from enhanced traffic flow that would

result from the construction of the project. The objective of the project is to lessen future traffic congestion and vehicle queues and improve public safety. The project is not expected to generate any additional traffic. Future regional traffic trips would remain similar. Therefore, no new long-term regional air pollution emissions would result from the project. The project would improve future traffic movement in the vicinity along McKinley Avenue and State Route 120, thereby lowering the total pollutants emitted by motor vehicles.

Carbon Monoxide Hot Spot Analysis

Caltrans has developed a Transportation Project-Level Carbon Monoxide Protocol (protocol) for assessing carbon monoxide impacts of transportation projects. The procedures and guidelines comply with the following regulations without imposing additional requirements: Section 176(c) of the 1990 Clean Air Act Amendments, federal conformity rules, State and local adoptions of the federal conformity rules, the National Environmental Policy Act, and the California Environmental Quality Act requirements (California Code of Regulations Title 21 Section 1509.3[25]).

Two conformity-requirement decision flow charts are provided in the protocol (in the Air Quality Report as listed in Appendix E). An analysis of the steps used to determine the conformity requirements that apply to new projects is provided below:

3.1.1 Is the project exempt from all emissions analyses? No. The proposed project is not exempt from all emissions analyses.

3.1.2 Is the project exempt from regional emissions analysis? No. The project is an interchange construction project, which is not exempt from regional emissions analysis per California Code of Federal Regulations 93.127.

3.1.3 Is the project locally defined as regionally significant? Yes. The project would involve a new interchange along State Route 120 at the McKinley Avenue undercrossing in the southwestern portion of the City of Manteca. The project was listed as a regionally significant project in the San Joaquin Council of Governments' Air Quality Conformity Analysis for the 2011 Regional Transportation Plan. The project is defined as regionally significant.

3.1.4 Is the Project in a federal attainment area? No. The project is within an attainment/maintenance area for the federal carbon monoxide standard.

3.1.5 Are there currently conforming Regional Transportation Plan and Transportation Improvement Program (TIP)? Yes. As provided in the San Joaquin Council of Governments 2011 Regional Transportation Plan (in effect until approval of San Joaquin Council of Governments 2014 Regional Transportation Plan) and 2013 Federal Transportation Improvement Program (in effect until approval of 2015 Federal Transportation Improvement Program).

3.1.6 Is the Project included in the regional emissions analysis supporting the currently conforming Regional Transportation Plan and TIP? Yes. The project is included in the San Joaquin Council of Governments 2011 Regional Transportation Plan and the 2013 Federal Transportation Improvement Programs (Project ID: SJ07-2009; Description: State Route 120 at McKinley Avenue, reconstruct/improve interchange including necessary auxiliary lanes).

3.1.7 Has the project design/concept and/or scope changes significantly from that in the regional analysis? No. The project is consistent with the project description in the 2011 Regional Transportation Plan/2013 Federal Transportation Improvement Programs.

3.1.8 Examine local impacts (proceed to Section 4).

Section 4 of the protocol assesses local analysis. Assessment of the project's effect on localized ambient air quality is based on analysis of carbon monoxide and PM₁₀ emissions, with the focus on carbon monoxide. Localized emissions of carbon monoxide and PM₁₀ may increase with implementation of the project. Carbon monoxide is used as an indicator of a project's direct and indirect impact on local air quality, because carbon monoxide does not readily disperse in the local environment in cool weather when the wind is fairly still. The protocol states that the determination of project-level carbon monoxide impacts should be carried out according to the Local Analysis Flow Chart. The following discussion provides analysis for every step of the local analysis as described in detail in the protocol:

Level 1: Is the project in a carbon monoxide nonattainment area? No. The project site is located in a federal attainment/maintenance area.

Level 1 (Continued): Was the area redesignated as "attainment" after the 1980 Clean Air Act? Yes. The Environmental Protection Agency proposed and approved the maintenance plans and redesignation request in 1998.

Level 1 (Continued): Has the “continued attainment” been verified with the local Air District, if appropriate? Yes. The project area continues to be in attainment for carbon monoxide (Proceed to Level 7).

Level 7: Does the project worsen air quality? Yes. The project would construct a new highway interchange. Therefore, the project would potentially worsen air quality:

- a. Project does not significantly increase the percentage of vehicles operating in cold start mode. Increasing the number of vehicles operating in cold start mode by as little as 2 percent should be considered potentially significant.
- b. The percentage of vehicles operating in cold start mode would be the same or lower for the interchange under study compared to those used for the intersection in the attainment plan. It is anticipated that all vehicles in the intersection would be in a fully warmed-up mode. Therefore, this condition is met.
- c. Project does not significantly increase traffic volumes. Increases in traffic volumes in excess of 5 percent should be considered potentially significant. Increasing the traffic volume by less than 5 percent may still be potentially significant if there is a corresponding reduction in average speeds.

As indicated in Table 2.14, the project would significantly change the traffic volumes along McKinley Avenue between Bronzan Road and Daniels Street. Therefore, this condition is not met.

Table 2.14 Traffic Data-Peak Hour Traffic on McKinley Avenue

Model Year	Without Project (Vehicles/Hour)	With Project (Vehicles/Hour)	Project Related Increase in Traffic (Vehicles/Hour)	Percent Increase (%)
2020	1,960	2,790	830	42
2040	3,260	4,770	1,510	46

Source: Air Quality Analysis State Route 120/McKinley Avenue Interchange Project, pg. 23, June 2014.

- d. Project improves traffic flow. For uninterrupted roadway segments, higher average speeds (up to 50 miles per hour) should be regarded as an

improvement in traffic flow. For intersection segments, higher average speeds and a decrease in average delay should be considered an improvement in traffic flow.

Table 2.15 shows that the project would improve the level of service at some intersections in the project site area. However, at certain intersections, the project would degrade the level of service rating. Therefore, this criterion is not met.

Table 2.15 Intersection Analysis - 2020 and 2040 Conditions

Intersection	Peak Hour	Without Project		With Project	
		Delay	Level of Service	Delay	Level of Service
2020 Conditions					
1. State Route 120 Westbound Ramps/Yosemite Avenue	AM	>1,000	F	>1,000	F
	PM	>1,000	F	>1,000	F
2. State Route 120 Eastbound Ramps/Yosemite Avenue	AM	>1,000	F	>1,000	F
	PM	>1,000	F	>1,000	F
3. McKinley Avenue/Yosemite Avenue	AM	>1,000	F	>1,000	F
	PM	>1,000	F	>1,000	F
4. McKinley Avenue/Bronzan Road	AM	6	A	12	B
	PM	113	F	12	B
5. Airport Way/Daniels Street	AM	276	F	67	E
	PM	>1,000	F	986	F
6. State Route 120 Westbound Ramps/Airport Way	AM	89	F	56	E
	PM	131	F	69	E
7. State Route 120 Eastbound Ramps/Airport Way	AM	122	F	104	F
	PM	132	F	128	F
8. Airport Way/Atherton Drive	AM	589	F	285	F
	PM	>1,000	F	587	F
9. State Route 120 Westbound Ramps/Union Road	AM	11	B	8	A
	PM	11	B	10	B
10. State Route 120 Eastbound Ramps/Union Road	AM	9	A	8	A
	PM	17	B	14	B
11. McKinley Avenue/Daniels Street	AM	8	A	6	A
	PM	9	B	14	B
12. McKinley Avenue/Atherton Drive	AM	117	F	38	D
	AM	>1,000	F	>1,000	F
2040 Conditions					
1. State Route 120 Westbound Ramps/Yosemite Avenue	AM	>1,000	F	>1,000	F
	PM	>1,000	F	>1,000	F
2. State Route 120 Eastbound Ramps/Yosemite Avenue	AM	>1,000	F	>1,000	F
	PM	>1,000	F	>1,000	F
3. McKinley Avenue/Yosemite Avenue	AM	163	F	29	C
	PM	336	F	48	D
4. McKinley Avenue/Bronzan Road	AM	7	A	11	B
	PM	12	B	10	B

Table 2.15 Intersection Analysis - 2020 and 2040 Conditions

Intersection	Peak Hour	Without Project		With Project	
		Delay	Level of Service	Delay	Level of Service
5. Airport Way/Daniels Street	AM	405	F	67	E
	PM	>1,000	F	949	F
6. State Route 120 Westbound Ramps/ Airport Way	AM	115	F	55	D
	PM	120	F	69	E
7. State Route 120 Eastbound Ramps/ Airport Way	AM	116	F	56	D
	PM	132	F	126	F
8. Airport Way/Atherton Drive	AM	794	F	463	F
	PM	>1,000	F	573	F
9. State Route 120 Westbound Ramps/ Union Road	AM	8	A	8	A
	PM	11	B	10	B
10. State Route 120 Eastbound Ramps/Union Road	AM	8	A	9	A
	PM	17	B	14	B
11. McKinley Avenue/Daniels Street	AM	16	B	12	B
	PM	10	B	340	F
12. McKinley Avenue/Atherton Drive	AM	289	F	33	C
	PM	136	F	31	C

Source: Air Quality Analysis State Route 120/McKinley Avenue Interchange Project, pgs. 24 and 25, June 2014.

Level 7 (Continued): Is the projects suspected of resulting in higher carbon monoxide concentrations than those existing within the region at the time of attainment demonstration? No. The 2004 update to the 1996 Carbon Monoxide Maintenance Plan projects that the 8-hour carbon monoxide concentrations was 4.4 parts per million by 2010 in the project area. As shown in Table 2.13 , the maximum 8-hour carbon monoxide concentration in the project area was 2.1 parts per million, 1.8 parts per million, and 1.8 parts per million in 2011, 2012, and 2013, respectively. Therefore, it is unlikely that the project would result in a new exceedance of the carbon monoxide standards. However, to demonstrate that the project would not result in any new exceedance, the carbon monoxide concentrations at the 10 most congested intersections in the project area were analyzed. Table 2.16 shows the 1-hour and 8-hour carbon monoxide concentrations under 2020 and 2040 conditions. As shown, none of the intersections would result in any concentrations exceeding the 1-hour or 8-hour carbon monoxide standards.

Table 2.16 Modeled Carbon Monoxide Concentrations

Intersection	2020/2040 with Project 1-Hour Carbon Monoxide Concentration (ppm)	2020/2040 with Project 8-Hour Carbon Monoxide Concentration (ppm)	Exceed State Standards	
			1-Hour (20.0 ppm)	8-Hour (9.0 ppm)
Yosemite Avenue and McKinley Avenue	4.2 / 4.0	3.1 / 2.9	No	No
	4.2 / 3.9	3.1 / 2.9	No	No
	4.2 / 3.9	3.1 / 2.9	No	No
	4.1 / 3.9	3.0 / 2.9	No	No
Bronzan Road and McKinley Avenue	3.9 / 3.9	2.9 / 2.9	No	No
	3.9 / 3.9	2.9 / 2.9	No	No
	3.8 / 3.8	2.8 / 2.8	No	No
	3.8 / 3.8	2.8 / 2.8	No	No
Daniels Street and Airport Way	4.3 / 3.8	3.1 / 2.8	No	No
	4.2 / 3.8	3.1 / 2.8	No	No
	4.1 / 3.8	3.0 / 2.8	No	No
	4.1 / 3.8	3.0 / 2.8	No	No
Atherton Drive and Airport Way	3.9 / 3.7	2.9 / 2.7	No	No
	3.9 / 3.7	2.9 / 2.7	No	No
	3.8 / 3.6	2.8 / 2.7	No	No
	3.8 / 3.6	2.8 / 2.7	No	No
Daniels Street and McKinley Avenue	3.8 / 3.8	2.8 / 2.8	No	No
	3.7 / 3.7	2.7 / 2.7	No	No
	3.7 / 3.7	2.7 / 2.7	No	No
	3.6 / 3.6	2.7 / 2.7	No	No
Atherton Drive and McKinley Avenue	4.2 / 4.0	3.1 / 2.9	No	No
	4.2 / 4.0	3.1 / 2.9	No	No
	4.1 / 3.9	3.0 / 2.9	No	No
	4.1 / 3.9	3.0 / 2.9	No	No

Source: Air Quality Analysis Report, Table 8: CO Concentrations, June 2014.

Notes: Includes ambient one-hour concentration of 3.1 parts per million and ambient eight-hour concentration of 2.3 parts per million. Measured at the Hazelton Street, Stockton, CA AQ Station in San Joaquin County.
ppm = parts per million

Interagency Consultation

Caltrans determined that the project was not a project of air quality concern; concurrence of this determination was given by the Environmental Protection Agency via email on June 30, 2014 and by the Federal Highway Administration in July 1, 2014. An Air Quality Conformity Report (July 2014 – as listed in Appendix E) for the project was subsequently approved in July 1, 2014.

PM_{2.5} and PM₁₀

The project is within a nonattainment area for federal PM_{2.5} standards. Therefore, per 40 Code of Federal Regulations Part 93, analyses are required for conformity purposes. However, the Environmental Protection Agency does not require hot spot

analyses, qualitative or quantitative, for projects that are not listed in Section 93.123(b) (1) as an air quality concern.

The project does not qualify as a project of air quality concern because of the following reasons:

- The project is not a new or expanded highway project and is not considered to significantly affect diesel truck traffic on State Route 120. The project is an interchange construction project that does not increase the capacity of State Route 120. This type of project improves freeway operations by reducing traffic congestion at existing interchanges and improving merge operations. Based on the Revised Final Traffic Report (April 2013), the project would increase the traffic volumes along McKinley Avenue. However, the traffic volumes along McKinley Avenue would not exceed the 125,000 average daily trip thresholds for a project of air quality concern. In addition, the total truck average daily trips would remain below the 10,000 vehicle threshold for projects of air quality concern (based on a worst-case assumption of 8 percent truck trips on McKinley Avenue). The future traffic volumes along McKinley Avenue are shown in Table 2.17.

**Table 2.17 Traffic Data-Daily Traffic on McKinley Avenue
(Average Annual Daily Traffic/Truck Average Daily Traffic)**

Model Year	Without Project (Vehicles/Hour)	With Project (Vehicles/Hour)	Project Related Increase in Traffic (Vehicles/Hour)
2020	19,600/1,568	27,900/2,232	8,300/664
2040	32,600/2,608	47,700/3,816	15,100/1,208

Source: Air Quality Analysis State Route 120/McKinley Avenue Interchange Project, pg. 27, June 2014.

- The project does not affect intersections that are at level of service D, E, or F with a significant number of diesel vehicles. As indicated above, the project improves level of service at most of the intersections in the area. Intersections where the project would increase the delay would not be affected by a significant increase in the number of diesel vehicles.
- The project does not include the construction of new bus or rail terminals.
- The project does not expand an existing bus or rail terminal.
- The project is not in or affecting locations, areas, or categories of sites that are identified in the PM_{2.5} or PM₁₀ violation.

Therefore, the project meets the Clean Air Act requirements and 40 Code of Federal Regulations 93.116 without any explicit hot spot analysis. The project would not create a new, or worsen an existing, PM_{2.5} or PM₁₀ violation.

Short-Term Construction-Related Impacts

During construction, short-term degradation of air quality may occur due to the release of particulate emissions generated by excavation, grading, hauling, and other activities related to construction. Emissions from construction equipment also are anticipated and would include carbon monoxide, nitrogen oxides, volatile organic compounds, directly emitted particulate matter (PM_{2.5} and PM₁₀), and toxic air contaminants such as diesel exhaust particulate matter.

The proposed construction schedule for all improvements to be finalized is approximately 36 months, with an expected start in early 2017 and completion by early 2020. The San Joaquin Valley Air Pollution Control District does not provide a model for calculating construction emissions; however, construction emissions were estimated for the project using the Sacramento Metropolitan Air Quality Management District’s Road Construction emissions Model, Version 6.3.2, which can also be used for projects in the San Joaquin Valley. Construction-related emissions are shown in Table 2.18. The summary of construction emissions shown below are based on the assumption that the schedule for all construction activities is expected to start in early 2017.

Table 2.18: Estimated Maximum Project Construction Emissions

Construction Phases	Reactive Organic Gases	Carbon Monoxide	Nitrogen Oxide	Total PM₁₀	Total PM_{2.5}	Carbon Dioxide
Grubbing/Land Clearing (pounds/day)	11.7	48.1	92.5	53.9	13.9	11,758.4
Grading/Excavation (pounds/day)	15.4	114.3	107.4	54.8	14.6	19,522.9
Drainage/Utilities/Sub-Grade (pounds/day)	5.8	27.3	40.5	52.0	12.2	6,183.4
Paving (pounds/day)	3.5	16.5	19.8	1.6	1.5	2,491.9
Maximum (pounds/day)	15.4	114.3	107.4	54.8	14.6	19,522.9
Total (Metric Tons/ construction project)	4.1	26.6	28.9	18.2	4.7	4,850.2
Annual Construction Emissions (Metric Tons)	1.4	8.9	9.6	6.1	1.6	1,616.7
Threshold (Metric Tons/year)	10	NA	10	15	NA	NA

Source: Air Quality Analysis, Table 10: Maximum Project Construction Emissions, pg. 29, June 2014.

Notes: NA – Not Applicable.

As noted in Table 2.18, construction emissions for reactive organic gases, nitrogen oxide and PM₁₀ would not exceed the tons per year thresholds as recommended by San Joaquin Valley Air Pollution Control District. The Guide for Assessing and Mitigating Air Quality Impacts also indicates that compliance with Regulation VIII would constitute sufficient mitigation to ensure that adverse effects from PM₁₀ emissions from construction activities are reduced to an acceptable level per local, state, and federal standards. Initial estimates indicate that the Rule 9510 threshold of 2 tons per year for nitrogen oxide may be exceeded; however, detailed construction schedules and equipment uses are not available at this time. Therefore, precise calculations cannot be done at this time, and it is uncertain if the project would exceed the thresholds established in Rule 9510. As more detailed information becomes available, the project sponsor would reevaluate the estimates of construction-related emissions, and if necessary, submit an application to the San Joaquin Valley Air Pollution Control District to comply with Rule 9510. Should it be determined that the project must comply with Rule 9510, the project may be required to use special provisions during construction, such as use of reduced emission construction vehicles as a condition of the permit.

Long-Term Impacts

The project is locally defined as regionally significant because the project would increase the number of lanes on McKinley Avenue and would develop a new interchange along State Route 120. The project was listed as a regionally significant project in the San Joaquin Council of Governments' Air Quality Conformity Analysis for the 2011 Regional Transportation Plan.

However, the project would not contribute to the degradation of future air quality during operational activities for the following reasons:

- The project would not significantly increase the percentage of vehicles operating in cold start mode. The percentages of vehicles operating in cold start mode is the same or lower for the study intersections compared to those used for the intersections in the attainment plan. It is anticipated that all vehicles using the intersections around the project site would be operating in fully warmed-up mode.
- The project does contribute to an increase in traffic volumes on McKinley Avenue; however, the level of service at surrounding intersections would improve with project implementation. The project includes a new interchange; however,

the project would not contribute to an increase in the average daily traffic of State Route 120. In addition, there is no reduction in average speeds.

- The project would improve traffic flow along State Route 120 and McKinley Avenue by improving the level of service at key intersections in the project area.

Mobile Source Air Toxics Analysis

Under the project, it is expected that there would be similar or lower Mobile Source Air Toxics emissions in the surrounding area relative to the no-build 2020 and 2040 scenarios due to improvements to level of service. On a regional basis, the Environmental Protection Agency's vehicle and fuel regulations, coupled with fleet turnover, would over time cause a substantial reduction that, in almost all cases would cause region-wide Mobile Source Air Toxics levels to be substantially lower than they are under existing conditions.

Conformity Analysis

Conformity is determined by analyzing direct and indirect emissions associated with project implementation. If the total of direct and indirect emissions from the project reaches or exceeds the regionally significant thresholds, the Lead Agency would be required to perform a conformity determination to demonstrate the positive conformity of the federal action.

The project is expected to improve traffic flow and reduce delay and congestion. No adverse effects associated with carbon monoxide, PM_{2.5}, or PM₁₀ hot spots would occur as a result of project implementation.

The 2013 Federal Transportation Improvement Program includes discussion of the project, which was found to be in conformance by the Federal Highway Administration/Federal Transit Administration on December 13, 2012. Regional PM_{2.5} and PM₁₀ State Implementation Plan budget compliance was accounted for during the current conformity determination. The design concept and scope of the project are consistent with the federally approved 2011 Regional Transportation Plan and 2013 Federal Transportation Improvement Programs. Therefore, the project complies with the State Implementation Plan, and no adverse effects regarding conformity would occur with project implementation.

2.2.5.4 Avoidance, Minimization, and/or Mitigation Measures

The following air quality avoidance and minimization measures would be implemented to reduce adverse effects due to project implementation.

Construction Minimization Measures

The following minimization measures would be implemented to reduce or minimize air pollutant emissions associated with project construction activities:

- AQ-1:** To reduce fugitive dust emissions the construction contractor shall adhere to the requirements of San Joaquin Valley Air Pollution Control District Regulation VIII.
- AQ-2:** The construction contractor shall comply with Caltrans' Standard Specifications Section 7-1.01 F and Section 10.
- AQ-3:** The construction contractor shall comply with San Joaquin Valley Air Pollution Control District Rule 9510 and shall submit an Air Impact Assessment application, if it is determined that the construction-related emissions associated with the project exceed the established thresholds.
- AQ-4:** All disturbed areas, including storage piles, which are not being actively used for construction purposes, shall be effectively stabilized from dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.
- AQ-5:** All onsite unpaved roads and offsite unpaved access roads shall be effectively stabilized for dust emissions using water or chemical stabilizer/suppressant.
- AQ-6:** All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled for fugitive dust emissions using application of water or by presoaking.
- AQ-7:** When materials are transported offsite, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least 6 inches of freeboard space from the top of the container shall be maintained.
- AQ-8:** All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden).

- AQ-9:** Following the addition of material to, or the removal of material from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emission using sufficient water or chemical stabilizer/suppressant.
- AQ-10:** Within urban areas, track out shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
- AQ-11:** Any construction area within the project site with 150 or more vehicle trips per day shall prevent carryout and track out.
- AQ-12:** Traffic speeds within the project site on unpaved roads shall be limited to a maximum of 15 miles per hour.
- AQ-13:** The construction contractor shall install sandbags or other erosion control measures to prevent silt runoff to public roadways from construction areas with a slope greater than 1 percent.
- AQ-14:** The construction contractor shall install wind breaks at windward side(s) of construction areas within the proposed project site.
- AQ-15:** The construction contractor shall suspend excavation and grading activity when winds exceed 20 miles per hour (regardless of wind speed, an owner/operator must comply with Regulation VIII's 20 percent opacity limitation).
- AQ-16:** The construction contractor shall limit area excavation, grading, and other construction activity at any one time.
- AQ-17:** The construction contractor shall properly and routinely maintain all construction equipment, as recommended by the manufacturers' manuals, to control exhaust emissions.
- AQ-18:** The construction contractor shall ensure that construction equipment is shut down when not in use for extended periods of time to reduce emissions associated with construction equipment idling.
- AQ-19:** The construction contractor shall limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use simultaneously.

AQ-20: The construction contractor shall curtail construction activities during periods of high ambient air pollutant concentrations; this may include cessation of construction activity during the peak hour of vehicular traffic on adjacent roadways.

Implementation of the minimization measures identified above would ensure that adverse air pollution emissions associated with project construction would be reduced to acceptable levels per local, state, and federal standards.

Operational Minimization Measures

Adverse effects from air pollution emissions are not expected to occur during project operation. Therefore, no avoidance, minimization or mitigation measures would be required.

2.2.5.5 Climate Change

Climate change is analyzed at the end of this chapter. Neither the Environmental Protection Agency nor Federal Highway Administration has issued explicit guidance or methods to conduct project-level greenhouse gas analysis. As stated on the Federal Highway Administration's climate change website (<http://www.fhwa.dot.gov/hep/climate/index.htm>), climate change considerations should be integrated throughout the transportation decision-making process—from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will aid decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

Because there have been more requirements set forth in California legislation and executive orders on climate change, the issue is addressed in a separate California Environmental Quality Act discussion at the end of this chapter and may be used to inform the National Environmental Policy Act decision. The four strategies set forth by the Federal Highway Administration to lessen climate change impacts do correlate with efforts that the State has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation

system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours traveled.

2.2.6 Noise

This section discusses the noise that would be generated by the project during construction and operational activities. Information in this section is based on the Noise Study Report (June 2014 – as listed in Appendix E) prepared for the project.

2.2.6.1 Regulatory Setting

The National Environmental Policy Act of 1969 and the California Environmental Quality Act provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between National Environmental Policy Act and California Environmental Quality Act.

California Environmental Quality Act

The California Environmental Quality Act requires a strict baseline versus build analysis to assess whether a proposed project would have a noise impact. If a proposed project is determined to have a significant noise impact under California Environmental Quality Act, then the act dictates that mitigation measures must be incorporated into the project unless those measures are not feasible. The California Environmental Quality Act noise analysis is included at the end of this section.

National Environmental Policy Act And 23 CFR 772

For highway transportation projects with Federal Highway Administration (and Caltrans, as assigned) involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 Code of Federal Regulations 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations include Noise Abatement Criteria that are used to determine when a noise impact would occur. The Noise Abatement Criteria differ depending on the type of land use under analysis. For example, the Noise Abatement Criteria for residences (67 A-weighted decibel) is lower than the Noise Abatement Criteria for commercial areas (72 A-weighted decibel). Table 2.19 lists the Noise Abatement Criteria for use in the National Environmental Policy Act 23 Code of Federal Regulations 772 analysis.

Table 2.19 Noise Abatement Criteria

Activity Category	Noise Abatement Criteria, Hourly A-Weighted Noise Level, $L_{eq}(h)$	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B ¹	67 (Exterior)	Residential.
C ¹	67 (Exterior)	Active sport areas, amphitheatres, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.
F	No Noise Abatement Criteria-Reporting Only	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical, etc.), and warehousing.
G	No Noise Abatement Criteria-Reporting Only	Undeveloped lands that are not permitted.

Source: Federal Highway Administration 23 Code of Federal Regulations 772.

Notes: 1 Includes undeveloped lands permitted for this activity category.

$L_{eq}(h)$ = equivalent continuous sound level per hour

Figure 2.10 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels discussed in this section.

According to Caltrans Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 2011, a noise impact occurs when the predicted future noise level with the project substantially exceeds the existing noise level (defined as a 12 A-weighted decibel or more increase) or when the future noise level with the project approaches or exceeds the Noise Abatement Criteria. Approaching the Noise Abatement Criteria is defined as coming within 1 A-weighted decibel of the criteria.

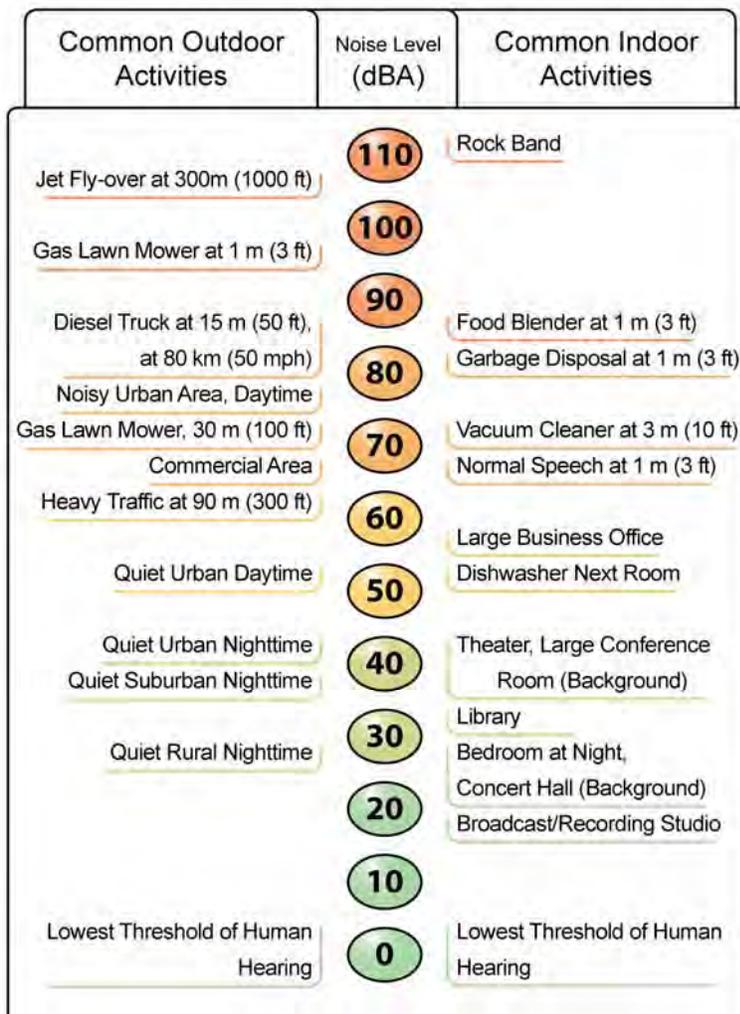


Figure 2.10 Noise Levels of Common Activities³

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated into the project.

³ California Department of Transportation, Standard Environmental Reference, <http://www.dot.ca.gov/ser/>. Forms and Templates, IS/EA Annotated Outline (posted 8-13-13). Accessed May 2013.

Caltrans Traffic Noise Analysis Protocol sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 7 A-weighted decibel reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, and safety considerations. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include: residents' acceptance and the cost per benefited residence.

2.2.6.2 Affected Environment

The following analysis is based on the Noise Study Report (June 2014 – as listed in Appendix E) prepared for the project.

Sensitive Land Uses

Developed and undeveloped land uses in the project vicinity were identified through land use maps, aerial photography, and site inspection. Within each land use category, existing sensitive receptors were identified. Existing land uses in the project area include single-family residential units, vacant land, agricultural land, and retail facilities. Existing land uses in the project area are described below:

- Northwestern corner of State Route 120 and McKinley Avenue: Land uses in this area include single-family residential units, vacant land, and agricultural land. Land uses in this area range from about 25 feet to 35 feet lower in elevation than State Route 120. The single-family residential units were evaluated under Activity Category B, which has an exterior Noise Abatement Criteria of 67 dB(A) L_{eq} . Agricultural uses were classified under Activity Category F. Vacant land was classified under Activity Category G. Both Activity Categories F and G have no Noise Abatement Criteria, and noise levels were used for reporting purposes only.
- Northeastern corner of State Route 120 and McKinley Avenue: Land uses in this area include single-family residential units, vacant land, and retail facilities. Land uses in this area range from about 6 to 24 feet lower in elevation than State Route 120. Single-family residences were evaluated under Activity Category B, which has an exterior Noise Abatement Criteria of 67.0 dB(A) L_{eq} . Retail facilities were classified under Category F for reporting purposes. Vacant land was classified under Activity Category G. Both Activity Categories F and G have no Noise Abatement Criteria, and noise levels were used for reporting purposes.

- Southwestern corner of State Route 120 and McKinley Avenue: Land uses in this area include single-family residences. Land uses in this area range from about 24 to 40 feet lower in elevation than State Route 120. Single-family residential units were evaluated under Activity Category B, which has an exterior Noise Abatement Criteria of 67.0 dB(A) L_{eq} .
- Southeastern corner of State Route 120 and McKinley Avenue: Land uses in this area include single-family residential units. Land uses in this area range from about 6 to 15 feet lower in elevation than State Route 120. Single-family residential units were evaluated under Activity Category B, which has an exterior Noise Abatement Criteria of 67.0 dB (A) L_{eq} .

Existing Ambient Noise Levels In Project Vicinity

Short-term and long-term 24-hour traffic noise levels were measured to document the existing ambient noise level in the vicinity of the project site.

Short-term noise levels were measured on October 16, 2012 by a qualified noise technician using a Larson Davis Model 720 Type 2 Sound Level Meter. The main source of noise in the project area is traffic on State Route 120. Table 2.20 shows the results of the short-term noise level measurements and a description of the noise monitoring locations.

Table 2.20 Short-Term Existing Ambient Noise Monitoring Results

Noise Monitor	Noise Level (dB(A) L_{eq})	Location Description	Noise Source
ST-1	54.9	2393 Donatello Street. In the backyard. Located on the southeast corner of State Route 120 and McKinley Avenue.	Traffic on State Route 120
ST-2	56.9	2641 Silhouettes Street. In the backyard. Located on the southeast corner of State Route 120 and McKinley Avenue.	Traffic on State Route 120
ST-3	52.4	2799 Silhouettes Street. In the backyard. Located on the southeast corner of State Route 120 and McKinley Avenue.	Traffic on State Route 120
ST-4	53.9	19589 McKinley Avenue. In the back of the home. Located on the southwest corner of State Route 120 and McKinley Avenue.	Traffic on State Route 120 and McKinley Avenue
ST-5	50.6	2641 Bronzan Road. In the backyard. Located on the southwest corner of State Route 120 and McKinley Avenue.	Traffic on State Route 120
ST-6	57.6	19088 McKinley Avenue. In front of the RV trailer. Located on the northeast corner of State Route 120 and McKinley Avenue.	Traffic on State Route 120 and McKinley Avenue
ST-7	55.8	19051 McKinley Avenue. In front of the home. Located on the northwest corner of State Route 120 and McKinley Avenue.	Traffic on State Route 120

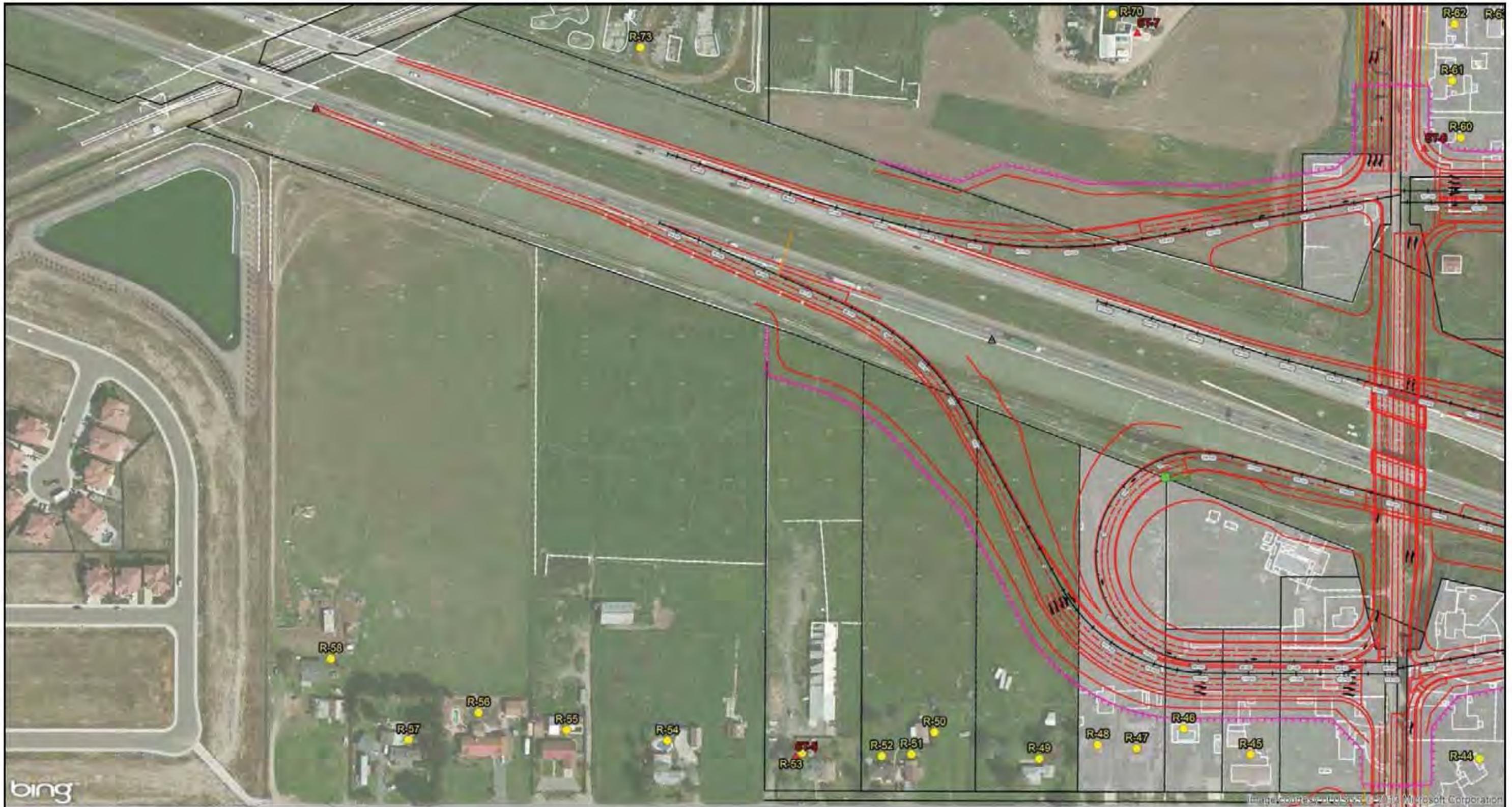
Source: State Route 120/McKinley Avenue Interchange Noise Study Report, Table 6-1: Short-Term Ambient Noise Monitoring Results, pg. 23, June 2014.

Notes: dB(A) = A-weighted decibels State Route 120 = State Route 120 L_{eq} = equivalent continuous sound level.

The short-term noise measurements shown in Table 2.20 were used to calibrate the noise model and predict the noise levels at all 73 modeled receptors in the project area.

Long-term ambient noise monitoring was done using a Larson Davis Model 720 Type 2 Sound Level Meter at one location within the project site (see Figures 2.11 through 2.14). The purpose of the long-term monitoring was to gather sound level data over a 24-hour period to determine the ambient daytime and nighttime noise levels within the project site and vicinity and to determine the loudest ambient noise level over a 1-hour period. The long-term noise level was measured over a 72-hour period starting at 1:00 p.m. on Monday, November 5, 2012 and ending at 1:00 p.m. on Thursday, November 8, 2012. Table 2.21 shows the hourly Leq noise levels of a 24-hour period during the long-term noise monitoring starting on November 7, 2012 at 12:00 a.m. and ending on November 8, 2012 at 12:00 a.m.

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Image courtesy of the State of California, 2013. Microsoft Corporation

LEGEND

- Alternative I Alignment
- Proposed State Right-of-Way
- City Right-of-Way
- Modeled Receptors
- ▲ Short-Term Monitoring Locations
- Long-Term Monitoring Location
- Full Property Acquisition



SOURCE: Noise Study Report State Route 120/McKinley Avenue Interchange Project (May 2013)

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State Route 120/McKinley Avenue Interchange
 Manteca, San Joaquin County, California
 10-SJ-120-PM 1.9-3.0
 EA 10-OH8900

Figure 2.11: Noise Monitoring and Modeled Receptor Locations

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Image courtesy of USGS © 2013 Microsoft Corporation

State Route 120/McKinley Avenue Interchange
 Manteca, San Joaquin County, California
 10-SJ-120-PM 1.9-3.0
 EA 10-OH8900

LEGEND

- Alternative 1 Alignment
- Proposed State Right-of-Way
- City Right-of-way
- Modeled Receptors
- ▲ Short-Term Monitoring Locations
- Long-Term Monitoring Location
- Full Property Acquisition

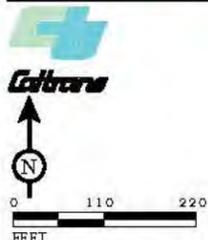


Figure 2.12: Noise Monitoring and Modeled Receptor Locations

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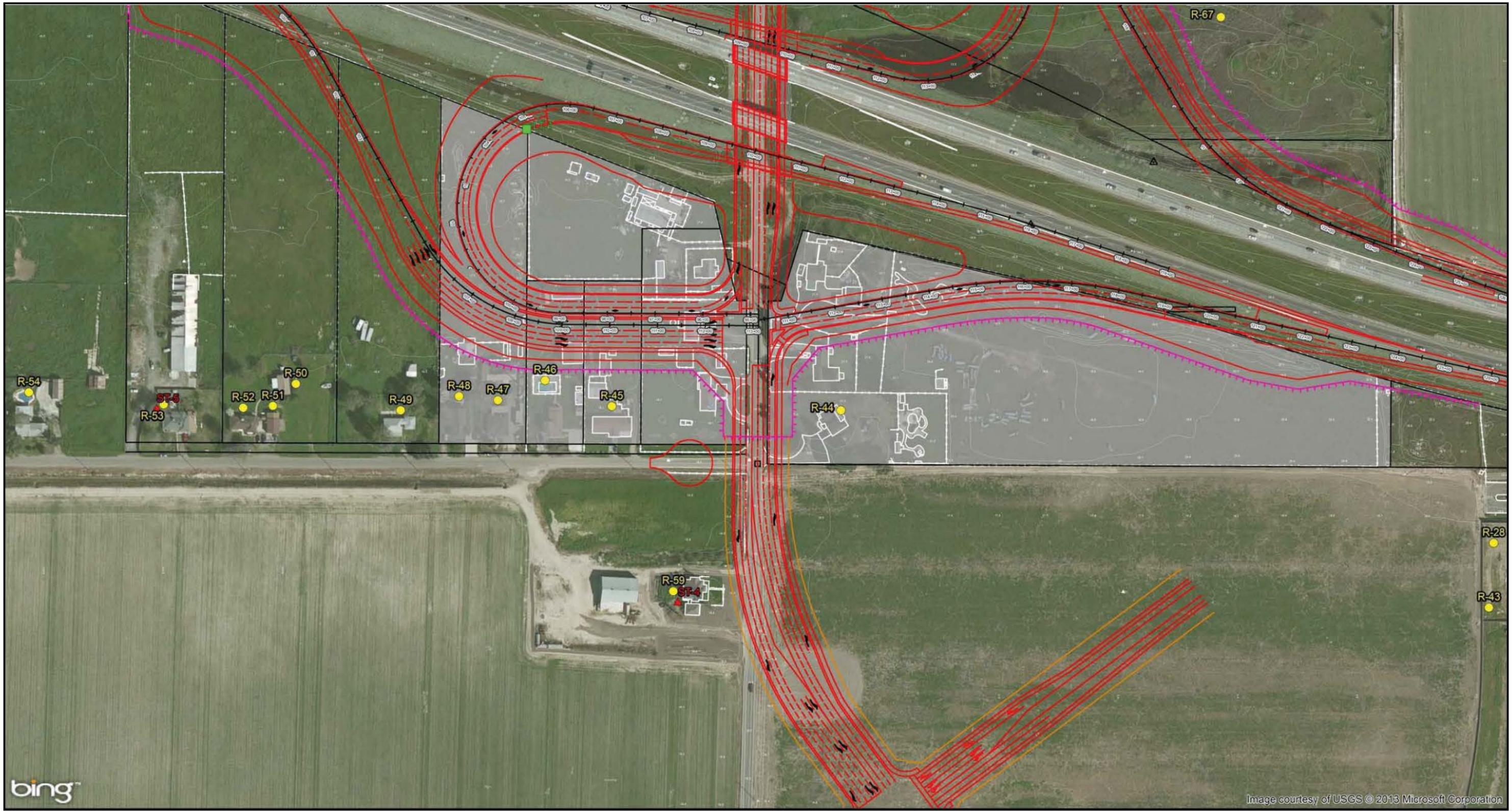


Image courtesy of USGS © 2013 Microsoft Corporation

State Route 120/McKinley Avenue Interchange
 Manteca, San Joaquin County, California
 10-SJ-120-PM 1.9-3.0
 EA 10-OH8900

LEGEND

- Alternative 1 Alignment
- Proposed State Right-of-Way
- City Right-of-way
- Modeled Receptors
- ▲ Short-Term Monitoring Locations
- Long-Term Monitoring Location
- Full Property Acquisition

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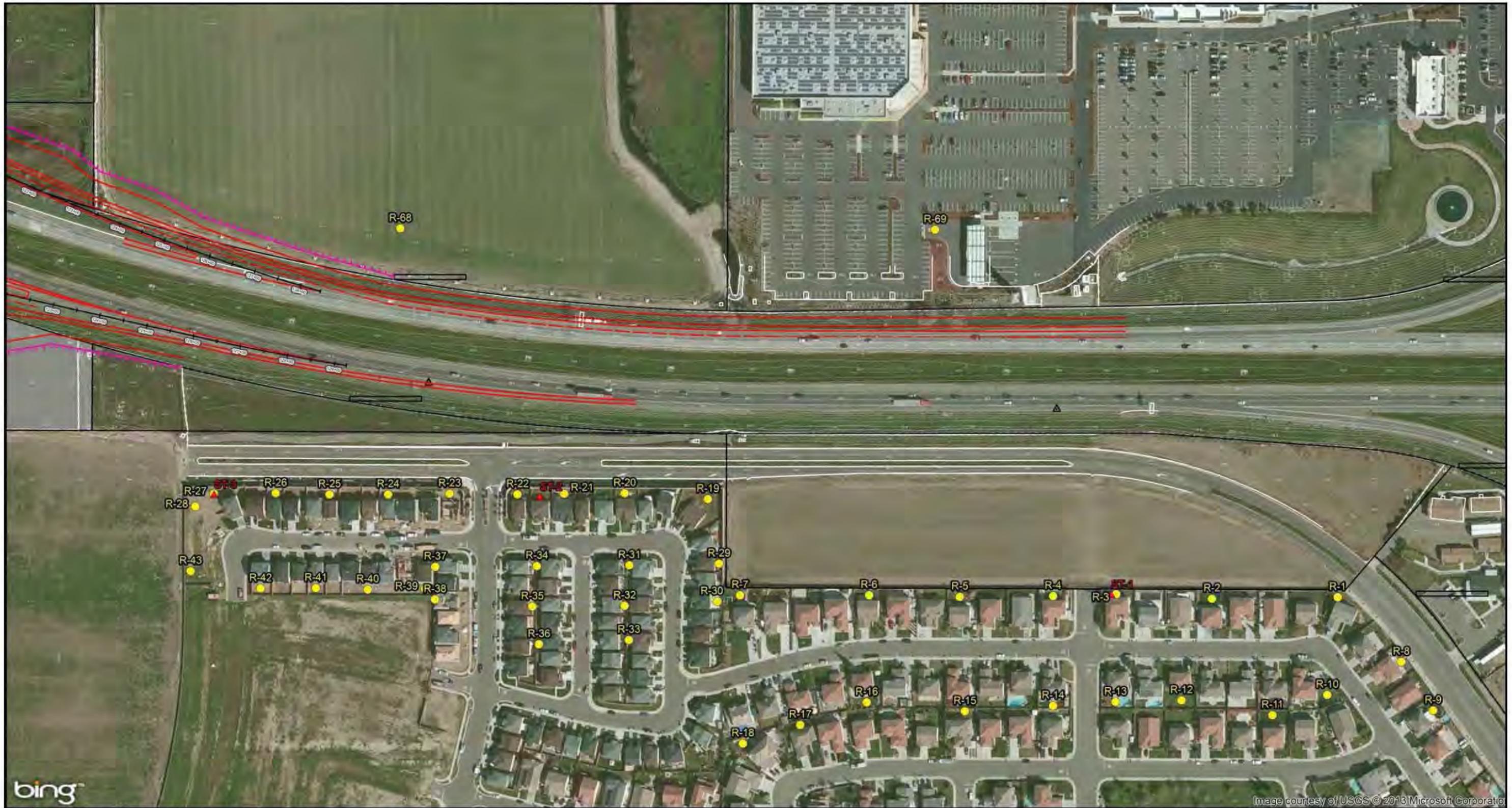
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SOURCE: Noise Study Report State Route 120/McKinley Avenue Interchange Project (May 2013)

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Figure 2.13: Noise Monitoring and Modeled Receptor Locations

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LEGEND

- Alternative 1 Alignment
- Proposed State Right-of-Way
- City Right-of-way
- Modeled Receptors
- ▲ Short-Term Monitoring Locations
- Long-Term Monitoring Location
- Full Property Acquisition

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Image courtesy of USGS © 2013 Microsoft Corporation

State Route 120/McKinley Avenue Interchange
Manteca, San Joaquin County, California
10-SJ-120-PM 1.9-3.0
EA 10-OH8900

Figure 2.14: Noise Monitoring and Modeled Receptor Locations

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**Table 2.21 Long-Term Noise
Monitoring Results**

Hours	Start Time	Noise Level (dB(A) L_{eq})
1	12:00 a.m.	57.0
2	1:00 a.m.	57.0
3	2:00 a.m.	55.0
4	3:00 a.m.	56.0
5	4:00 a.m.	58.0
6	5:00 a.m.	58.0
7	6:00 a.m.	61.0
8	7:00 a.m.	62.0
9	8:00 a.m.	63.0
10	9:00 a.m.	61.0
11	10:00 a.m.	61.0
12	11:00 a.m.	61.0
13	12:00 p.m.	61.0
14	1:00 p.m.	61.0
15	2:00 p.m.	60.0
16	3:00 p.m.	61.0
17	4:00 p.m.	60.0
18	5:00 p.m.	61.0
19	6:00 p.m.	61.0
20	7:00 p.m.	60.0
21	8:00 p.m.	59.0
22	9:00 p.m.	58.0
23	10:00 p.m.	56.0
24	11:00 p.m.	56.0

Source: State Route 120/McKinley Avenue Interchange Noise Study Report, Table B-1: Predicted Future Noise and Noise Barrier Analysis for Alternative 1, June 2014.
dB(A) L_{eq} = equivalent continuous sound level measured in A-weighted decibels.
This table represents a 24-hour period during the 72 hours of long-term noise monitoring that occurred. This table represents the L_{eq} hourly noise level on November 7, 2012.

As shown above in Table 2.21, the long-term noise levels ranged from a low of 55.0 dB(A) to a high of 63.0 dB(A).

Existing Noise Levels at Modeled Receptor Locations

As described above, the project site is in an area with residential units, agricultural uses and vacant land. The existing noise levels were determined at 73 modeled receptor locations around the project site. The existing noise level for each of these receptor locations was modeled using the traffic volumes for State Route 120, McKinley Avenue, and other roadways within the project vicinity. Existing noise

levels range from a low of 54.0 dB(A) $L_{eq}(h)$ (at Receptors 11, 17, 18, 33, 36 and 40) to a high of 74.0 dB(A) $L_{eq}(h)$ (at Receptor 68).

The short- and long-term monitoring locations as well as the locations of the modeled receptor locations are presented in Figures 2.11 through 2.14.

2.2.6.3 Environmental Consequences

Construction Noise Analysis

Two types of short-term noise impacts would occur during project construction. The first type would be from construction crew commutes and the transport of construction equipment and materials to the project site. This noise would incrementally increase noise levels on access roads leading to the site. The pieces of heavy equipment for grading and construction activities would be moved onsite, remain for the duration of each construction phase, and not add to the daily traffic volumes in the project vicinity. A high single event noise exposure potential at a maximum level of 87.0 dB(A) L_{max} from trucks passing at 50 feet from sensitive receptors could occur during construction activities.

However, the projected construction traffic would be minimal when compared to existing traffic volumes on State Route 120, McKinley Avenue and surrounding roadways, and would not contribute to an increase in noise levels over existing conditions. Therefore, short-term construction-related worker commutes and equipment transport would not have an adverse effect on nearby sensitive receptors.

The second type of short-term noise impact is related to noise generated during each phase of construction. Development of the project would include four distinct phases where different types of construction equipment would be used and the location of such equipment would change daily at the project site.

Table 2.22 shows the different types of construction equipment used and their estimated noise levels as measured from 50 feet away.

Table 2.22 Typical Construction Equipment Noise Levels

Equipment Type	Estimated Maximum Noise Levels (dB(A) L_{max} at 50 feet)
Pile Drivers	93.0
Rock Drills	96.0
Jackhammers	82.0
Pneumatic Tools	85.0
Pumps	80.0
Scrapers	87.0
Haul Trucks	88.0
Cranes	82.0
Portable Generators	80.0
Rollers	80.0
Dozers	85.0
Tractors	80.0
Front-End Loaders	86.0
Hydraulic Backhoe	86.0
Hydraulic Excavators	86.0
Graders	86.0
Air Compressors	86.0
Trucks	86.0

Source: Noise Control for Buildings and Manufacturing Plants (Bolt, Beranek & Newman 1987)

Notes: dB(A) = A-weighted decibels

L_{max} = maximum instantaneous sound level

Typical noise levels at 50 feet from an active construction area could be expected to reach up to 91.0 dB(A) L_{max} during the most active construction phases.

The site preparation phase, which includes grading and paving, tends to generate the highest noise levels because earthmoving equipment is used (earthmoving equipment typically generates the highest noise levels). Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, and front-end loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 or 4 minutes at lower power settings. Typical noise levels at 50 feet from an active construction area could be expected to reach up to 91.0 dB(A) L_{max} during the most active construction phases.

Construction of the project is expected to require the use of earthmovers, bulldozers, water trucks, and pickup trucks. Noise associated with the use of this type of construction equipment is estimated to range between 79.0 and 89.0 dB(A) L_{max} at a

distance of 50 feet from the active construction area during the grading phase. As shown in Table 2.22, the maximum noise level generated by each earthmover is estimated to be about 86.0 dB(A) L_{max} as measured from 50 feet. Each bulldozer would generate an estimated maximum noise level of 85.0 dB(A) L_{max} as measured from 50 feet. The maximum noise level generated by water trucks and pickup trucks is about 86.0 dB(A) L_{max} as measured from 50 feet. If all of these pieces of construction equipment are running simultaneously during the grading phase, they would generate a maximum noise level of 91.0 dB(A) as measured 50 feet away from an active construction area. Minimization measures are provided below to ensure that residential units next to the project would not be adversely affected by construction noise.

Operational

The Noise Study Report was prepared for the project to determine the future traffic noise impacts predicted at the 73 modeled receptor locations with implementation of the project. Future traffic noise levels for the project at all 73 receptor locations were determined with existing walls using the worst-case traffic operations (prior to speed degradation) or the future (2040) peak-hour traffic volumes. Table 2.23 shows the existing, future no-build, and project traffic noise level results.

Table 2.23 Operational Noise Levels at Modeled Receptor Locations

Receptor	Location	Land Use	Existing Noise Level dB(A) $L_{eq}(h)$	2040 Noise Level without Project	2040 Noise Level with Project	2040 Noise Level with Project Minus No Project Conditions	2040 Noise Level with Project Minus Existing Conditions
R-1	Toscano Drive	Residential	59	60	59	-1	0
R-2	Donatello Street	Residential	60	59	59	0	-1
R-3	Donatello Street	Residential	58	58	58	0	0
R-4	Donatello Street	Residential	60	59	59	0	-1
R-5	Donatello Street	Residential	60	60	60	0	0
R-6	Donatello Street	Residential	58	58	58	0	0
R-7	Donatello Street	Residential	58	57	57	0	-1
R-8	Toscano Drive	Residential	58	59	58	-1	0
R-9	Toscano Drive	Residential	57	59	58	-1	1
R-10	Donatello Street	Residential	59	58	58	0	-1

Table 2.23 Operational Noise Levels at Modeled Receptor Locations

Receptor	Location	Land Use	Existing Noise Level dB(A) L _{eq} (h)	2040 Noise Level without Project	2040 Noise Level with Project	2040 Noise Level with Project Minus No Project Conditions	2040 Noise Level with Project Minus Existing Conditions
R-11	Donatello Street	Residential	54	54	54	0	0
R-12	Donatello Street	Residential	55	54	54	0	-1
R-13	Donatello Street	Residential	58	57	57	0	-1
R-14	Donatello Street	Residential	56	55	55	0	-1
R-15	Donatello Street	Residential	55	54	54	0	-1
R-16	Donatello Street	Residential	55	54	54	0	-1
R-17	Donatello Street	Residential	54	53	53	0	-1
R-18	Donatello Street	Residential	54	53	54	1	0
R-19	Summerwind Lane	Residential	60	60	59	-1	-1
R-20	Summerwind Lane	Residential	58	58	57	-1	-1
R-21	Summerwind Lane	Residential	58	58	58	0	0
R-22	Summerwind Lane	Residential	58	58	58	0	0
R-23	Silhouettes Street	Residential	57	57	57	0	0
R-24	Silhouettes Street	Residential	58	58	58	0	0
R-25	Silhouettes Street	Residential	57	58	57	-1	0
R-26	Silhouettes Street	Residential	57	57	57	0	0
R-27	Silhouettes Street	Residential	57	57	57	0	0
R-28	Silhouettes Street	Residential	60	59	60	1	0
R-29	Summerwind Lane	Residential	58	58	58	0	0
R-30	Summerwind Lane	Residential	59	58	58	0	-1
R-31	Summerwind Lane	Residential	57	56	56	0	-1
R-32	Intrigue Lane	Residential	55	54	54	0	-1
R-33	Summerwind Lane	Residential	54	53	54	1	0
R-34	Intrigue Lane	Residential	64	64	64	0	0

Table 2.23 Operational Noise Levels at Modeled Receptor Locations

Receptor	Location	Land Use	Existing Noise Level dB(A) L _{eq} (h)	2040 Noise Level without Project	2040 Noise Level with Project	2040 Noise Level with Project Minus No Project Conditions	2040 Noise Level with Project Minus Existing Conditions
R-35	Hearthsong Drive	Residential	55	54	55	1	0
R-36	Intrigue Lane	Residential	54	53	54	1	0
R-37	Hearthsong Drive	Residential	57	57	57	0	0
R-38	Hearthsong Drive	Residential	55	55	55	0	0
R-39	Silhouettes Street	Residential	55	54	55	1	0
R-40	Silhouettes Street	Residential	54	54	54	0	0
R-41	Silhouettes Street	Residential	54	53	54	1	0
R-42	Silhouettes Street	Residential	56	55	56	1	0
R-43	Silhouettes Street	Residential	59	59	59	0	0
R-44	McKinley Avenue	Residential	63	64	-	-	-
R-45	Bronzan Road	Residential	62	62	-	-	-
R-46	Bronzan Road	Residential	62	62	-	-	-
R-47	Bronzan Road	Residential	61	61	-	-	-
R-48	Bronzan Road	Residential	61	60	-	-	-
R-49	Bronzan Road	Residential	60	59	62	3	2
R-50	Bronzan Road	Residential	60	59	61	2	1
R-51	Bronzan Road	Residential	58	57	59	2	1
R-52	Bronzan Road	Residential	59	58	59	1	0
R-53	Bronzan Road	Residential	56	55	56	1	0
R-54	Bronzan Road	Residential	58	57	58	1	0
R-55	Bronzan Road	Residential	58	57	57	0	-1
R-56	Bronzan Road	Residential	57	56	57	1	0
R-57	Bronzan Road	Residential	57	56	56	0	-1
R-58	Bronzan Road	Residential	57	56	57	1	0
R-59	McKinley Avenue	Residential	58	60	65	5	7
R-60	McKinley Avenue	Residential	61	62	-	-	-
R-61	McKinley Avenue	Residential	57	58	-	-	-
R-62	McKinley Avenue	Residential	58	59	-	-	-
R-63	McKinley Avenue	Residential	58	58	-	-	-
R-64	McKinley Avenue	Residential	58	63	-	-	-

Table 2.23 Operational Noise Levels at Modeled Receptor Locations

Receptor	Location	Land Use	Existing Noise Level dB(A) L _{eq} (h)	2040 Noise Level without Project	2040 Noise Level with Project	2040 Noise Level with Project Minus No Project Conditions	2040 Noise Level with Project Minus Existing Conditions
R-65	McKinley Avenue	Agriculture	58	66	71	5	13
R-66	McKinley Avenue	Agriculture	61	61	65	4	4
R-67	McKinley Avenue	Vacant	65	64	64	0	-1
R-68	McKinley Avenue	Agriculture	74	74	73	-1	-1
R-69	Daniels Street	Retail	70	69	69	0	-1
R-70	McKinley Avenue	Residential	58	58	59	1	1
R-71	McKinley Avenue	Agriculture	60	66	72	6	12
R-72	McKinley Avenue	Residential	56	61	65	4	9
R-73	McKinley Avenue	Vacant	70	70	69	-1	-1

Source: State Route 120/McKinley Avenue Interchange Noise Study Report, Table B-1: Predicted Future Noise and Noise Barrier Analysis for Alternative 1, June 2014.

Notes: Shaded area represents properties that would be fully acquired by the project.

dB(A) L_{eq}(h) = equivalent continuous sound level per hour measured in A-weighted decibels.

The modeled future noise levels with the project were compared to the modeled existing noise levels to determine whether a substantial noise increase would occur (a noise increase above 12 dBA is considered substantial). The modeled future noise levels for the project were also compared to the Noise Abatement Criteria for Activity Category B (Residential not to exceed an exterior noise level of 67 L_{eq}(h)); Activity Category E (retail not to exceed an exterior noise level of 72 L_{eq}(h)); and, Activity Categories F and G (Agricultural and Vacant where there is No Noise Abatement Criteria-Reporting Only).

As shown in Table 2.23, the modeled receptor locations representing residential land uses would be exposed to noise levels ranging from 54 to 65 L_{eq}(h) and would not exceed the Noise Abatement Criteria Activity Category B noise level of 67 L_{eq}(h) under 2040 Noise Level with project conditions. The modeled receptor locations representing the retail land use would be exposed to a noise level of 69 L_{eq}(h) under 2040 Noise Level with project conditions, which is below the Noise Abatement Criteria Activity Category noise level standard of 72 L_{eq}(h). The modeled receptor

locations representing agricultural and vacant land uses are under Noise Abatement Criteria Activity Category F and G, which do not provide a Noise Abatement Criteria standard.

Also, the modeling results show no substantial noise increase above 12 dB or more would occur compared to existing conditions with project implementation for any of the modeled noise sensitive locations. It should be noted that R-65 would be exposed to a noise increase of 13 dB; however, this modeled receptor location represents agricultural land that is not recognized as a noise sensitive location per Caltrans Noise Abatement Criteria Activity Category. No noise abatement measures in the form of barriers would be required as operation of the project would not result in an adverse effect to sensitive receptors in regard to increased noise levels or exceedance of the applicable Noise Abatement Criteria.

2.2.6.4 Avoidance, Minimization, and/or Abatement Measures

Sensitive receptors surrounding the project site could be exposed to noise levels that exceed exterior Noise Abatement Criteria threshold standards for residential uses during site construction activities. These noise increases would be short-term and temporary in nature. To reduce the increase in noise levels at the sensitive receptors, the following minimization measures would be implemented during construction activities:

- NOI-1:** If nighttime construction activities occur at the project site, the construction contractor shall ensure that noise levels do not exceed 86.0 dB(A) as measured at 50 feet from active construction equipment between the hours of 9:00 p.m. to 6:00 a.m.
- NOI-2:** The construction contractor shall ensure that all construction equipment used on the project site during construction activities is equipped with adequate manufacturer-specified mufflers. Additionally, the construction contractor shall ensure that all construction equipment used onsite is well maintained and in good working order.
- NOI-3:** The construction contractor shall ensure that all noise generated during construction activities are within the limits of the City of Manteca construction noise thresholds. Furthermore, the construction contractor shall ensure that construction noise complies with threshold limits as provided in the Caltrans Standard Specification Section 14-8 and Caltrans Standard Provisions Section 14-8.02.

Implementation of these minimization measures would ensure that construction noise would not adversely affect the sensitive receptors around the project site. Avoidance, minimization, and/or abatement measures would not be required during operation of the project.

2.2.6.5 California Environmental Quality Act Noise Analysis

When determining whether a noise impact is significant under the California Environmental Quality Act, existing ambient noise levels are compared to the estimated noise levels during the construction and operational phases of the project. California Environmental Quality Act noise analysis is completely independent of the National Environmental Policy Act 23 Code of Federal Regulations 772 analysis discussed above, which is centered largely on noise abatement criteria. Under the California Environmental Quality Act, the assessment entails looking at the setting of the noise impact and then determining how large or perceptible any noise increase would be in the given area compared to conditions existing without the project. Key considerations include the uniqueness of the setting, sensitive nature of the noise receivers, magnitude of noise increases, and absolute noise level.

Project implementation would result in potential short-term noise impacts during construction of the project. Construction of the project would comply with City of Manteca noise restrictions, as well as the Caltrans Standard Specification Section 14-8 and Caltrans Standard Provisions Section 14-8.02, as outlined above in Avoidance and Minimization measure NOI-3. In addition, Avoidance and Minimization measures NOI-1 and NOI-2 would further minimize potential construction noise impacts. Therefore, potential short-term construction noise impacts would be less than significant, and no mitigation measures would be required.

A permanent increase in ambient noise level would occur as a result of the long-term use of the project. A traffic noise impact would occur under California Environmental Quality Act when the future noise levels with project implementation results in a substantial noise increase in noise level over that of noise levels existing without the project. Per this analysis, using City of Manteca standards, the threshold for significant impacts to sensitive receptors would occur if operation of the project would generate a noise level increase of greater than 5.0 dB(A) at the modeled receptor locations.

Table 2.23 shows noise level increases under 2040 Noise Level with Project Minus No Project Conditions measured in Leq(h), which is equivalent continuous sound

level per hour measured in A-weighted decibels. Therefore, the noise level increases represent a conservative noise level increase estimate, which would be much lower if measured by the Community Noise Equivalent Level standards used by the City of Manteca to determine noise impacts to sensitive receptors.

As shown in Table 2.23, 72 of the 73 sensitive receptors would not be exposed to noise level increases that exceed 5.0 dB(A) Leq(h). Sensitive receptor R-71 would be exposed to a noise level increase of 6.0 dB(A) Leq(h); however, this modeled receptor location represents an agricultural land use, which is not considered a sensitive receptor. Therefore, implementation of the project would not result in a substantial increase at any modeled receptor location representing noise sensitive land uses. Operation of the project would not expose sensitive receptors to noise levels exceeding California Environmental Quality Act and City of Manteca standards; project noise impacts would be less than significant, and no mitigation would be required.

2.3 Biological Environment

The project has obtained coverage under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The plan, in accordance with the Federal Endangered Species Act Section 10(a)(1)(B) and the California Endangered Species Act Section 2081(b) Incidental Take Permits, provides compensation for the conversion of open space to non-open space uses that affect the plant, fish, and wildlife species covered by the plan.

The plan compensates for conversions of open space for the following activities: urban development, mining, expansion of existing urban boundaries, non-agricultural activities occurring outside of urban boundaries, levee maintenance undertaken by the San Joaquin Area Flood Control Agency, transportation projects, school expansions, non-federal flood control projects, new parks and trails, maintenance of existing facilities for non-federal irrigation district projects, utility installation, maintenance activities, managing preserves, and similar public agency projects. Such activities will be undertaken by both public and private individuals and agencies throughout San Joaquin County and within the County's incorporated cities of Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton, and Tracy. Public agencies including the Caltrans (for transportation projects) and the San Joaquin Council of Governments (for transportation projects) will also undertake activities, which would be covered by the plan.

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan is implemented by the San Joaquin Council of Governments in coordination with the plan participants. One of the main goals of the plan is to obtain permits from state and federal agencies that would cover projects over the next 50 years. To this end, the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife have issued incidental take permits in conformance with the Federal Endangered Species Act and California Endangered Species Act. Activities affecting anadromous fish and waters of the United States are subject to National Marine Fisheries Service and Army Corps of Engineers regulations, respectively, and are not covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. These activities must be permitted directly through the National Marine Fisheries Service and Army Corps of Engineers.

Generally, the direct take of species is not covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan; only take of suitable habitat is allowed based on appropriate compensation and implementation of

avoidance and minimization measures. Also, some special-status species are not covered under the plan, and impacts to these species require direct permitting through the appropriate agency.

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan includes species-specific measures to minimize impacts to covered species. These Incidental Take Minimization Measures must be included as conditions of project approval.

Compensation for impacts to habitat for special-status plant and animal species covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan may be provided by one or more of the following options:

- Payment of the appropriate mitigation fee
- Dedication of mitigation lands
- Purchase of approved mitigation bank credits
- Propose an alternative mitigation plan

2.3.1 Natural Communities

This section discusses natural communities of concern. The focus here is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value. This section includes any regulations relevant to the natural communities discussed (i.e., oak woodland protection, California Fish and Game Code).

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed below in the Threatened and Endangered Species subsection. Wetlands and other waters are also discussed below.

2.3.1.1 Affected Environment

A Natural Environment Study (June 2014 - as listed in Appendix E) provides information in this section.

Per the Natural Environment Study, a field survey of the biological study area was done on July 24, 2012. The field study involved walking the entire biological study area and evaluating the potential for regionally occurring sensitive habitats (including

jurisdictional waters of the United States) and special-status species to occur within the biological study area. Additional field surveys done for the project included a general survey to map vegetation communities, a preliminary jurisdictional delineation, a site assessment for state and/or federally listed species, and focused surveys for special-status plants.

Habitat mapping and vegetation types were classified in accordance with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan – Biological Analyses (1996) to facilitate determination of impacts and compensation for San Joaquin County Multi-Species Habitat Conservation and Open Space Plan-covered activities. Vegetation communities and land uses occurring in the biological study area include two natural communities: valley grasslands and freshwater lake, pond, or vernal pool. Other habitat types in the biological study area that are not considered natural include canal, row and field crops (unditched), orchards and vineyards, barren, ruderal, and urban/industrial/built. Natural communities make up 9.94 acres of the biological study area. Natural communities and other habitat types in the biological study area as shown in Table 2.24, per the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan habitat classifications, are shown in Figure 2.15.

**Table 2.24 Natural Communities and Other Habitat Types
in the Biological Study Area (acres)¹**

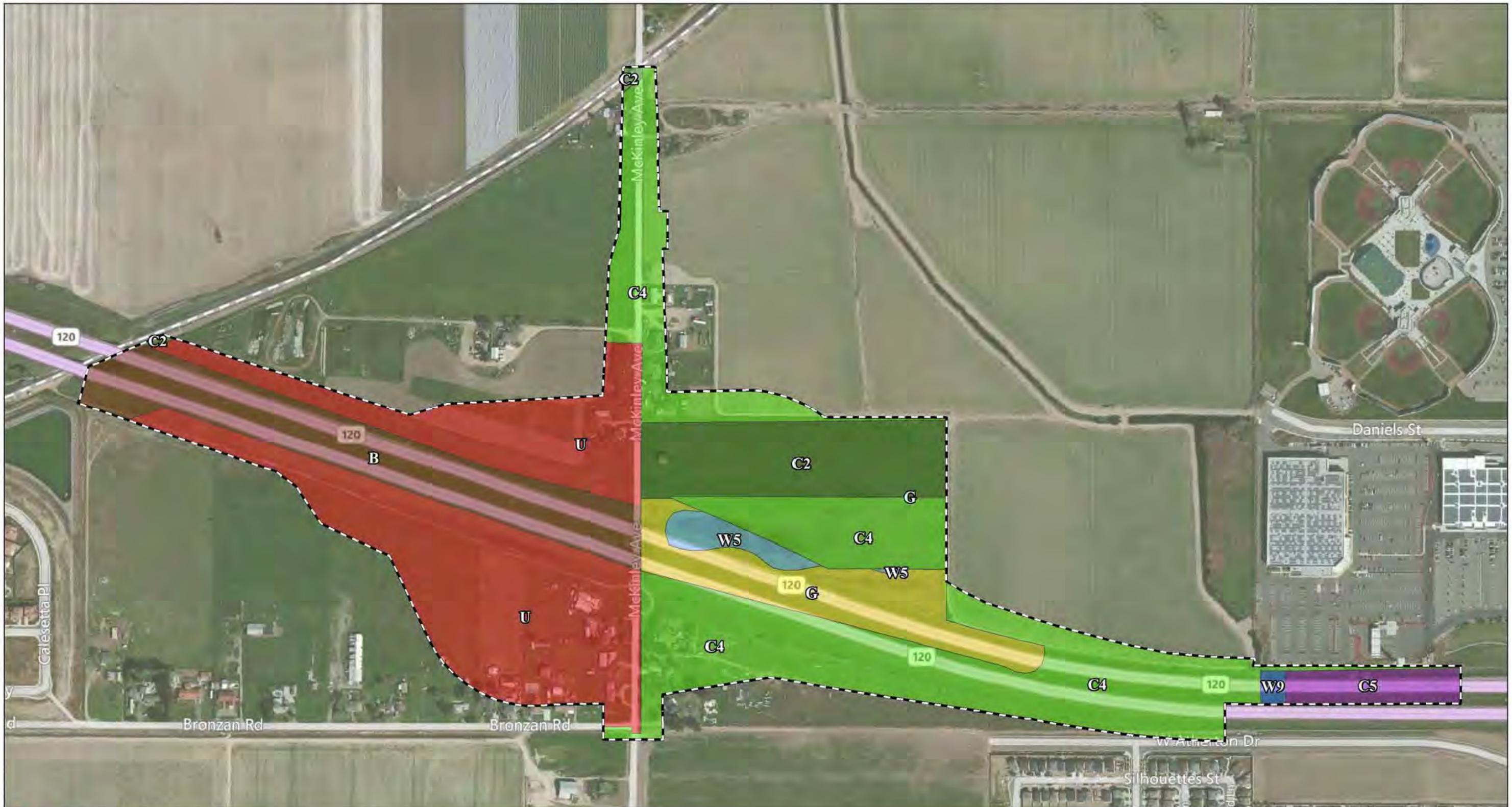
Natural Communities	Acres
Valley Grasslands (G)	8.29
Freshwater Lake, Pond or Vernal Pool (W5)	1.65
Subtotal	9.94
Other Habitat Types	
Canal (W9)	0.36
Row and Field Crops (unditched) (C4)	35.62
Orchards and Vineyards (C2)	9.91
Barren (B)	12.82
Ruderal (C5)	2.57
Urban/Industrial/Built (U)	31.03
Subtotal	92.31
Total²	102.25

Source: State Route 120/McKinley Avenue Interchange Project Natural Environment Study, Table 2: Natural Communities and Other Habitat Types in the BSA (acres), pg. 21, June 2014.

Notes:

- ¹ Note that the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan habitat mapping may not reflect actual vegetative conditions in the Biological Study Area due to the relatively coarse level of detail required to map the entire County. However, for coverage under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, the Project is required to use the habitat classification mapping developed by the San Joaquin County Council of Governments.
- ² The project site totals 109 acres; however, the biological assessment in this document pertains to a smaller area of the project site because some areas are not subject to potential adverse effects on biota.

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Caltrans

LEGEND

Biological Study Area

SJMSCP Vegetation Types

G - Valley Grasslands - (8.29 ac)

W5 - Freshwater Lake, Pond or Vernal Pool - (1.65 ac)

W9 - Canal - (0.36 ac)

C4 - Row and Field Crops (unditched) - (35.62 ac)

C2 - Orchards and Vineyards - (9.91 ac)

B - Barren - (12.82 ac)

C5 - Ruderal - (2.57 ac)

U - Urban/Industrial/Built - (31.03 ac)

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Figure 2.15: San Joaquin County Multi-Species Habitat Conservation and Open Space Plan Vegetation Types

SOURCE: Natural Environment Study State Route 120/McKinley Avenue Interchange Project (October 2013)
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Valley Grasslands (G)

Valley grasslands may have consisted of perennial grasses at one time, but are now dominated by introduced annual species. Composition varies among stands and is influenced by many factors, such as fall temperature, precipitation, and microtopography. Based on the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan habitat mapping, valley grasslands, totaling about 8.29 acres within the biological study area, are found directly west of McKinley Avenue along the westbound State Route 120 lanes and shoulders, and extend into a fallow field to the north. However, this habitat is no longer present in the biological study area.

Freshwater Lake, Pond or Vernal Pool (W5)

Freshwater lake, pond, or vernal pool includes large bodies of water that are large enough to develop waves. Much of the surface area of these impoundments consists of open water with emergent vegetation around the edges.

Based on the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan habitat mapping, this habitat classification, totaling 1.65 acres within the biological study area, is found in a fallow field northeast of the McKinley Avenue overpass. Current conditions, however, are more characteristic of vernal marsh (W8).

Canal (W9)

Canals move freshwater to crops and are greater than 100 feet wide. Based on the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan habitat mapping, a canal, totaling about 0.36 acre, crosses below State Route 120 at the east end of the biological study area. The canal is still present, but the entire length of the canal within the biological study area is underground.

Row and Field Crops (unditched) (C4)

Row and field crops (unditched) include diverse field crop types in addition to recently tilled fields where no crop growth is evident. Also included in this community are fallow fields, provided they are obviously part of an ongoing agricultural operation, and fields that have been recently tilled or disked but where little (stubble) or no crop growth is evident. Based on the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan habitat mapping, row and field crops, totaling about 35.62 acres within the biological study area, are generally found in the fields east of McKinley Avenue and at the north and south ends of the

biological study area just west of McKinley Avenue. However, within this habitat type, current site conditions include large areas that have been developed.

Orchards and Vineyards (C2)

This habitat type consists of maintained orchards and vineyards with heavily cultivated and irrigated soils. Based on the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan habitat mapping, this habitat type, totaling about 9.91 acres within the biological study area, is found in a field north of State Route 120 and east of McKinley Avenue. However, while the field to the north is still present, it is currently used as row and field crops.

Barren (B)

Barren areas are where activities such as mining, landfill, feed lots/nurseries, and dredge tailings have changed the habitat so greatly that vegetation cannot establish. Based on the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan habitat mapping, barren habitat, totaling about 12.82 acres within the biological study area, is found within the State Route 120 raised highway to the toe of slope west of the McKinley Avenue overcrossing. However, current site conditions are more characteristic of Urban/Industrial/Built (U) within the paved roadway and Ruderal (C5) within the median and portions of the embankments.

Ruderal (C5)

Ruderal areas are defined as disturbed fields near urban and residential areas and on levees whose native plant species have been replaced by weedy introduced species. Based on the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan habitat mapping, ruderal habitat, totaling about 2.57 acres within the biological study area, is found at the east end of the biological study area along the westbound State Route 120 alignment. Current conditions, however, show portions of this habitat consist of the State Route 120 paved roadway, which is more characteristic of Urban/Industrial/Built (U).

Urban/Industrial/Built (U)

Urban/Industrial/Built areas consist of buildings, roadways, and other structures, including agricultural outbuildings such as barns and silos. Based on the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan habitat mapping, this habitat type, totaling about 31.41 acres within the biological study area, is found west of McKinley Avenue both north and south of State Route 120. However, current

conditions in the biological study area show that some of this area is actively farmed or used as pastureland.

2.3.1.2 Environmental Consequences

Impacts to the habitats addressed above were calculated based on the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan Compensation Strategy Coverage Areas. Each habitat classification was sorted into its respective coverage area based on the project footprint with an additional 10-foot work area buffer. The total acreage of coverage (impact area) for this project is shown in Table 2.25.

Table 2.25 San Joaquin County Multi-Species Habitat Conservation and Open Space Plan Coverage Area (Acres)

Habitat Classification	Coverage Area Type	Acres
Valley Grassland (G)	Natural	5.72
Freshwater Lake, Pond or Vernal Pool (W5)		
Canal (W9)	Agriculture	17.73
Row and Field Crops (unditched) (C4)		
Orchards and Vineyards (C2)	Multi-Purpose Open Space	6.28
Ruderal (C5)		
Barren (B)	Urban or Barren	29.81
Urban/Industrial/Built (U)		

Source: State Route 120/McKinley Avenue Interchange Project Natural Environment Study, June 2014.

2.3.1.3 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures are consistent with the Incidental Take Minimization Measures, per the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, and would minimize potential impacts to natural habitats - wetland habitats in the biological study area:

BIO-1: Staging areas, access routes, and construction areas shall be located outside of wetland areas to the maximum extent practicable.

BIO-2: Measures consistent with the current Caltrans' Construction Site Best Management Practices Manual (including the Stormwater Pollution Prevention Plan and Water Pollution Control Program Manuals [http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf]) shall be implemented to minimize affects to wetland habitat (e.g., erosion, siltation, etc.) during construction.

- BIO-3:** A Water Pollution Control Program shall be prepared by the contractor in accordance with typical provisions associated with a Regional General Permit for Construction Activities (on file with the Regional Water Quality Control Board). The Water Pollution Control Program shall contain a Spill Response Plan with instructions and procedures for reporting spills, the use and location of spill containment equipment, and the use and location of spill collection materials.
- BIO-4:** Wetland vegetation shall be retained as practical within the constraints of the proposed project as determined by the Joint Powers Authority with the concurrence of the Permitting Agencies' representatives on the Technical Advisory Committee. Where vegetation removal is necessary, rapidly sprouting plants, such as willows, shall be cut off at the ground line and the root systems left intact.
- BIO-5:** Prior to issuance of a grading permit or other authorization to proceed with project construction, the City shall obtain any regulatory permits that are required from the Army Corps of Engineers, Regional Water Quality Control Board, and /or California Department of Fish and Wildlife.
- BIO-6:** Prior to issuance of a grading permit, the City of Manteca shall implement the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan conservation strategy which includes one or a combination of two or more of the following options, to provide compensation pursuant to the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan:
1. Pay the appropriate fee as indicated in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan; or
 2. Dedicate, as conservation easements or fee title, or in-lieu dedications; or
 3. Purchase approved mitigation bank credits; or
 4. Propose an alternative mitigation plan, consistent with the goals of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan and equivalent in biological value to options 1, 2, and 3 above, pending approval from the Joint Powers Authority.

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan compensation areas and 2013 costs are shown in Figure 2.16.

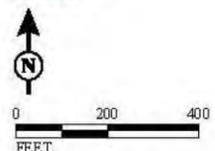
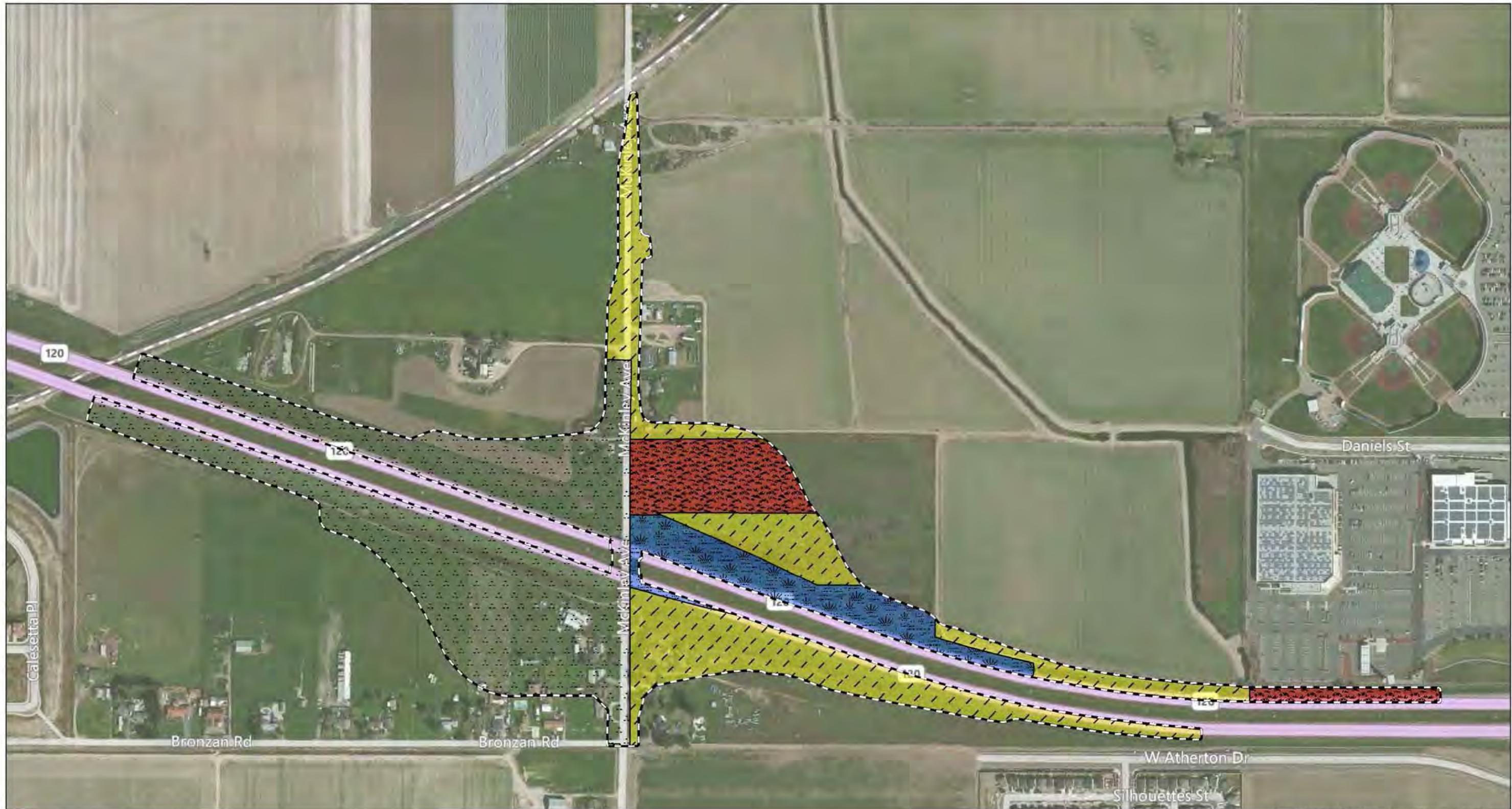
2.3.2 Wetlands and Other Waters

2.3.2.1 Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (33 U.S. Code [USC] 1344), is the main law regulating wetlands and surface waters. One purpose of the Clean Water Act is to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce.

To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of: hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act. Section 404 of the Clean Water Act establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers with oversight by the U.S. Environmental Protection Agency.

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LEGEND

- Project Footprint - (59.55 ac)
- SJMSCP Coverage Area
- Agriculture - (17.73 ac)
- Natural - (5.72 ac)
- Multi-Purpose Open Space - (6.28 ac)
- Urban or Barren - (29.81 ac)

- SJMSCP Compensation Areas***
- Agriculture - (17.73 ac @ \$12,711 = \$225,366)
 - Natural - (5.72 ac @ \$12,711 = \$72,707)
 - Multi-Purpose Open Space - (6.28 ac @ \$6,364 = \$39,966)

* Costs per 2013 SJMSCP Fee Schedule

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Figure 2.16: San Joaquin County Multi-Species Habitat Conservation and Open Space Plan Compensation Areas and Costs

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The U.S. Army Corps of Engineers issues two types of 404 permits: General and Standard permits. There are two types of General permits: Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of U.S. Army Corps of Engineers Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the U.S. Army Corps of Engineers decision to approve is based on compliance with the U.S. Environmental Protection Agency's Section 404(b)(1) Guidelines (U.S. Environmental Protection Agency 40 Code of Federal Regulations [CFR] Part 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines were developed by the U.S. Environmental Protection Agency in conjunction with the U.S. Army Corps of Engineers and allow the discharge of dredged or fill material into the aquatic system (waters of the United States) only if there is no practicable alternative that would have less adverse effects. The guidelines state that the U.S. Army Corps of Engineers may not issue a permit if there is a least environmentally damaging practicable alternative to the proposed discharge that would have lesser effects on waters of the United States and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (Executive Order 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this order states that a federal agency, such as the Federal Highway Administration and/or Caltrans, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated mainly by the State Water Resources Control Board, the Regional Water Quality Control Boards and the California Department of Fish and Wildlife. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify California Department of Fish and Wildlife before beginning construction. If California Department of Fish and Wildlife determines that

the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required.

California Department of Fish and Wildlife jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the U.S. Army Corps of Engineers may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the California Department of Fish and Wildlife.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements and may be required even when the discharge is already permitted or exempt under the Clean Water Act. In compliance with Section 401 of the Clean Water Act, the Regional Water Quality Control Boards also issue water quality certifications for activities, which may result in a discharge to waters of the United States. This is most frequently required in tandem with a Section 404 permit request. See the Subsection 2.2.1 for additional details.

2.3.2.2 Affected Environment

Aquatic resources within the biological study area consist of four distinct depressions supporting potential wetlands, totaling 5.90 acres as shown in Figure 2.17. Two depressions are southwest of the McKinley Avenue overpass, and two depressions are northeast of the McKinley Avenue overpass. Based on the topography of the area, all four depressions are isolated and have no connectivity to navigable waters of the United States.

The largest feature, a 5.45-acre depression northeast of the McKinley Avenue overpass, is about 5 feet lower in elevation than the surrounding topography. This depression collects surface runoff from the surrounding lands; a ditch along the north side of State Route 120



LEGEND

- Biological Study Area
- Data Points
- Isolated Wetland Waters (5.90 ac)

Caltrans

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0 100 200
FEET

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EA 10-0H8900*

Figure 2.17: Aquatic Features

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that collects roadway and other surface runoff also flows into the depression. There are no outlets for this feature.

A smaller depression (0.10 acre) is east of and next to the large depression; the two depressions are separated by only a small berm. The smaller depression has the same hydrological characteristics as the large feature. The remaining two depressions southwest of the McKinley Avenue overpass, 0.30 acre and 0.05 acre respectively, are shallow depressions at the toe of the State Route 120 embankment. These depressions also collect only local surface runoff.

As described above, all four depressions support potential seasonal wetlands. Vegetation was dominated by hydrophytes including common tule (*Scheonoplectus acutus* var. *occidentalis*), broad-leaved cattail (*Typha latifolia*), willows (*Salix* sp.), stinging nettle (*Urtica dioica*), rye grass (*Festuca perennis*), rabbitfoot grass (*Polypogon monspeliensis*), Palmer's amaranth (*Amaranthus palmeri*), and rush (*Juncus* sp.). Because the dominant plant species are all hydrophytes, the Army Corps of Engineers vegetation criterion for wetlands was met.

Soils were generally characteristic of dark grassland soils and consisted of sandy loam; color was consistent throughout, ranging from Munsell Moist 10 Yellow-Red (YR) 2/1 in the deeper areas and 10YR 2/2 along the wetland fringes. Because soil colors were so dark, oxidation-reduction features were either hard to identify, or generally absent from the soil. However, the adjacent upland soils were much lighter in color with less soil color reduction (10YR 3/3), providing a clear contrast to the wetland soils. Also, the Soil Survey for San Joaquin County identifies the large wetland depression as "water" and does not provide a soil type. Consequently, it is reasonable to presume the soils at these locations are typically ponded or flooded for at least 14 days during the growing season, meeting the Army Corps of Engineers hydric soils criterion for wetlands.

Due to the timing of the surveys well into the dry season, all four wetland features were dry. However, surface soil cracks and matted biotic crust material, both primary hydrology indicators, were observed at almost all wetland data point locations. Based on the presence of these indicators, it is reasonable to presume that these areas are typically inundated and/or saturated to the surface for at least 14 days during the growing season, meeting the minimum Army Corps of Engineers hydrology criterion for wetlands.

2.3.2.3 Environmental Consequences

The Army Corps of Engineers issued a Jurisdictional Determination, dated January 17, 2013, verifying that aquatic features in the biological study area are intra-state isolated waters with no apparent interstate or foreign commerce connection and, as such, are not currently regulated by the Army Corps of Engineers under Section 404 of the Clean Water Act. Therefore, no jurisdictional waters of the United States are present in the biological study area.

The isolated seasonal wetland features within the biological study area do not fall under the definition of California Department of Fish and Wildlife waters (California Department of Fish and Wildlife regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by California Department of Fish and Wildlife). Therefore, a Lake and Streambed Alteration Agreement, pursuant to Sections 1600-1616 of the California Fish and Game Code, is not required.

Waters of the State within the biological study area are limited to four distinct depressions supporting potential wetlands, totaling 5.90 acres.

The project would result in both permanent and temporary impacts to waters of the State. Permanent impacts to wetlands, totaling 3.58 acres, would occur as a result of the new interchange cut and fill footprint. Temporary impacts, totaling 0.14 acre, would occur during project construction access and staging activities.

Discharges into waters of the State pursuant to Section 401 of the Clean Water Act require a Water Quality Certification from the Regional Water Quality Control Board. The board may opt to waive the water quality certification and instead issue waste discharge requirements pursuant to its authority under the Porter Cologne Water Quality Control Act.

The project has been designed to avoid impacts to wetlands, where feasible. The Incidental Take Minimization Measures in the following section will also minimize impacts to wetlands during and after construction. Based on the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the project includes all practicable measures to minimize harm to wetlands that may result from such use.

2.3.2.4 Avoidance, Minimization, and/or Mitigation Measures

The project would be required to implement Incidental Take Minimization Measures BIO-1 through BIO-5 as provided above. These avoidance and minimization

measures are consistent with the Incidental Take Minimization Measures, per the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, and would minimize potential adverse effects to wetlands and other waters occurring in and surrounding the project site.

2.3.2.5 Wetlands Only Practicable Finding

The project has been designed to avoid adverse effects to wetlands and other waters, where feasible. The Incidental Take Minimization Measures, BIO-1 through BIO-5, listed above would also minimize adverse effects to wetlands and other waters during and after construction. Based on the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the project includes all practicable measures to minimize harm to wetlands that may result from such use and is in compliance with Executive Order 11990-Protection of Wetlands.

2.3.3 Plant Species

2.3.3.1 Regulatory Setting

The U.S. Fish and Wildlife Service and California Department of Fish and Wildlife have regulatory responsibility for the protection of special-status plant species. “Special-status” species are selected for protection because they are rare and/or subject to population and habitat declines. Special-status is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act and/or the California Endangered Species Act. See the Subsection 2.3.5 in this document for detailed information about these species.

This section of the document discusses all the other special-status plant species, including California Department of Fish and Wildlife species of special concern, U.S. Fish and Wildlife Service candidate species, and California Native Plant Society rare and endangered plants.

The regulatory requirements for California Department of Fish and Wildlife can be found at U.S. Code 16 (USC), Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. The regulatory requirements for California Endangered Species Act can be found at California Fish and Game Code, Section 2050, et seq. Caltrans projects are also subject to the Native Plant Protection Act, found at

California Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act, California Public Resources Code, Sections 2100-21177.

2.3.3.2 Affected Environment

The Natural Environment Study (June 2014) concluded that, due to negative survey results, no special-status plant species are expected to occur in the biological study area; therefore, no impacts are expected to occur to special-status plants.

2.3.3.3 Environmental Consequences

The Natural Environment Study concluded that, due to negative survey results, no special-status plant species are expected to occur in the biological study area; therefore, no impacts are expected to occur to special-status plants.

2.3.3.4 Avoidance, Minimization, and/or Mitigation Measures

Because there will be no adverse effects to special-status plant species, no avoidance, minimization, and/or mitigation measures are proposed.

2.3.4 Animal Species

2.3.4.1 Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service and the California Department of Fish and Wildlife are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal or state Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Subsection 2.3.5. All other special-status animal species are discussed here, including California Department of Fish and Wildlife fully protected species and species of special concern, and U.S. Fish and Wildlife Service or National Oceanic and Atmospheric Administration's National Marine Fisheries Service candidate species.

Federal laws and regulations relevant to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations relevant to wildlife include the following:

- California Environmental Quality Act
- Sections 1600–1603 of the California Fish and Game Code
- Sections 4150 and 4152 of the California Fish and Game Code

2.3.4.2 Affected Environment

A Natural Environment Study (June 2014 – as listed in Appendix E) was prepared and is used as a reference for the information in the discussion below.

Bats

The biological study area is likely to be used as foraging habitat by the pallid bat (*Antrozous pallidus*) and western mastiff bat (*Eumops perotis californicus*). Both species are State Species of Concern; they have no formal federal status. Both species are San Joaquin County Multi-Species Habitat Conservation and Open Space Plan-covered species.

Bats are nocturnal and are found in a variety of habitats. Many species forage over water; some also hunt over shrubs or meadows, within trees, and along forest edges. Some species have separate roosts for day, night, maternal, and hibernation use, whereas some species may use the same roost for more than one purpose. Bats roost in a variety of crevices, cavities, and protected sites; roosting sites may include bridges, buildings, cliff crevices, caves, mines, and trees. Multiple species often roost together.

The pallid bat is a locally common species in low elevations and is a yearlong resident through most of its range. It uses a wide variety of habitats from sea level up through mixed conifer forests, but is most common in open, dry habitats with rocky areas for roosting. This bat forages among trees and shrubs and over open ground and often takes prey on the ground. Its diet consists of a variety of insects and spiders, including large, hard-shelled prey, which are often carried to a perch or night roost for consumption. Caves, crevices, and sometimes hollow trees and buildings are used for day roosts. Roosts must protect bats from high temperatures. Night roosts may be in more open sites, such as porches and open buildings.

Pallid bats are social, and most roost in groups of 20 or more. Maternity colonies form in early April and may have 10 to 100 individuals. Males may roost separately or in the nursery colony.

The western mastiff bat is the largest bat in the United States, with a wingspan approaching 2 feet. It is found in California, Nevada, Arizona, Texas and Mexico and

is rarely encountered in large numbers. It is primarily a cliff-dwelling species; maternal colonies are typically composed of 30 to 100 bats. Very little is known about the behavior or status of western mastiff bats. Because they roost in cliff-face crevices and feed high above the ground, they are rarely seen. They approach the ground only at a few select open-water drinking sites.

The willow trees and roadside landscape and windbreak trees in the biological study area are not large enough to provide suitable roosting sites for the pallid bat. This species prefers roosting in tree cavities with dense canopies. The trees in the biological study area are relatively small without dense canopies. No sign of bat usage (urine staining, droppings, etc.) was seen in any tree cavities. No suitable roost sites are present for the western mastiff bat.

The McKinley Avenue overcrossing provides suitable night roost habitat for pallid bats on the underside of the bridge. No suitable day roost sites (crevices, weep holes, etc.) were found on the bridge structure for either bat species.

The valley grassland and agricultural fields in the biological study area provide potential foraging habitat for bats; either of these species could occur in the biological study area during foraging.

Western Burrowing Owl

The western burrowing owl (*Athene cunicularia*) is a State species of concern. It has no federal status. Burrowing owls occur in warmer valleys, open, dry grasslands, deserts, and scrublands associated with agriculture and urban areas that support populations of California ground squirrels. Burrowing owls nest below ground, using abandoned burrows of other species (most commonly ground squirrel) and feed on insects and small mammals.

The agricultural, valley grassland and ruderal habitats in the biological study area provide potential foraging habitat for the western burrowing owl. Burrows of suitable size were found along the State Route 120 embankments, but no sign of owl presence (whitewash, prey remains, etc.) were found during the field visits. However, this species could occur in the biological study area.

Cackling Goose

The cackling goose (*Branta canadensis leucopareia*) is a federally delisted species and is a San Joaquin County Multi-Species Habitat Conservation and Open Space Plan-covered species. This species nests in the Aleutian Islands off Alaska and

winters along much of the West Coast where it forages in flooded, disked, cut, or irrigated fields. Cackling geese are highly mobile while foraging and can relocate to nearby foraging habitat if they are disturbed.

The seasonal wetlands and row and field crops in the biological study area provide potential winter foraging habitat for this species. Because potential foraging habitat is present, this species could occur in the biological study area in winter.

White-Tailed Kite

The white-tailed kite (*Elanus leucurus*) is fully protected under the California Fish and Game Code and the Migratory Bird Treaty Act and is a San Joaquin County Multi-Species Habitat Conservation and Open Space Plan-covered species. The species occurs from western Oregon south to northern Baja California. In California, white-tailed kites range throughout the Central Valley, west of the Sierra, and the coast and coastal valleys from Humboldt County south. White-tailed kites nest and forage in a variety of settings. They build stick nests in the tops of trees, and eggs are laid from January to June. They forage for small rodents over grassland and open savanna.

Several trees are present along the McKinley Avenue shoulders as well as associated with rural residential landscaping. However, these trees are below utility lines and are pruned regularly, substantially decreasing the value as nesting habitat. Numerous trees within the vicinity of the biological study area are suitable nest trees. The agricultural lands in the biological study area provide potential foraging habitat for white-tailed kite, so this species could occur in the biological study area.

California Horned Lark

The California horned lark (*Eremophila alpestris actia*) is on the State watch list and is a San Joaquin County Multi-Species Habitat Conservation and Open Space Plan-covered species. This species is known from coastal regions and the San Joaquin Valley, inhabiting short-grass prairie, bald hills, mountain meadows, and fallow grain fields. They nest on the ground grass-lined cup-shaped depressions in open grassy areas.

The agricultural, valley grassland, and ruderal habitats within the biological study area provide potential nesting and foraging habitat for the California horned lark. This species was not seen during the field visits, but it could occur in the biological study area.

San Joaquin Whipsnake

The San Joaquin whipsnake (*Masticophis flagellum ruddocki*) is a State species of concern and is a San Joaquin County Multi-Species Habitat Conservation and Open Space Plan-covered species; it has no federal status. It inhabits the Sacramento and San Joaquin valleys, from Colusa County to Kern County, and westward to the inner South Coast Ranges. An isolated population occurs in the Sutter Buttes. It is found at elevations of 60 feet up to 3,000 feet.

The San Joaquin whipsnake is a slender, fast-moving snake with smooth scales and a large head and eyes. Adults are 3 to 5 feet long and may be tan, olive, or yellowish brown, without the dark head and neckbands of other subspecies. This snake occurs in open, dry, treeless areas, including grassland and saltbush scrub, and seeks cover in rodent burrows, under shaded vegetation, and under surface objects such as rocks or logs.

The San Joaquin whipsnake is diurnal and hunts with the head held high above the ground. Prey is overcome and crushed with the jaws or beneath loops of the body, and eaten. Prey consists of small mammals, nestling and adult birds, bird eggs, lizards, snakes, amphibians, and carrion. These snakes are good climbers and are able to climb bushes and trees. They bask on roads and will eat roadkill, and are frequently run over by vehicles. Little is known about their reproduction; mating presumably occurs in May, and eggs are laid in early summer, hatching in 45 to 70 days.

The agricultural, valley grassland, and ruderal habitats within the biological study area provide potential denning and foraging habitat for the San Joaquin whipsnake. This species was not seen during the field visits, but it could potentially occur in the biological study area.

Coast Horned Lizard

The coast horned lizard (*Phrynosoma blainvillii*) is a State species of concern and is a San Joaquin County Multi-Species Habitat Conservation and Open Space Plan-covered species; it has no federal status. It is a flattened, spiny-bodied lizard with horns on the head. It occurs in a variety of open habitats with scattered low shrubs, including grassland, chaparral, and open pine, oak, and pinyon-juniper woodlands. Sandy areas, washes, floodplains, and wind-blown deposits provide favorable conditions. It is sometimes found along dirt roads and frequently found near ant hills. This lizard ranges from Butte County to Kern County, in the Sierra Nevada foothills, and throughout the central and southern California coast.

The coast horned lizard seeks cover by running under a low shrub. During hibernation or periods of extreme heat, the coast horned lizard burrows into the soil under surface objects such as logs or rocks, in mammal burrows, or in crevices. It is a diurnal lizard and basks in the sun on open ground, or low boulders and rocks. Coast horned lizards are generally inactive in fall and winter. The breeding season varies according to local conditions but generally occurs in late spring, with eggs hatching in late summer.

The coast horned lizard forages on the ground in open areas, usually between shrubs and often near ant nests. Its diet consists largely of harvester ants, but the lizard will also eat other insects such as small beetles, wasps, grasshoppers, flies, and caterpillars.

The agricultural, valley grassland, and ruderal habitats within the biological study area provide marginally suitable habitat for coast horned lizards. This species was not seen during the field visits, but the coast horned lizard could potentially occur in the biological study area.

Western Spadefoot Toad

The western spadefoot toad (*Spea hammondi*) is a State species of concern and is a San Joaquin County Multi-Species Habitat Conservation and Open Space Plan-covered species; it has no federal status. Historically, the western spadefoot toad ranged from Redding to northwest Baja California. In California, this species was found throughout the Central Valley and in the Coast Ranges from San Francisco to Mexico. Breeding habitat for this species includes temporary pools or ephemeral drainages; breeding occurs from January to May. Water temperatures within these pools must stay between 48 and 86 degrees Fahrenheit to serve as suitable breeding habitat. Eggs are deposited on emergent vegetation or detritus. Once pools begin to dry, western spadefoot toads use “spades” on their hind feet to burrow into the ground. Once fully concealed, these toads enter a period of subterranean hibernation until the following wet season, often 8 to 9 months.

Within the biological study area, the seasonal wetlands southwest of the overpass appear to remain inundated for a sufficient duration during the wet season to support the western spadefoot toad. However, the seasonal wetland features northeast of the overpass are not suitable habitat for this species, as these features only remain inundated for a short time in winter (breeding season) but are also often inundated in late spring or early summer as a result of irrigation runoff from adjacent agricultural

fields to the east. These features exhibit a hydrologic regime that is not suitable to sustain these species.

2.3.4.3 Environmental Consequences

Bats

The project would permanently affect 29.95 acres and temporarily disturb 4.32 acres of agricultural and valley grassland habitat that is potential foraging habitat for bat species. Permanent impacts would occur as a result of project cut and fill activities; temporary impacts would occur as a result of project access and staging during construction activities.

Western Burrowing Owl

The project would permanently affect 29.95 acres and temporarily disturb 4.32 acres of agricultural and valley grassland habitat that is potential foraging habitat for the western burrowing owl. Permanent impacts would occur as a result of project cut and fill activities; temporary impacts would occur as a result of project access and staging during construction activities.

Cackling Goose

The project would result in a permanent loss of 21.88 acres of wintering/foraging habitat for the cackling goose as a result of project cut and fill activities. No temporary impacts are expected because no construction activities during the winter foraging season are proposed.

White-Tailed Kite

As a result of project cut and fill activities, the project would result in a permanent loss of about 25.46 acres of agricultural lands and valley grasslands that provide potential foraging habitat for the white-tailed kite. Temporary effects to potential foraging habitat, totaling 3.18 acres, would also occur during project access and staging. No impacts to potential nesting habitat would occur.

California Horned Lark

The project would permanently affect 29.95 acres and temporarily disturb 4.32 acres of agricultural, valley grassland, and ruderal habitat that is potential nesting and foraging habitat for the California horned lark. Permanent impacts would occur as a result of project cut and fill activities; temporary impacts would occur as a result of project access and staging during construction activities.

San Joaquin Whipsnake

The project would permanently affect 29.95 acres and temporarily disturb 4.32 acres of agricultural, valley grassland, and ruderal habitat that is potential denning and foraging habitat for the San Joaquin whipsnake. Permanent impacts would occur as a result of project cut and fill activities; temporary impacts would occur as a result of project access and staging during construction activities.

Coast Horned Lizard

The project would permanently affect 29.95 acres and temporarily disturb 4.32 acres of agricultural, valley grassland, and ruderal habitat that is suitable habitat for the coast horned lizard. Permanent impacts would occur as a result of project cut and fill activities; temporary impacts would occur as a result of project access and staging during construction activities.

Western Spadefoot Toad

During project cut and fill activities, the project would result in permanent impacts to 0.35 acre of seasonal wetlands southwest of the overpass that are suitable aquatic habitat for the western spadefoot toad. Permanent impacts to 6.19 acres of upland estivation habitat for the western spadefoot toad would also occur. No temporary impacts to this species would occur.

2.3.4.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures are consistent with the Incidental Take Minimization Measures, per the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, and would minimize potential adverse effects to animal species occurring in and around the project site:

Bats

The subject bat species are covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The Incidental Take Minimization Measures described below may be required to offset potential impacts to bats:

- BIO-7:** Focused bat surveys shall be conducted in the biological study area by a qualified bat biologist to determine if nursery or roost sites are present. Focused surveys shall be the responsibility of the City of Manteca. If bats are roosting in the biological study area, the following measures shall be implemented:

- a. Prior to the nursery season for these bat species, sites shall be sealed or otherwise rendered unusable to bats (e.g., install grating).
- b. Seal hibernation sites, prior to the hibernation season (November through March) when hibernation sites are identified on the project site. Alternatively, grating may be installed.
- c. When colonial roosting sites, which are located in trees or structures must be removed, removal shall occur outside of the nursery and/or hibernation seasons and shall occur during dusk and/or evening hours after bats have left the roosting site unless otherwise approved by the Joint Powers Authority.

Western Burrowing Owl

Direct take of nesting western burrowing owls would be in violation of the California Fish and Game Code and Migratory Bird Treaty Act; the western burrowing owl is a covered species under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. However, the San Joaquin County Council of Governments has recently adopted the California Department of Fish and Wildlife Staff Report on Burrowing Owls (2012) and has prepared additional Incidental Take Minimization Measures to cover this species. The following Incidental Take Minimization Measures are consistent with the California Department of Fish and Wildlife Staff Report on Burrowing Owls (2012) and the provisions of the Migratory Bird Treaty Act:

- BIO-8:** The presence of ground squirrels and squirrel burrows are attractive to western burrowing owls. Burrowing owls may, therefore, be discouraged from entering or occupying construction areas by discouraging the presence of ground squirrels. To accomplish this, the City of Manteca should prevent ground squirrels from occupying the biological study area early in the planning process by employing one of the following practices:
- a. The City of Manteca may plant new vegetation or retain existing vegetation entirely covering the site at a height of approximately 36 inches above the ground. Vegetation should be retained until construction begins. Vegetation will discourage both ground squirrel and owl use of the site.
 - b. Alternatively, if western burrowing owls are not known or suspected to occur in the biological study area and the area is an

unlikely occupation site for the California tiger salamander, California red-legged frog, or San Joaquin kit fox, the City of Manteca may disk or plow the entire biological study area to destroy any ground squirrel burrows. At the same time burrows are destroyed, ground squirrels should be removed through one of the following approved methods to prevent reoccupation of the biological study area:

- i. Anticoagulants. Establish bait stations using the approved rodenticide anticoagulants Chlorophacinone or Diphacinone. Rodenticides shall be used in compliance with the Environmental Protection Agency label standards and as directed by the San Joaquin County Agricultural Commissioner.
- ii. Zinc Phosphide. Establish bait stations with non-treated grain 57 calendar days in advance of rodenticide application and then apply Zinc Phosphide to bait stations. Rodenticides shall be used in compliance with the Environmental Protection Agency label standards and as directed by the San Joaquin County Agricultural Commissioner.
- iii. Fumigants. Use below-ground gas cartridges or pellets and seal burrows. Approved fumigants include Aluminum Phosphide (Fumitoxin, Phostoxin) and gas cartridges sold by the San Joaquin County Agricultural Commissioner office. NOTE: Crumpled newspaper covered with soil is often an effective seal for burrows when fumigants are used. Fumigants shall be used in compliance with the Environmental Protection Agency label standards and as directed by the San Joaquin County Agricultural Commissioner.
- iv. Traps. For areas with minimal rodent populations, traps may be effective for eliminating rodents. If trapping activities are required, the use of traps shall be consistent with all applicable laws and regulations.

BIO-9: If the measures described above were not attempted or were attempted but failed and western burrowing owls are known to occupy the biological study area, then the following measures shall be implemented in accordance with the California Department of Fish and Wildlife Staff Report on Burrowing Owls (2012):

- a. Breeding season (February 1 through August 31): Pre-construction surveys for western burrowing owls will be performed no more than 14 days prior to initial ground disturbance activities in accordance with the California Department of Fish and Wildlife Staff Report on Burrowing Owls (2012).
 - i. Any occupied burrows shall not be disturbed and shall be provided with a 250-foot protective buffer until and unless the Technical Advisory Committee, with the concurrence of the Permitting Agencies (representatives on the Technical Advisory Committee); or unless a qualified biologist approved by the Permitting Agencies verifies through non-invasive means that either: 1) the owls have not begun egg laying, or 2) juveniles from the occupied burrows are foraging independently and are capable of independent survival.
 - ii. Once the fledglings are capable of independent survival, a Burrowing Owl Exclusion Plan is developed and approved by the applicable California Department of Fish and Wildlife San Joaquin County Multi-Species Habitat Conservation and Open Space Plan representative/office and habitat is mitigated in accordance with the California Department of Fish and Wildlife Staff Report on Burrowing Owls (2012), then the burrows can be destroyed. Pre-construction surveys following destruction of burrows and prior to initial construction activities are recommended to ensure owls do not re-colonize the biological study area.
 - iii. If project activities are delayed or suspended for more than 15 days during the breeding season, surveys will be repeated.
- b. Non-breeding season (September 1 through January 31): Pre-construction surveys following the California Department of Fish and Wildlife Staff Report on Burrowing Owls (2012) will be performed prior to initial ground disturbance activities. Burrowing owls may be evicted after a Burrowing Owl Exclusion Plan is developed and approved by the applicable California Department of Fish and Wildlife San Joaquin County Multi-Species Habitat Conservation and Open Space Plan representative/office and habitat is mitigated in accordance with the California Department of Fish and Wildlife Staff Report on Burrowing Owls (2012).

Pre-construction surveys following destruction of burrows and prior to initial construction activities are recommended to ensure owls do not re-colonize the biological study area. If owls are found within 160 feet of the biological study area, it is recommended that visual screens or other measures are implemented to limit disturbance of the owls without evicting them from the occupied burrows.

Cackling Goose

The cackling goose is covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. However, the risk of actually killing or harming this species during project construction is nearly nonexistent because this species is highly mobile during winter foraging. Therefore, Incidental Take Minimization Measures for this species are not included in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, consistent with the provisions of the Migratory Bird Treaty Act.

White-Tailed Kite

Direct take of white-tailed kites would be in violation of the California Fish and Game Code and Migratory Bird Treaty Act; the white-tailed kite is a covered species under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The following mitigation measures are consistent with the Incidental Take Minimization Measures for this species and the provisions of the Migratory Bird Treaty Act:

- BIO-10:** Removal of suitable nest trees shall be completed during the non-nesting season (when the nests are unoccupied), between September 1 and February 15.
- BIO-11:** If suitable nest trees will be retained and ground disturbing activities will commence during the nesting season (February 16 through August 31), all suitable nest trees on the site will be surveyed by a qualified biologist prior to initiating construction-related activities. Surveys will be conducted no more than 14 days prior to the start of work. If an active nest is discovered, a 100-foot buffer shall be established around the nest tree and delineated using orange construction fence or equivalent. The buffer shall be maintained in place until the end of the breeding season or until the young have fledged, as determined by a

qualified biologist. If no active nests are present, construction may proceed as planned.

In some instances, California Department of Fish and Wildlife may approve decreasing the specified buffers with implementation of other avoidance and minimization measures (e.g., having a qualified biologist onsite during construction activities during the nesting season to monitor nesting activity). If no nesting is discovered, construction can begin as planned. Construction beginning during the non-nesting season and continuing into the nesting season shall not be subject to these measures, but still need to comply with Migratory Bird Treaty Act and the California Endangered Species Act (which could include monitoring).

California Horned Lark

Direct take of California horned lark would be in violation of the California Fish and Game Code and Migratory Bird Treaty Act; the California horned lark is a covered species under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The following mitigation measures are consistent with the Incidental Take Minimization Measures for this species and the provisions of the Migratory Bird Treaty Act:

- BIO-12:** If project construction is to begin during the nesting season (March 1–September 15), all suitable nesting habitat in the biological study area and within 500 feet of the limits of work shall be surveyed by a qualified biologist prior to initiating construction-related activities. Surveys shall be conducted no more than 14 days prior to the start of work.
- BIO-13:** If nesting areas are identified, a setback of 500 feet from colonial nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests, which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

San Joaquin Whipsnake

The San Joaquin whipsnake is covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. However, because this species is of very limited distribution within San Joaquin County (mainly isolated locations outside of anticipated development areas within the southwest zone), no Incidental Take Minimization Measures are included in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The Incidental Take Minimization Measures described below may be required to offset potential impacts to San Joaquin whipsnake:

- BIO-14:** Prior to any ground-disturbing activities, the area shall be surveyed by a qualified biologist for the presence of San Joaquin whipsnakes.
- BIO-15:** If San Joaquin whipsnakes are discovered in the biological study area, Incidental Take Minimization Measures shall be formulated by the Technical Advisory Committee and approved by the Joint Powers Authority with the concurrence of the Permitting Agencies' representatives on the Technical Advisory Committee in accordance with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan's Adaptive Management Plan – Section 5.9.4.

Coast Horned Lizard

The coast horned lizard is covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. However, because this species is of very limited distribution within San Joaquin County (mainly isolated locations outside of anticipated development areas within the southwest zone), no Incidental Take Minimization Measures are included in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The Incidental Take Minimization Measures described below may be required to offset potential impacts to coast horned lizard:

- BIO-16:** Prior to any ground-disturbing activities, the area shall be surveyed by a qualified biologist for the presence of coast horned lizards.
- BIO-17:** If coast horned lizards are discovered in the biological study area, Incidental Take Minimization Measures shall be formulated by the Technical Advisory Committee and approved by the Joint Powers Authority with the concurrence of the Permitting Agencies' representatives on the Technical Advisory Committee in accordance

with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan's Adaptive Management Plan – Section 5.9.4.

Western Spadefoot Toad

The western spadefoot toad is covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The Incidental Take Minimization Measures described below may be required to offset potential impacts to the western spadefoot toad:

BIO-18: Prior to any ground-disturbing activities, the area shall be surveyed by a qualified biologist for the presence of western spadefoot toad.

If western spadefoot toads are discovered in the biological study area, Incidental Take Minimization Measures shall be formulated by the Technical Advisory Committee and approved by the Joint Powers Authority with the concurrence of the Permitting Agencies' representatives on the Technical Advisory Committee in accordance with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan's Adaptive Management Plan – Section 5.9.4.

2.3.5 Threatened And Endangered Species

2.3.5.1 Regulatory Setting

The main federal law protecting threatened and endangered species is the Federal Endangered Species Act: 16 U.S. Code Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration, are required to consult with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement, a Letter of Concurrence and/or documentation of a No Effect finding. Section 3 of Federal Endangered Species Act defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act, California Fish and Game Code Section 2050, et seq. The California Endangered Species Act emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Wildlife is the agency responsible for implementing California Endangered Species Act. Section 2081 of the Fish and Game Code prohibits “take” of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” The California Endangered Species Act allows for take incidental to otherwise lawful development projects; for these actions, an incidental take permit is issued by the California Department of Fish and Wildlife. For species listed under both the Federal Endangered Species Act and California Endangered Species Act requiring a Biological Opinion under Section 7 of the Federal Endangered Species Act, the California Department of Fish and Wildlife may also authorize impacts to Californian Endangered Species Act species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

2.3.5.2 Affected Environment

A Natural Environment Study (June 2014 – as listed in Appendix E) was prepared and is used as a reference for the information in the discussion below.

Swainson’s Hawk

The Swainson’s hawk (*Buteo swainsoni*) is a State threatened species. It has no formal federal status. Swainson’s hawks are long-distance migrants, wintering primarily in South America, and returning north to breed. In California, Swainson’s hawks occur in the northeastern portion of the state, in the Great Basin Province, and

in the Central Valley. Swainson's hawks return to the Central Valley in mid-March to nest and begin migrating south in August. Nests are built in the tops of large trees, often those associated with riparian habitats. The Swainson's hawk is known to forage up to 10 miles from its nest sites.

Several trees are present along the McKinley Avenue shoulders as well as associated with rural residential landscaping. However, these trees are below utility lines and are pruned regularly, substantially decreasing their value as nesting habitat. Numerous trees within the vicinity of the biological study area are suitable nest trees. The agricultural lands in the biological study area provide potential foraging habitat for Swainson's hawks.

Because suitable foraging habitat is present and Swainson's hawks have historically nested nearby (the closest observation occurred in 1998 0.5 mile north of the biological study area), this species could occur in the biological study area.

California Tiger Salamander

The California tiger salamander (*Ambystoma californiense*) is both State and federally listed as a threatened species. Critical habitat has been designated for the California tiger salamander but the biological study area is not within designated critical habitat. The nearest critical habitat is Unit cv-6, which is about 21 miles northeast of the biological study area at the base of the Sierra Nevada foothills along the Calaveras, San Joaquin, and Stanislaus county borders.

California tiger salamanders are large, terrestrial salamanders, most commonly found in annual grassland habitat. The salamanders may also occur in the grassy understory of valley-foothill hardwood habitats, and uncommonly along stream courses in valley-foothill riparian habitats. The salamanders range includes Sonoma County, Colusa County, Yolo County south through the Central Valley to Tulare County, and the Coast Range (mountains) as far south as Santa Barbara County. An isolated population also occurs in Butte County.

California tiger salamanders are typically associated with vernal pools or similar habitats consisting of seasonal pools or ponds (including human-made ponds that dry out in summer) surrounded by grasslands. Adult California tiger salamanders spend most of their lives underground in small mammal burrows, which are a required habitat element. California tiger salamanders are relatively poor burrowers and require refuges created by ground squirrels and other burrowing mammals. These salamanders estivate in burrows during the dry months. After the onset of winter

rains, adult salamanders move to larger, longer lasting vernal pools and other seasonal pools to breed. Breeding season is November through February, with the timing dependent on rainfall. The larval stage of California tiger salamanders usually lasts 3 to 6 months. Following metamorphosis, juveniles emigrate at night from drying breeding sites traveling up to 1 mile to refuge sites.

One record of the California tiger salamander was recorded within the biological study area. This occurrence, dated 1996, was on the south side of State Route 120 near the McKinley Avenue overpass in a seasonal depression near the toe of the State Route 120 overpass embankment, where about 50 larvae were seen.

In addition, on January 17, 2013, numerous California tiger salamander eggs in the two seasonal wetlands southwest of the overpass were seen. The eggs were attached to vegetative debris within the water. No California tiger salamander eggs were seen in the seasonal wetlands northeast of the overpass. California tiger salamander larvae, about 0.5 inch long, were seen in the two seasonal wetlands southwest of the overpass on a subsequent survey on February 23, 2013.

A site assessment for the California tiger salamander was prepared in February 2013. The site assessment concluded that California tiger salamanders are present in the biological study area, but only the seasonal wetlands southwest of the overpass provide suitable breeding habitat for this species. It was determined that the seasonal wetlands to the northeast do not provide suitable habitat for this species.

Also, suitable upland (aestivation) habitat is also present in the biological study area, next to the seasonal wetland features southwest of the overpass. The upland habitat consists of pasture and managed agriculture areas. Fossorial burrows (burrows of animals that live underground) were also seen.

Vernal Pool Invertebrates

The vernal pool tadpole shrimp (*Lepidurus packardii*) is federally listed as endangered, the vernal pool fairy shrimp (*Branchinecta lynchi*) is federally listed as threatened, and the California linderiella fairy shrimp (*Linderiella occidentalis*) is designated as a California “Special Animal”; none of these species has formal State status. All three vernal pool invertebrate species are San Joaquin County Multi-Species Habitat Conservation and Open Space Plan-covered species.

Vernal pool crustaceans depend on the seasonal nature of their habitat, which consists of depressions that become inundated during winter rains and dry up completely by

summer. These crustaceans generally have an accelerated life cycle timed to the duration of ponding. They hatch, mature and reproduce in a matter of weeks, producing specialized eggs that mature as cysts. The cysts lie dormant during the dry season and are able to withstand heat, cold, and desiccation. When the depressions become inundated the following season, some of the cysts hatch and some continue to lie dormant in the dry pool sediments; the cycle begins again. Most rely on passive means of dispersal (e.g., transport from one pool to a new pool via waterfowl or large scale flooding). Fragmentation and isolation of their habitat negatively affects their populations by reducing dispersal and genetic diversity.

Vernal pool tadpole shrimp inhabit vernal pools containing clear to highly turbid water, ranging in size from less than 10 feet across to the 89-acre Olcott Lake at Jepson Prairie. The vernal pool tadpole shrimp has a patchy distribution across the Central Valley of California, from Shasta County southward to northwestern Tulare County, with isolated occurrences in Alameda and Contra Costa counties. Although spread over a wide geographic range, their habitat is highly fragmented and they are uncommon where they are found. Vernal pool tadpole shrimp require a minimum of 25 days to mature; the average age of first reproduction is close to 8 weeks. Sexually mature adults have been found in vernal pools 3 to 4 weeks after the pools had been filled. Hatching and maturation rates are somewhat temperature-dependent; pools in which this species are found range in temperature from 50 to 84 degrees Fahrenheit.

The vernal pool fairy shrimp is endemic to vernal pools and similar ephemeral freshwater habitats and ranges in the Central Valley from Shasta County to Merced County and northern Fresno County. Vernal pool fairy shrimp are known to occur in disjunct populations within various-sized vernal pools and swales throughout most of the length of the Central Valley. Vernal pool fairy shrimp typically inhabit vernal pools with clear to tea-colored water, most commonly in grass- or mud-bottomed swales, or basalt flow depressions; they are also found in other seasonally ponded areas. These areas can be roadside tire tracks in soft dirt shoulders, livestock ponds, roadside puddles, or other artificially created areas that hold water. This species can mature in 3 to 4 weeks and is tolerant of variation in water temperature. These characteristics allow populations to persist in short-lived, shallow pools; vernal pool fairy shrimp will persist later into the spring where pools are longer lasting. Vernal pool fairy shrimp appear to have a sporadic distribution within vernal pool complexes, often only inhabiting a few pools.

The California linderiella fairy shrimp is the most widely distributed fairy shrimp in California. It is endemic to vernal pools and similar ephemeral freshwater habitats and ranges throughout the Central Valley and the Coast Ranges of California. This species has been documented on most landforms, geologic formations, and soil types supporting vernal pools in California. California linderiella fairy shrimp have been found in vernal pools that vary widely in size, though they tend to be in deeper pools. They are tolerant of a wide range of water temperatures, turbidity, and duration of inundation, and mature quickly (4 to 5 weeks).

Within the biological study area, the seasonal wetlands southwest of the overpass appear to remain inundated for a sufficient duration during the wet season to support vernal pool invertebrates but also dry out in the spring, which is integral for development of these species.

Within the biological study area, the seasonal wetland features northeast of the overpass are not suitable habitat for vernal pool invertebrates. These features remain inundated for a short time in winter, but are also often inundated in late spring or early summer as a result of irrigation runoff from adjacent agricultural fields to the east. These features exhibit a hydrologic regime that is not suitable to sustain these species.

Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) is federally listed as threatened and is a San Joaquin County Multi-Species Habitat Conservation and Open Space Plan-covered species. The biological study area is not within designated critical habitat for this species. The only designated critical habitat for this species is about 56 miles north along the American River in Sacramento County.

Valley elderberry longhorn beetles range from Redding to Bakersfield, into the western foothills of the Sierra Nevada and into the eastern foothills of the Coast Range. Critical habitat was designated for the valley elderberry longhorn beetle in Sacramento County; essential habitat for the recovery of the species also exists in Solano County. The valley elderberry longhorn beetle is typically found in mature riparian vegetation associated with large river systems, but its range extends from the valley floor to a 3,000-foot elevation.

The valley elderberry longhorn beetle depends on its host plant, blue elderberry (*Sambucus nigra* ssp. *caerulea*), which is a common component of Central Valley

riparian forests. Valley elderberry longhorn beetle larvae feed and mature within elderberry stems 1 inch in diameter or larger and then exit prior to metamorphosing to the pupal stage. The life cycle takes 1 to 2 years to complete. The beetle spends most of its life in the larval stage, living within the stems of an elderberry plant. Adults emerge from late March through June, about the same time the elderberry produces flowers. The larval beetles cannot be detected within the stems, and the adult stage is short lived; generally the only evidence of beetle use is the exit holes in the stems created by the emerging larvae. Consequently, valley elderberry longhorn beetles are assumed to be present within stems of sufficient size (1 inch in diameter or larger at ground level) anywhere within the beetle's known range.

Surveys for elderberry shrubs were done on July 24, 2012 and January 31, 2013. The survey area included the biological study area and lands outside of the biological study area within 100 feet of the limits of work. A total of 87 elderberry shrubs with at least one stem that measured 1 inch in diameter at ground level were identified in the survey area. All of the elderberry shrubs were found north of State Route 120; most were northeast of the overpass, either on the existing roadway embankment or near the seasonal wetlands. For each shrub, data were collected for stem size, height, and drip-line diameter, along with determining if the shrub was in a riparian area and if exit holes were present.

2.3.5.3 Environmental Consequences

Swainson's Hawk

The project would result in a permanent loss of approximately 25.46 acres of agricultural lands and valley grasslands because of project cut and fill activities, which provide potential foraging habitat for the Swainson's hawk. Temporary effects to potential foraging habitat, totaling 3.18 acres, would also occur during project access and staging. No impacts to potential nesting habitat would occur.

California Tiger Salamander

The project would result in the permanent loss of 0.35 acre of seasonal wetlands southwest of the overpass that are suitable aquatic breeding habitat and 6.19 acres of upland aestivation habitat for California tiger salamander. No temporary impacts to this species would occur.

Vernal Pool Invertebrates

The project would result in permanent impacts to 0.35 acre of seasonal wetlands southwest of the overpass that are suitable aquatic habitat for vernal pool invertebrate

species during project cut and fill activities. No temporary impacts to these species or their suitable habitat would occur.

Valley Elderberry Longhorn Beetle

According to the Valley Elderberry Longhorn Beetle Guidelines as described in the *Natural Environment Study*, complete avoidance of the valley elderberry longhorn beetle consists of no ground-disturbing activities within 100 feet of the drip-line of any elderberry shrubs providing suitable valley elderberry longhorn beetle habitat. Ground disturbance within 100 feet of the drip-line of elderberry shrubs providing suitable habitat may affect valley elderberry longhorn beetle, and ground disturbance within 20 feet of the drip-line of an elderberry shrubs providing suitable valley elderberry longhorn beetle habitat is considered a direct, adverse effect to the valley elderberry longhorn beetle.

Of the 87 elderberry shrubs inventoried, a total of 75 elderberry shrubs with stems greater than 1 inch diameter at ground level were found within 100 feet of ground-disturbing activities.

A total of 38 elderberry shrubs were inventoried within the limits of ground-disturbing activities or within 20 feet. Thirty-three of the 38 shrubs are within the project footprint and would result in a permanent direct adverse effect to the valley elderberry longhorn beetle; these shrubs contain a total of 246 stems 1 inch in diameter or greater at ground level. The remaining 5 shrubs are outside of the project footprint but are still within 20 feet of the project footprint, which would result in a temporary direct adverse effect to the valley elderberry longhorn beetle; these shrubs contain a total of 53 stems 1 inch in diameter or greater at ground level.

Also, a total of 37 elderberry shrubs are between 20 feet and 100 feet of the limit of ground disturbance (resulting in potential indirect effects to the valley elderberry longhorn beetle); these shrubs contain a total of 239 stems 1 inch in diameter or greater at ground level. An inventory of the affected elderberry shrubs is provided in the *Natural Environment Study* (June 2014) that was prepared for the Project. Figure 2.18 shows the location of the affected elderberry shrubs.

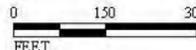
2.3.5.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures are consistent with the Incidental Take Minimization Measures, per the San Joaquin County Multi-Species

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LEGEND

 Project Site	 Elderberry Shrubs Within 20 Feet - 38 Count
 Project Footprint - (59.55 ac)	 Elderberry Shrubs Between 20 and 100 Feet - 37 Count
 20-Foot Buffer	 Elderberry Shrubs Beyond 100 Feet - 12 Count
 100-Foot Buffer	

*State Route 120/McKinley Avenue Interchange
Manteca, San Joaquin County, California
10-SJ-120-PM 1.9-3.0
EA 10-0H8900*

Figure 2.18: Elderberry Locations

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Habitat Conservation and Open Space Plan and would minimize potential adverse effects to threatened species occurring in and around the project site:

Swainson's Hawk

Direct take of nesting Swainson's hawk would be in violation of the California Fish and Game Code and Migratory Bird Treaty Act. This species is also covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The following mitigation measures are consistent with the Incidental Take Minimization Measures for this species and the provisions of the Migratory Bird Treaty Act:

BIO-19: Removal of suitable nest trees shall be completed during the non-nesting season (when the nests are unoccupied), between September 1 and February 15.

BIO-20: If suitable nest trees will be retained and ground disturbing activities commence during the nesting season (February 16 through August 31), all suitable nest trees on the site shall be surveyed by a qualified biologist prior to initiating construction-related activities. Surveys shall be conducted no more than 14 days prior to the start of work. If an active nest is discovered, a 100-foot buffer shall be established around the nest tree and delineated using orange construction fence or equivalent. The buffer shall be maintained in place until the end of the breeding season or until the young have fledged, as determined by a qualified biologist. If no active nests are present, construction may proceed as planned.

In some instances, the California Department of Fish and Wildlife may approve decreasing the specified buffers with implementation of other avoidance and minimization measures (having a qualified biologist onsite during construction activities during the nesting season to monitor nesting activity). If no nesting is discovered, construction can begin as planned. Construction beginning during the non-nesting season and continuing into the nesting season shall not be subject to these measures, but still need to comply with Migratory Bird Treaty Act and the California Endangered Species Act (which could include monitoring).

California Tiger Salamander

The following measures are proposed to minimize adverse effects to any California tiger salamander occurring in the suitable habitat southwest of the overpass:⁴

- BIO-21:** Any biologist performing biological work related to this project shall have the necessary experience to handle and capture the central California tiger salamander; individuals that do not hold an Endangered Species Act section 10(a)(1)(A) permit must have a level of experience with the species comparable to that needed to obtain a permit.
- BIO-22:** Prior to excavation work or other ground disturbance southwest of the overpass, the approved biologist(s) will conduct environmental education training for all construction personnel covering the status of the central California tiger salamander, the importance of avoiding adverse effects to the species, and the potential penalties for not complying with the conditions of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. New personnel who are added to the project after the training is first conducted also will be required to be trained.
- BIO-23:** The approved biologist(s) will oversee the hand excavation of any burrows located in suitable habitat southwest of the overpass that are within the project footprint. These excavations will be performed carefully using hand-trowels and spades. Burrows will be excavated to the terminus of the tunnels, or to where the burrow is less than or equal to 0.5 inch in diameter.
- BIO-24:** If ground disturbing activities in suitable habitat southwest of the overpass are projected to extend beyond the first rain of the rainy season, Caltrans will erect drift fencing around the work areas, prior to commencing work, to prevent central California tiger salamanders

⁴ These Incidental Take Minimization Measures were developed through negotiations between the San Joaquin Council of Governments and the U.S. Fish and Wildlife Service and are intended to mitigate the “central” region of the California tiger salamander species. Therefore the central California tiger salamanders are discussed in these measures.

from entering these sites. Drift fencing will be installed and inspected by the approved biologist(s) no less than 72 hours prior to the first rain event of the rainy season. If weather conditions necessitate the installation of drift fencing, the approved biologist(s) will oversee the installation of pit traps to capture central California tiger salamanders migrating during the rain events. The approved biologist(s) will check pit traps twice daily, once in the morning prior to the start of construction and once at the end of the work day.

BIO-25: Any central California tiger salamanders captured in pit traps or uncovered in burrows will be transferred immediately to the California State University, Sacramento Department of Biological Sciences, in care of Dr. William Avery or Dr. William Coleman. Transported animals must be kept cool and moist.

BIO-26: A post-construction report detailing compliance with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan will be provided to the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife and San Joaquin County Council of Governments, Inc. within 90 calendar days of completion of the project. The report will include:

- a. Dates of project groundbreaking and completion.
- b. Information concerning the success of the project in meeting Incidental Take Minimization Measures, such as the capture and offsite transport of central California tiger salamanders.
- c. An explanation of failure to meet such measures, if any.
- d. Known project effects on the central California tiger salamander.
- e. Observed incidences of injury to or mortality of the species.
- f. Any other relevant information.

Vernal Pool Invertebrates

The vernal pool tadpole shrimp, vernal pool fairy shrimp, and California linderiella fairy shrimp are all covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The Incidental Take Minimization Measures described below may be required to offset potential impacts to these vernal pool invertebrate species:

- BIO-27:** Filling vernal pools shall be delayed until pools are dry and samples from the top layer of vernal pools soils are collected. Soil collections shall be sufficient to include a representative sample of plant and animal life present in the pools by incorporating seeds, cysts, eggs, spores and similar inoculum.
- BIO-28:** Collected soils shall be dried and stored in pillow cases labeled with the date and location of soils collected. Soils will be deposited with the Joint Powers Authority. The Joint Powers Authority shall retain the soils in a cool, dry area and shall be responsible for providing soils to vernal pool construction managers for inoculating newly created vernal pools on San Joaquin County Multi-Species Habitat Conservation and Open Space Plan Preserves.

Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle is covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The Incidental Take Minimization Measures described below may be required to offset potential impacts to valley elderberry longhorn beetles:

- BIO-29:** If elderberry shrubs are present in the biological study area, to the extent possible, a setback of 20 feet from the dripline of each elderberry bush shall be established.
- BIO-30:** Brightly colored flags or fencing shall be installed surrounding elderberry shrubs and remain in place throughout the construction process.
- BIO-31:** In addition to implementation of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan conservation strategy discussed in Section 2.3, in accordance with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan Section 5.5.4(D), the City of Manteca shall pay \$1,800 for each stem over 1 inch in diameter at ground level that is removed or is located within 20 feet of ground disturbance. Approximately 246 stems that are 1 inch in diameter at ground level will be removed during ground disturbance and 53 stems 1 inch in diameter at ground level are within 20 feet of ground disturbance activities, resulting in a total fee of \$538,200.

2.3.6 Invasive Species

2.3.6.1 Regulatory Setting

On February 3, 1999, President Bill Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Federal Highway Administration guidance issued August 10, 1999 directs the use of the State’s invasive species list, currently maintained by the California Invasive Species Council to define the invasive plants that must be considered as part of the National Environmental Policy Act analysis for a proposed project.

2.3.6.2 Affected Environment

A Natural Environment Study (June 2014 – as listed in Appendix E) was prepared and is used as a reference for the information in the discussion below.

Many non-native species have been part of the California landscape for the past 150 years. Some of these introduced species are invasive, such as oats, barley, rye, and yellow star thistle (*Centaurea solstitialis*), and are present in the biological study area. As the project is developed, the potential exists that disturbed areas within the project site may provide suitable habitat for invasive species. Such areas could potentially be inundated with invasive species and therefore would reduce habitat for animal and plant species that naturally occur in the project vicinity.

2.3.6.3 Environmental Consequences

Vegetation in the biological study area is highly disturbed, and it is highly unlikely that project-related activities would further degrade the vegetative composition in the biological study area. However, construction-related activities would potentially promote the distribution of invasive plant species to offsite areas through ground disturbance and movement of earthmoving equipment.

2.3.6.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures are consistent with the Incidental Take Minimization Measures, per the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, and would minimize potential adverse effects from invasive species occurring in and around the project site:

BIO-32: To avoid the introduction of invasive species into the biological study area during project construction, contract specifications shall include, at a minimum, the following measures:

1. All earthmoving equipment to be used during project construction shall be thoroughly cleaned before arriving on the project site.
2. All seeding equipment (i.e., hydroseed trucks) shall be thoroughly rinsed at least three times prior to beginning seeding work.
3. To avoid spreading any non-native invasive species already existing onsite, to offsite areas, all equipment shall be thoroughly cleaned before leaving the site.
4. To avoid introducing additional non-native species to the site, all fill dirt brought onto the site shall be weed free.

2.4 Construction Impacts

Construction impacts are discussed under the various topics within this document. Further analysis of construction impacts on the environmental resource topics would not be required.

2.5 Cumulative Impacts

This section presents information on the development of related projects in Caltrans District 10, San Joaquin County, the City of Manteca, the proposed project, and their potential to cause cumulative adverse effects on the environment and resources.

2.5.1.1 Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

California Environmental Quality Act Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under California Environmental Quality Act can be found in Section 15355 of the California Environmental Quality Act Guidelines. A definition of cumulative impacts under the National Environmental Policy Act can be found in 40 Code of Federal Regulations, Section 1508.7 of the Council on Environmental Quality Regulations.

2.5.1.2 Affected Environment

Regional Context

This document is based on accepted regional land use forecasts for 2040 and assumes transportation improvements programmed within the same time frame. The effects evaluated with implementation of the project include the cumulative effects of development within the region. Permanent cumulative effects of the project would be beneficial, as development of the new State Route 120/McKinley Avenue interchange would improve traffic circulation and operations in the region. An analysis of cumulative effects related to specific development and transportation improvement projects within the region has been included in the discussion of transportation and noise impacts included in Sections 2.1.6 and 2.2.6 of this document, respectively. No further discussion of cumulative impacts for transportation and noise is necessary under this section.

Local Context

The project was analyzed to determine whether adverse environmental effects would be experienced locally, rather than regionally, when considered in combination with other reasonably foreseeable future projects in the project area. Projects are considered “reasonably foreseeable” if they: (a) have applications pending with a government agency; (b) are included in an agency’s budget or capital improvement program; or, (c) are foreseeable future phases of existing projects. Table 2.26 identifies the related transportation and land use developments in the project area that may contribute to cumulative impacts when developed simultaneously with the proposed project. This table includes reasonably foreseeable future and entitled transportation and land use projects that are within Caltrans District 10, City of Manteca, San Joaquin County, and the City of Lathrop.

Table 2.26 provides information on related projects that could contribute to adverse cumulative affects when developed at the same time as the proposed project. It should be noted that many of the related land use projects located in the City of Manteca and close to the proposed project have already been cleared through the environmental process and entitled; therefore, construction of these related land use development projects could begin at any time. Figure 2.19 shows the location of the entitled land development projects in relation to the proposed project.

Table 2.26 Transportation and Land Use-Related Projects

Related Project	Location	Project Description	Status
Transportation Development-Related Projects			
Caltrans District 10-San Joaquin County Projects			
State Route 4 Crosstown Freeway Extension	State Route 4 between Fresno Avenue and Navy Drive	This project would extend the Crosstown Freeway Ramps from Fresno Avenue to Navy Drive; widen Navy Drive to a 4-lane facility (2 lanes in each direction) within the project limits; and make striping improvements along Charter Way.	Construction started summer 2013.
Interstate 5 French Camp Road Interchange Reconstruction Sperry Road Extension Manthey Road Relocation Project	Stockton on Interstate 5/French Camp Road Interchange	The project includes three components: 1) reconstruction of the Interstate 5/French Camp Road interchange, 2) Extension of Sperry Road from Performance Drive to French Camp Road, and 3) relocation of Manthey Road.	Construction started in 2012. Completion estimated for December 2015.
Interstate 205/Lammers Road/Eleventh Street Interchange Project	Interstate 205 at Lammers Road/Eleventh Street Interchange Project	Construct improvements to the Interstate 205 interchange at or near Lammers Road and Eleventh Street, which would provide full access to both directions of Interstate 205, improve traffic operations, and accommodate forecasted traffic growth.	Still in planning phases.
City of Manteca			
Union/120 Interchange Improvements	City of Manteca	Widen the existing overcrossing to provide access to planned development south of State Route 120. Prepare Project Study Report, project report, environmental documents, plans, specifications and estimates. Working on final right-of-way acquisition and utility relocation issues.	Plans are 65 percent complete. Work with Caltrans and consultant to develop plan for completion of PS&E in early 2013.
Land Use Development-Related Projects			
City of Manteca			
CenterPoint (Northwest Airport Way Master Plan)- 1 st Phase	City of Manteca	1 st Phase Development-Site Plan Review Application for a 60,150-square foot industrial building.	Approved by Planning Commission on April 4, 2013.
Stadium Center	City of Manteca	The Stadium Center shopping center at Highway 120 and Airport Way continues to plan for final undeveloped pad sites. City purchased former Lowe's property at 1880 Daniels Drive on January 28, 2013 as a potential future South County Courthouse and Government Center.	Development has been ongoing since December 2010. No specific schedule for completion for undeveloped pad sites.

Table 2.26 Transportation and Land Use-Related Projects

Related Project	Location	Project Description	Status
Union Crossing	City of Manteca	Proposed commercial center at the southwest quadrant of Union Road and the Highway 120 Bypass. Project would include approximately 47 acres with approximately eight major retailers and space and pads for smaller retailers.	February 22, 2010: Property officially annexed to the City. No specific construction schedule available.
Yosemite Square	City of Manteca- Located east of Highway 99.	The project includes a General Plan Amendment, Rezone and Tentative Map for the development of approximately 144.3 acres into 17 lots for the future development of 761 residential units and up to 475,675 square feet of business industrial park uses, consistent with the proposed Master Plan.	March 2012: Master Plan approved by Council. No specific time frame is available for development of the project.
Dutra Estates Unit 5	City of Manteca Parcel 241-760-42 Approximately 0.36 mile to the southeast of the project site.	This land use project includes development of a single-family residential subdivision on 9 acres of land. The project includes development of 49 single-family residential units and associate infrastructure (internal circulation, water, sewer, electrical systems).	The application date was February 1, 2010, and approval of the Adopted Mitigated Negative Declaration occurred on November 2, 2010.
The Trails	City of Manteca on Parcels 241-260-05 and 241-240-02. Approximately 1 mile southwest of the project.	This project includes the development of 1,370 single-family residential units subdivision on 339 acres of land. The project would include development of associated infrastructure including internal circulation (roadways) and utilities (water, sewer, electrical systems).	The application date was March 9, 2009, and the Environmental Impact Report was certified on February 2, 2011.
Terra Ranch Apartments	City of Manteca Parcel 241-320-59 Approximately 0.68 mile southeast of project site.	This project includes development of a 200-unit apartment complex on 10 acres of land.	The application date was March 11, 2009, and the Environmental Impact Report was certified on June 21, 2011.
Terra Ranch Subdivision	City of Manteca Parcel 241-320-59 Approximately 0.68 mile southeast of project site.	This project includes the development of a 212-single-family-residential-unit subdivision on 65 acres of land.	The application date was March 11, 2009, and the Environmental Impact Report was certified on June 21, 2011.

Table 2.26 Transportation and Land Use-Related Projects

Related Project	Location	Project Description	Status
Oakwood Trails at Tara Park	City of Manteca Parcels 241-260-02; 241-260-03; 241-260-07. Directly southwest of the project site.	This project will develop a 207-acre single-family subdivision on three land parcels. Development would include 578 single-family residential units as well as infrastructure supporting the subdivision (including residential streets and utilities).	The application date was October 31, 2013, and the Environmental Impact Report is currently under review for approval (as of December 2013).
Sundance	City of Manteca. Includes Parcels 226-160-08; 226-160-09; 226-160-10; 226-160-11; 226-210-31 and partial 226-160-05. Approximately 0.66 mile southeast of the project site.	This project will develop 451 single-family residential units on approximately 110 acres of land. Additional development would include circulation and utility infrastructure.	Environmental Impact Report has been certified. Tentative map was approved on January 23, 2007. Tentative map is being revised to include lots that front to Woodward Avenue (as of December 2013).
Oleander Estates	City of Manteca Parcels 226-17-004; 226-170-05; 226-180-01; 226-180-02; 226-180-18; 226-180-07; 226-180-08; 226-180-15; 226-180-16; and 226-180-05. Approximately 0.93 miles southeast of the project site.	This project will develop 536 single-family residential (estate-style) units on approximately 112 acres of land. Additional development would include circulation and utility infrastructure.	Environmental Impact Report has been certified, and mitigation measures have been met to allow grading. Tentative map was approved on October 19, 2010 and has two phases of development with 218 lots under final map and close grading/construction commencement (as of December 2013).

Table 2.26 Transportation and Land Use-Related Projects

Related Project	Location	Project Description	Status
Family Entertainment Zone	City of Manteca. Parcels 241-31-53; 241-31-44; 241-31-18; 241-31-32; 241-31-16; 241-30-48; 241-31-48; 241-30-62; 241-30-61. Located adjacent to the northeast portion of the project site.	The project includes land use changes on the identified APNs to a Master Plan land use designation involving approximately 187 acres. The Family Entertainment Zone and related Master plan includes development of public-serving visitor uses of a destination nature such as: public recreation facilities, tournament playfields, outdoor recreation, family entertainment uses, ancillary retail and dining uses and various infrastructure improvements.	Environmental Impact Report is currently under contract and being prepared (as of December 2013). Application submittal and approval has not been completed at this time (December 2013).
San Joaquin County			
Oakwood Lake Shores	San Joaquin County. Located on a number of parcels. Directly west southwest of project site.	This project includes the development of a single-family residential subdivision. Development of 480 single-family high-end residential units would occur along with supporting infrastructure.	Environmental Impact Report has been certified. Construction has already started on a few lots.
Machado Estates	San Joaquin County. Location on Parcel 241-320-18 approximately 0.71 miles southeast of proposed project.	This project includes development of 558-single-family-residential-unit subdivision on 157 acres of land. Additional development would include circulation and utility infrastructure.	Subdivision map has not been approved, and the land area has not been annexed into the City of Manteca (as of December 2013). An Environmental Impact Report has been approved; however, the project is considered withdrawn at this time (December 2013) but could be developed in the near future.

Table 2.26 Transportation and Land Use-Related Projects

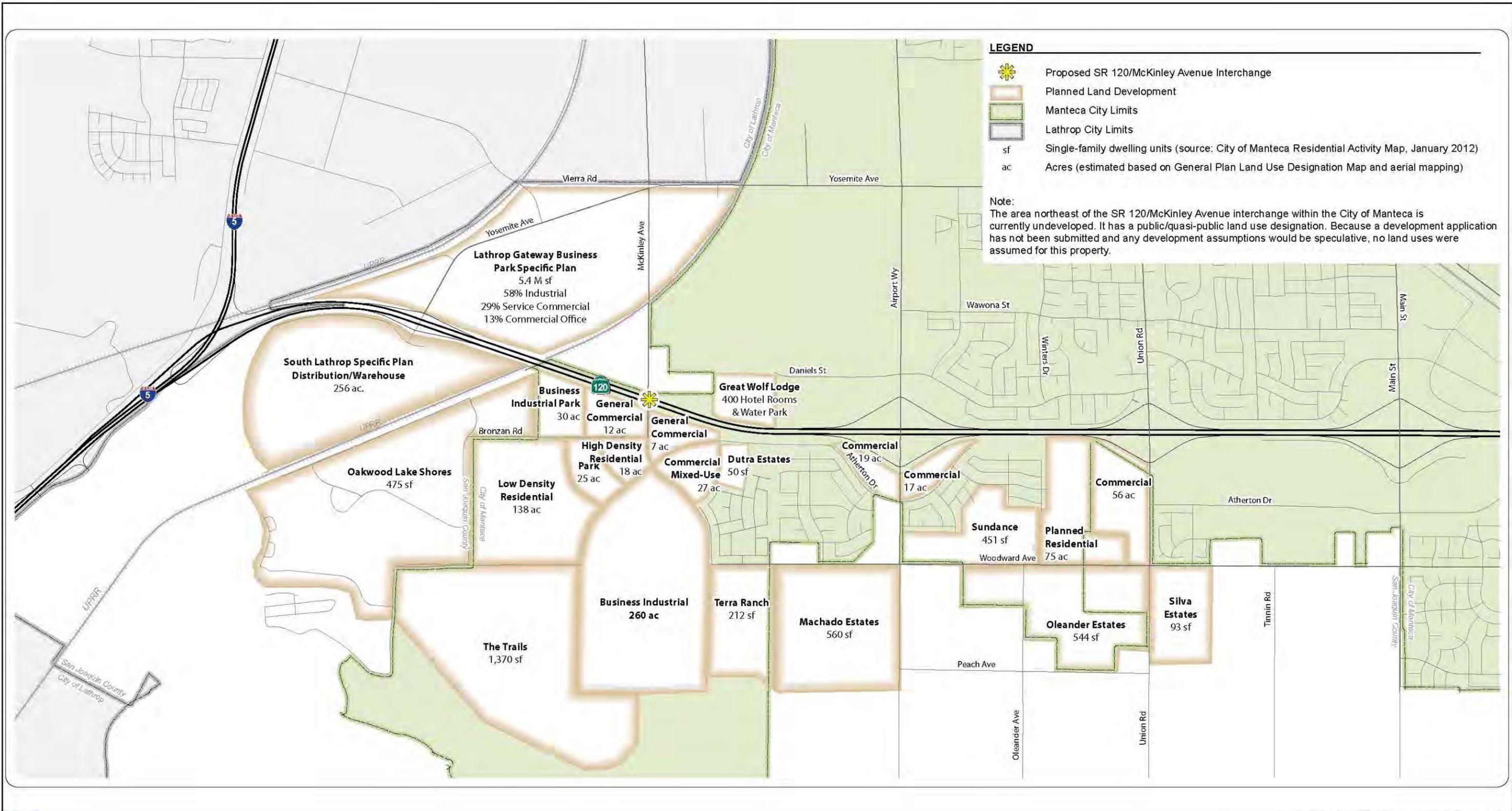
Related Project	Location	Project Description	Status
Silva Estates (Blossom Grove)	San Joaquin County. Location on Parcels 224- 022-01; 224- 022-02; 224- 022-03; 224- 022-05; 224- 022-06; 224- 022-04. Approximately 1.6 miles southeast of project site.	The project would include the development of 88 single-family residential (estate style) units on approximately 24 acres of land. Additional development would include circulation and utility infrastructure.	Original Environmental Impact Report certified in 2007. A portion of the tentative map has been certified and first phase has met mitigation measure requirements and has been graded. Waiting for final map and subdivision agreement approval (as of December 2013).
City of Lathrop¹			
Lathrop Gateway Business Specific Plan	City of Lathrop. Approximately 0.20 mile northwest and west of the project site. Multiple parcels.	Project consists of a request for City approval of the Specific Plan associated applications and the annexation of the 384-acre Specific Plan area into the City of Lathrop. The Land Use Plan proposes approximately 57 acres of commercial use, 168 acres of limited industrial use, 83 acres of service commercial uses, and the remaining 77 acres in roads and public facility sites.	Preparation of the Environmental Impact Report is currently underway (as of December 2013). Application submittal and approval have not been completed at this time (December 2013).
South Lathrop Specific Plan Distribution/Warehouse	City of Lathrop. Multiple parcels. Adjacent to the western side of the proposed project.	Project consists of a request for City approval of the South Lathrop Specific Plan, associated applications and annexation of the 315-acre Specific Plan into the City of Lathrop. The Land Use Plan proposes approximately 10 acres of commercial office uses, 222 acres of limited industrial uses, and the remaining 83 acres in open space, roads and public facility sites.	Notice of Preparation developed and submitted in January 2013. Environmental Impact Report is currently underway (as of December 2013).

Source: The related projects in this table were gathered per the City of Manteca's website; and Caltrans District 10 projects in San Joaquin County were obtained on Caltrans District 10 website (July 2013); and from staff at the City of Manteca.

Notes:

¹ Although these related projects are located in the City of Lathrop, they are located adjacent to the western portion of the proposed project site. Once these related projects are operational, motorists would most likely access these related projects via the new State Route 120/McKinley Avenue interchange (the proposed project).

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State Route 120/McKinley Avenue Interchange
Manteca, San Joaquin County, California
10-SJ-120-PM 1.9-3.0
EA 10-0H8900

* Not to scale.

SOURCE: Fehr & Peers(2013).

F:\Raj1103\ANIS-EA Chapter 2\Figure 2.19.ai (7/1/2014)

Figure 2.19: Related Projects near the Project Site

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2.5.1.3 Environmental Consequences

Impacts to project-specific resources have been discussed throughout this document. Section 2.1 described potential adverse effects on Land Use, Growth, Farmlands, Community Impacts, Utilities, and Transportation with implementation of the project. Section 2.2 addressed potential adverse effects to Visual/Aesthetic, Cultural Resources, Hydrology and Floodplains, Water Quality, Geology, Paleontology, Hazardous Materials, Air Quality, and Noise. Section 2.3 describes potential adverse effects to Natural Communities, Wetlands, Plant Species, Animal Species, Threatened and Endangered Species, and Invasive Species.

Based on the analysis presented above, it was determined that the following resources would not be cumulatively adversely affected with implementation of the project and related projects:

- Existing and Future Land Uses
- Consistency with State, Regional and Local Plans
- Community Character and Cohesion
- Relocations and Real Property Acquisitions
- Environmental Justice
- Utilities/Emergency Services
- Visual/Aesthetics
- Cultural Resources
- Water Quality and Stormwater Runoff
- Geology/Soils/Seismicity/Topography
- Paleontology
- Hazardous Waste/Materials
- Noise

Based on the analysis presented above, it was determined that the following may be cumulatively adversely affected with implementation of the project and related projects:

- Farmland
- Growth
- Traffic and Transportation/Pedestrian and Bicycle Facilities
- Visual/Aesthetics
- Air Quality

- Biological Environment (including Natural Communities; Wetlands and Other Waters; Plant Species; Animal Species; Threatened and Endangered Species; and Invasive Species)

Global climate change was not included in this cumulative analysis. Climate change is by its very nature a cumulative impact and is discussed separately in Section 2.6.

Implementation of the project would result in impacts to resources that have been identified above and throughout this document; however, avoidance, minimization, and/or mitigation measures have been identified (similar to those of the related projects listed in Table 2.35) to reduce such impacts. Due to the avoidance, minimization, and/or mitigation measures implemented by the project and related projects, the project would not cumulatively contribute to a significant impact on the environment. A cumulative analysis for each of the resources that would be cumulatively affected is presented below.

Farmlands

The City of Manteca and San Joaquin County are rich in productive agricultural lands that are designated as Prime Farmland, Unique Farmland, Farmland of Statewide Importance and Farmland of Local Importance. According to the City of Manteca General Plan, 5,265.1 acres of Prime Farmland, 11,863.2 acres of Farmland of Statewide Importance, and 273.5 acres of Farmland of Local Importance are within the City boundary. No land within the City of Manteca is designated as Unique Farmland. According to the California Department of Conservation Farmland Mapping and Monitoring Program, 385,337 acres of Prime Farmland, 69,481 acres of Unique Farmland, 83,307 acres of Farmland of Statewide Importance, and 76,869 acres of Farmland of Local Importance are within the boundary of San Joaquin County.

Implementation of the project and related projects would contribute to the loss of Important Farmland on a local and regional basis. Specifically, the proposed project would cumulatively contribute to the loss of 1.20 acres of Prime Farmland (0.023 percent and 0.0003 percent of the Prime Farmland inventory in the City and County, respectively); 14.28 acres of Farmland of Statewide Importance (0.12 percent and 0.02 percent of the Farmland of Statewide Importance inventory in the City and County, respectively); and 2.10 acres of Farmland of Local Importance (0.77 percent and 0.003 percent of the Farmland of Local Importance inventory in the City and County, respectively). The amount of Important Farmland that would be lost to

project implementation would be cumulatively negligible when compared to the Important Farmland inventory of the City and County.

The related projects listed in Table 2.26 are still in the planning stages, are being developed, or have not been fully designed. The total amount of land required for implementation of some of the related projects is known at this time and could include the conversion of active agricultural land and Important Farmland (Prime Farmland, Unique Farmland, Farmland of Statewide Importance, and Farmland of Local Importance) within each related project boundary. If agricultural land and Important Farmland are lost due to implementation of the related projects, each individual applicant of the related projects would be required to mitigate for such a loss. Therefore, the related projects may cumulatively reduce the inventory of Important Farmland on a local and regional level; however, minimization measures would be implemented to reduce the cumulative adverse effects of such loss from the inventory.

Growth

The Manteca General Plan 2023 provides a Land Use Map identifying a number of different land uses and land use development intensities to guide the future build-out of the city. It is estimated that at full build-out, the City would accommodate a population of 113,254 residents, which is a 68.8 percent increase compared to the existing population of 67,096 residents.

Population growth within Manteca has been well documented, identified and analyzed in the Manteca General Plan 2023 and the General Plan Environmental Impact Report. The Manteca General Plan Environmental Impact Report indicates growth impacts are “Significant and Unavoidable” and continues on concluding that, “There are no specific mitigation measures that will reduce or eliminate the impact of increased population on Manteca and the surrounding area. However, monitoring and regulating growth to a responsible level will maintain the integrity of the community.” The future growth of Manteca, which is primarily driven by continued demand for relatively affordable housing and quality of life in the area, is projected to continue for the near future until build-out conditions are reached.

Most of the land development-related projects identified in Table 2.35 have been through the environmental process and are currently entitled; the start of construction of these related projects will likely occur prior to opening day of the project. Applicants of the related projects would incorporate project-specific mitigation

measures to accommodate for their adverse effects on the growth in the city. Examples of mitigation measures that could potentially be implemented by the related projects include, but are not limited to: improvements to infrastructure (roadways, utilities, etc.); payment of City land development fees; development or improvement of public services (such as payment of fees to improve or expand the size of local fire or law enforcement stations); improvements to the circulatory system in the city; and/or, mitigation banking of land to be set aside for open space/recreational uses. Implementation of such mitigation measures would reduce the adverse effect associated with growth; however, cumulative adverse effects associated with growth in the city would still be significant and unavoidable.

The Manteca General Plan 2023 and San Joaquin Council of Governments 2011 Regional Transportation Plan has identified the project as being needed to help reduce acknowledged adverse effects associated with future growth in the City of Manteca. Project implementation would reduce the existing and future congestion along State Route 120 and would provide for an additional entrance/exit to the City of Manteca. The project would accommodate the existing entitled projects surrounding the site and future related projects not yet entitled by offering a better circulation system along State Route 120. Overall, the project would be cumulatively beneficial to the acknowledged future growth that would occur within the City of Manteca.

Traffic and Transportation/Pedestrian and Bicycle Facilities

Development of the project would occur on State Route 120 between the Yosemite Avenue and Airport Way interchanges. State Route 120 is a regional thoroughfare connecting the Central Valley to the San Francisco Bay Area. State Route 120 also provides regional access to the City of Manteca. Development of the project and related projects could have a cumulative adverse effect to the circulation system within the City of Manteca and within the jurisdiction of Caltrans District 10 San Joaquin County. As discussed above in Subsection 2.1.9, the project would implement minimization measures during construction and operation to reduce cumulative contribution to adverse effects on a local and regional level. Development of the related projects would also implement avoidance, minimization, or mitigation measures on a need-by-need basis to ensure that their cumulative contribution does not result in an adverse effect to the local and regional circulation system.

Visual/Aesthetics

Cumulative impacts are those resulting from past, present and reasonably future actions, combined with the potential visual impacts of the project. The project would

be built in an area where the dominant visual feature is the elevated State Route 120. Against this backdrop, the project would not have affect the overall visual quality of the project area in the long term and should blend into the setting, in light of the City's planned development trends, keeping the visual unity and intactness of the corridor. In consideration with planned future development, the project would not cause a cumulative decrease in the area's visual quality.

Air Quality

Modeling of air quality impacts is based on land uses from the State Transportation Improvement Program and State Implementation Plan, both of which are cumulative assessments. Because the project is consistent with both of these programs, additional cumulative analysis is not warranted. With the minimization measures proposed in the Subsection 2.2.5, the project would not have cumulatively considerable impacts to air quality.

Biological Environment

The project, in conjunction with other reasonably foreseeable projects in the region, would not result in adverse cumulative effects on the biological environment when avoidance and minimization measures and compensatory mitigation are implemented. The project is within the area covered by the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The plan provides compensation for the conversion of open space to non-open space uses and the loss of habitat for plant, fish, and wildlife species within the jurisdictional boundary of the plan. To reduce cumulative impacts to the species under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, the project would be required to include and implement species-specific measures to minimize impacts to covered species and include Incidental Take Minimization Measures as conditions of project approval. The compensation for impacts to habitat for special-status plant and animal species covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan may be provided by one or more of the following options:

- Payment of the appropriate mitigation fee
- Dedication of mitigation lands
- Purchase of approved mitigation bank credits, or
- Propose an alternative mitigation plan

The following discusses the cumulative effects associated with each biological area of concern within the project site and the surrounding area.

Natural Communities of Special Concern: Cumulative impacts to freshwater, lake, pond, or vernal pool habitat in the general vicinity of the project would likely occur through habitat loss during public works projects similar in scope to the project. Related projects in the region with similar impacts would also be required to minimize and/or mitigate such impacts. Considering the small area of impact, with implementation of the avoidance and minimization measures detailed above in Section 2.3, the project would not substantially contribute to cumulative effects for freshwater, lake, pond or vernal pool habitat.

Special-Status Plant Species: No special-status plant species are expected to occur within the project site; therefore, project implementation would not cumulatively contribute to the loss of a special-status plant species.

Special-Status Animal Species Occurrences: Cumulative impacts to special-status bat species; western burrowing owls; cackling goose; Swainson's hawk; white-tailed kite; California horned lark; San Joaquin whipsnake; coast horned lizard; California tiger salamander; western spadefoot toad; vernal pool invertebrates; and valley elderberry longhorn beetle in the general vicinity of the project would likely occur through habitat loss during public works projects similar in scope to the project. Related projects in the region with similar impacts would also be required to minimize and/or mitigate such impacts. Considering the amount of habitat available for these species in the region relative to the amount of habitat within the project site and implementation of avoidance and minimization measures identified above, the project would not substantially contribute to cumulative effects for each of these species.

2.5.1.4 Avoidance, Minimization, and/or Mitigation Measures

The analysis presented above shows that the incremental effects of the project, combined with the effects of past, present and probable future projects in the City of Manteca and within Caltrans District 10 San Joaquin County are not cumulatively considerable. No avoidance, minimization, or mitigation measures to reduce the project's cumulative contribution to adverse effects are required in addition to those already contained in this document.

2.6 Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of

scientific research attributes these climatological changes to greenhouse gas emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to greenhouse gas emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of greenhouse gasses generated by human activity including carbon dioxide, methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the United States, the main source of greenhouse gas emissions is electricity generation, followed by transportation sources. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles comprise the largest source of greenhouse gas-emitting sources. The dominant greenhouse gas emitted is carbon dioxide, mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change: “greenhouse gas mitigation” and “adaptation.” “Greenhouse gas mitigation” is a term for reducing greenhouse gas emissions to reduce or “mitigate” the impacts of climate change. “Adaptation” refers to the effort of planning for and adapting to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels).⁵

There are four primary strategies for reducing greenhouse gas emissions from transportation sources: 1) improving the transportation system and operational efficiencies, 2) reducing travel activity, 3) transitioning to lower greenhouse gas-emitting fuels, and 4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued cooperatively.⁶

⁵ http://climatechange.transportation.org/ghg_mitigation/

⁶ http://www.fhwa.dot.gov/environment/climate_change/mitigation/

2.6.1.1 Regulatory Setting

State

With the passage of several pieces of legislation including State Senate and Assembly bills and Executive Orders, California launched an innovative and proactive approach to dealing with greenhouse gas emissions and climate change.

Assembly Bill 1493 (AB 1493), Pavley, Vehicular Emissions: Greenhouse Gases, 2002: This bill requires the California Air Resources Board to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

Executive Order S-3-05 (June 1, 2005): The goal of this order is to reduce California's greenhouse gas emissions to 1) year 2000 levels by 2010, 2) year 1990 levels by 2020, and 3) 80 percent below the year 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

Assembly Bill 32 (AB 32), Núñez and Pavley, The Global Warming Solutions Act of 2006: Assembly Bill 32 sets the same overall greenhouse gas emissions reduction goals as outlined in Executive Order S-3-05 while further mandating that California Air Resources Board create a scoping plan and implement rules to achieve “real, quantifiable, cost-effective reductions of greenhouse gases.”

Executive Order S-20-06 (October 18, 2006): This order establishes the responsibilities and roles of the Secretary of the California Environmental Protection Agency and state agencies with regard to climate change.

Executive Order S-01-07 (January 18, 2007): This order set forth the low carbon fuel standard for California. Under this Executive Order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Senate Bill 97 (SB 97) Chapter 185, 2007, Greenhouse Gas Emissions: This bill required the Governor's Office of Planning and Research to develop recommended amendments to the California Environmental Quality Act Guidelines for addressing greenhouse gas emissions. The amendments became effective on March 18, 2010.

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires the California Air Resources Board to set regional emissions reduction targets from passenger vehicles. The Metropolitan

Planning Organization for each region must then develop a "Sustainable Communities Strategy" that integrates transportation, land-use, and housing policies to plan for the achievement of the emissions target for its region.

Senate Bill 391 (SB 391) Chapter 585, 2009 California Transportation Plan: This bill requires the State's long-range transportation plan to meet California's climate change goals under Assembly Bill 32.

Federal

Although climate change and greenhouse gas reduction are a concern at the federal level, currently no regulations or legislation have been enacted specifically addressing greenhouse gas emissions reductions and climate change at the project level. Neither the U.S. Environmental Protection Agency nor the Federal Highway Administration has issued explicit guidance or methods to conduct project-level greenhouse gas analysis.⁷ Federal Highway Administration supports the approach that climate change considerations should be integrated throughout the transportation decision-making process—from planning through project development and delivery. Addressing climate change mitigation and adaptation early in the planning process will assist in decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

The four strategies outlined by Federal Highway Administration to lessen climate change impacts correlate with efforts that the state is undertaking to deal with transportation and climate change; these strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and a reduction in travel activity.

Climate change and its associated effects are also being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the "National Clean Car Program" and Executive Order 13514 - Federal Leadership in Environmental, Energy and Economic Performance.

⁷ To date, no national standards have been established regarding mobile source greenhouse gases, nor has the U.S. Environmental Protection Agency established any ambient standards, criteria or thresholds for greenhouse gases resulting from mobile sources.

Executive Order 13514 (October 5, 2009): This order is focused on reducing greenhouse gases internally in federal agency missions, programs and operations but also directs federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

The U.S. Environmental Protection Agency's authority to regulate greenhouse gas emissions stems from the U.S. Supreme Court decision in *Massachusetts v. U.S. Environmental Protection Agency* (2007). The Supreme Court ruled that greenhouse gas meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the court's ruling, U.S. Environmental Protection Agency finalized an endangerment finding in December 2009. Based on scientific evidence it found that six greenhouse gases constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing act and U.S. Environmental Protection Agency's assessment of the scientific evidence that form the basis for the U.S. Environmental Protection Agency's regulatory actions. The U.S. Environmental Protection Agency in conjunction with National Highway Traffic Safety Administration issued the first of a series of greenhouse gas emission standards for new cars and light-duty vehicles in April 2010.⁸

The U.S. Environmental Protection Agency and the National Highway Traffic Safety Administration are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced greenhouse gas emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever greenhouse gas regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle greenhouse gas regulations.

The final combined standards that comprised the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards implemented by this program are expected to reduce greenhouse gas emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

⁸ <http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq>.

On August 28, 2012, the U.S. Environmental Protection Agency and National Highway Traffic Safety Administration issued a joint Final Rulemaking to extend the National Program for fuel economy standards to model year 2017 through 2025 passenger vehicles. Over the lifetime of the model year 2017-2025 standards, this program is projected to save approximately four billion barrels of oil and two billion metric tons of greenhouse gas emissions.

The complementary U.S. Environmental Protection Agency and National Highway Traffic Safety Administration standards that comprise the Heavy-Duty National Program apply to combination tractors (semi-trucks), heavy-duty pickup trucks and vans, and vocational vehicles (including buses and refuse or utility trucks). Together, these standards will cut greenhouse gas emissions and domestic oil use significantly. This program responds to President Barack Obama's 2010 request to jointly establish greenhouse gas emissions and fuel efficiency standards for the medium- and heavy-duty highway vehicle sector. The agencies estimate that the combined standards will reduce carbon dioxide emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of model year 2014 to 2018 heavy-duty vehicles.

Project Analysis

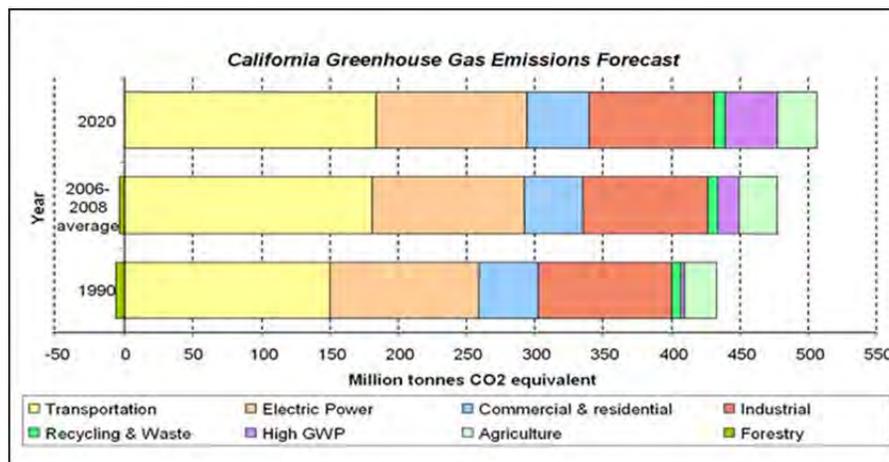
An individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental* change in emissions when combined with the contributions of all other sources of greenhouse gas.⁹ In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (California Environmental Quality Act Guidelines sections 15064(h)(1) and 15130). To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient

⁹ This approach is supported by the Association of Environmental Professionals: Recommendations by the Association of Environmental Professionals on How to Analyze Green House Gas Emissions and Global Climate Change in California Environmental Quality Act Documents (March 5, 2007), as well as the South Coast Air Quality Management District (Chapter 6: The California Environmental Quality Act Guide, April 2011) and the United States Forest Service (Climate Change Considerations in Project Level National Environmental Protection Act Analysis, July 13, 2009).

information on a global scale of all past, current, and future projects in order to make this determination is a difficult, if not impossible, task.

The Assembly Bill 32 Scoping Plan mandated by Assembly Bill 32 contains the main strategies California will use to reduce greenhouse gas emissions. As part of its supporting documentation for the Draft Scoping Plan, California Air Resources Board released the greenhouse gas inventory for California (forecast last updated: October 28, 2010). The forecast is an estimate of the emissions expected to occur in 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the greenhouse gas inventory for 2006, 2007, and 2008. Figure 2.20 shows the past and future forecast for greenhouse gas production of various uses.

Figure 2.20 California Greenhouse Gas Forecast



Source: <http://www.arb.ca.gov/cc/inventory/data/forecast.htm>

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing greenhouse gas emission reduction and climate change. Recognizing that 98 percent of California's greenhouse gas emissions are from the burning of fossil fuels and 40 percent of all human-made greenhouse gas emissions are from transportation, Caltrans has created and is implementing the December 2006 Climate Action Program at Caltrans.¹⁰

¹⁰ Caltrans Climate Action Program is located at the following web address:
[http://www.dot.ca.gov/hg/tpp/offices/ogm/key_reports_files/
State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf](http://www.dot.ca.gov/hg/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf).

Construction Emissions

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction greenhouse gas emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

Construction emissions were estimated for the proposed project using the Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model, Version 6.3.1. As shown in Table 2.27, which presents construction emissions from the Air Quality Analysis, total carbon dioxide emissions for construction of the proposed project are estimated at 4,850.2 metric tons and 1,616.7 metric tons of CO₂. As discussed below, idling times would be restricted to ten minutes in each direction for passenger cars during lane closures and five minutes for construction vehicles. Restricting idling times would reduce harmful emissions from passenger cars and diesel-powered construction vehicles during project construction.

In addition, with innovations such as longer pavement lives, improved traffic management plans and changes in materials, the greenhouse gas emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

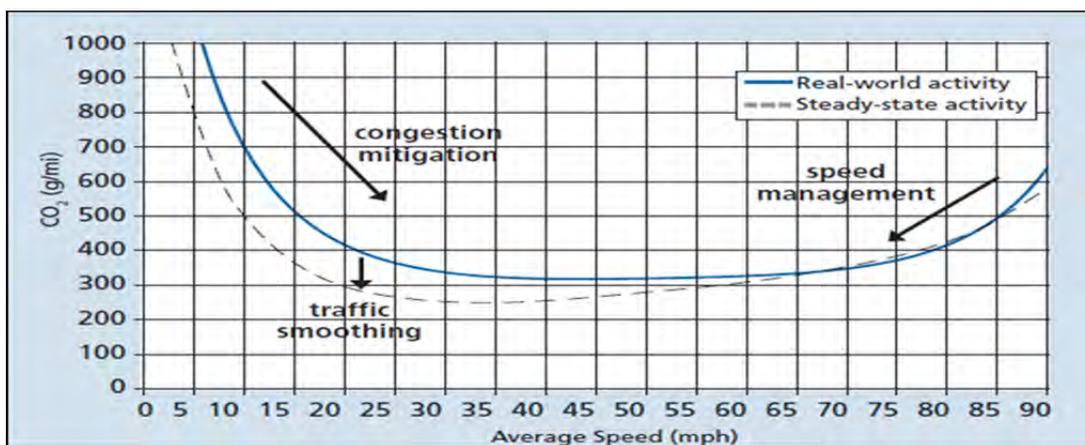
Operational Emissions

Transportation's contribution to greenhouse gas emissions is dependent on three factors: the types of vehicles on the road, the type of fuel the vehicles use, and the time/distance the vehicles travel. As part of the Climate Action Program, Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies, including: job/housing proximity, developing transit-oriented communities, and high-density housing along transit corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority over the City of Manteca. Caltrans is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars and in light- and heavy-duty trucks. However, it is important to note that control of the fuel economy standards is held by the United States Environmental Protection Agency and California Air Resources

Board. Lastly, the use of alternative fuels is also being considered; Caltrans is participating in funding for alternative fuel research at the University of California, Davis.

One of the main strategies in the Caltrans Climate Action Program to reduce greenhouse gas emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide (carbon dioxide) from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0-25 miles per hour (see Figure 2.21).

Figure 2.21 Possible Effect of Traffic Operation Strategies in Reducing On-Road Carbon Dioxide Emissions¹¹



To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors greenhouse gas emissions, particularly carbon dioxide, may be reduced. Regional traffic data, in conjunction with the EMFAC2007 emissions model,¹² was used to calculate the carbon dioxide

¹¹ Traffic Congestion and Greenhouse Gases: Matthew Barth and Kanok Boriboonsomsin (TR News 268 May-June 2010) <<http://onlinepubs.trb.org/onlinepubs/trnews/trnews268.pdf>>

¹² At the beginning of this environmental analysis EMFAC2007 was the model used for the SIP. Therefore, all of the emission calculations were done using EMFAC2007.

emissions under existing conditions, 2040 without-project conditions, and 2040 with-project conditions.

The purpose of this project is to improve traffic circulation, alleviate local congestion, and accommodate forecasted travel demand by building a new interchange at McKinley Avenue. This new interchange would increase roadway capacity from existing conditions and allow for vehicles to travel directly to and from McKinley Avenue to State Route 120 instead of exiting State Route 120 at either Airport Way or Guthmiller Road to reach McKinley Avenue and vice versa. Peak traffic volumes on McKinley Avenue would increase between 42 and 46 percent from future no-build to future build conditions.

Table 2.27 Change in Regional Carbon Dioxide Emissions

Project	Daily Carbon Dioxide Emissions (Metric Tons/Year)	Increase from No-Build (Metric Tons/Year)	Percent Increase From No-Build
2012 Existing	72,106	--	--
2040 without Project	195,465	--	--
2040 with Project	196,610	1,145.2	0.6

Source: Air Quality Analysis, Table 11: Change in Regional Carbon Dioxide Emissions, pg. 36, June 2014. This analysis uses the daily emissions from Table 30 and assumes 347 days per year as recommended by CARB to account for reduced vehicle activity on weekends. This analysis methodology is in compliance with the Pavley and Low Carbon Fuel Standard Post-Processor User's Guide: <http://www.arb.ca.gov/cc/sb375/tools/pavleycfs-userguide.pdf>.

As shown above in Table 2.27, implementation of the project would result in an incremental increase in regional carbon dioxide emissions of 1,145 tons per year in 2040 when comparing the future build conditions to the future no-build conditions. The cumulative contribution of daily carbon dioxide resulting from project implementation would be a small incremental increase to the region. Minimization measures identified below would be implemented to reduce this incremental increase.

California Environmental Quality Act Conclusion

Implementation of the project would result in a slight increase in greenhouse gas emissions during construction and operations. Based on the project resulting in increased capacity and additional anticipated vehicle trips, Caltrans anticipates that greenhouse gas emissions would increase in the future build-out with project conditions when compared to the future build-out conditions with no project.

It is Caltrans' determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and California Environmental Quality Act significance, it is too speculative to make a determination regarding significance of the project's direct impacts and its cumulative contribution to climate change. However, Caltrans is firmly committed to implementing mitigation measures to help reduce the potential contributions to climate change due to project implementation. These measurements are outlined below.

2.6.1.2 Greenhouse Gas Reduction Strategies

Assembly Bill 32 Compliance

Caltrans continues to be actively involved on the Governor's Climate Action Team as California Air Resources Board works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in Assembly Bill 32. Many of the strategies Caltrans has implemented to help meet the targets in Assembly Bill 32 come from the California Strategic Growth Plan, which is updated each year. Former Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a \$222 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and waterways, including \$100.7 billion in transportation funding during the next decade. The Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in greenhouse gas emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that when combined together are expected to reduce congestion. The Strategic Growth Plan relies on a complete systems approach to attain carbon dioxide reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as shown in Figure 2.22.

Figure 2.22 Mobility Pyramid¹³



Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. Caltrans works closely with local jurisdictions on planning activities but does not have local land use planning authority. Caltrans assists efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; Caltrans is doing this by supporting ongoing research efforts at universities, by supporting legislative efforts to increase fuel economy, and by its participation on the Climate Action Team. It is important to note, however, that the control of the fuel economy standards is held by the Environmental Protection Agency and California Air Resources Board. Table 2.28 summarizes the departmental and statewide efforts that Caltrans is implementing to reduce greenhouse gas emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (December 2006).

¹³ California Department of Transportation, Standard Environmental Reference, <http://www.dot.ca.gov/ser/>. Forms and Templates, IS/EA Annotated Outline (posted 8-13-13). Accessed May 2013.

To the extent that it is applicable or feasible for the project and through coordination with the Project Development Team, the following measures would also be included in the project to reduce the greenhouse gas emissions and potential climate change impacts from the project:

1. Landscaping reduces surface warming and through photosynthesis, decreases carbon dioxide. Landscaping would be provided where necessary within the corridor to provide aesthetic treatment, replacement planting, or mitigation planting for the project. The landscape planting would help offset any project carbon dioxide emissions;
2. The project would incorporate the use of energy-efficient lighting, such as light-emitting diode traffic signals, to the extent feasible. Light Emitting Diode bulbs can cost between \$60 to \$70 each but last 5 to 6 years. This is compared to a 1-year average lifespan of the incandescent bulbs previously used. The Light Emitting Diode bulbs themselves consume 10 percent of the electricity of traditional lights, which would also help reduce the project's carbon dioxide emissions; and
3. According to Caltrans Standard Specification Provisions, idling time for lane closure during construction is restricted to ten minutes in each direction. In addition, the contractor shall comply with Title 13, California Code of Regulations Section 2449(d)(3), adopted by the California Air Resources Board on June 15, 2008. This regulation restricts idling of construction vehicles to no longer than 5 consecutive minutes. Compliance with this regulation would reduce harmful emissions from diesel-powered construction vehicles.

Table 2.28 Climate Change Strategies

Strategy	Program	Partnership		Method/Process	Estimated carbon dioxide Savings (Million miles Traveled)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review	Caltrans	Local Gov.	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements and Intelligent Transportation System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	0.07	2.17
Mainstream Energy & greenhouse gas into Plans and Projects	Office of Policy Analysis and Research; Division of Environmental Analysis	Independent effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational and Information Program	Office of Policy Analysis and Research	Interdepartmental CalEPA, California Air Resources Board, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening and Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20, B100.	0.0045	0.0065 0.045 0.0225
Non-Vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	0.34
Portland Cement	Office of rigid Pavement	Cement and Construction Industries		2.5 percent limestone cement mix; 25 percent fly ash cement mix; > 50 percent fly ash/slag mix	1.2 0.36	4.2 3.6
Goods movement	Office of Goods Movement	CalEPA, California Air Resources Board, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total	--	--	--	--	2.73	18.18

Source: Caltrans, 2009. Standard Environmental Reference. July.

Adaptation Strategies. “Adaptation strategies” refer to how Caltrans and others can plan for the effects of climate change on the state’s transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the White House Council on Environmental Quality, the Office of Science and Technology Policy, and the National Oceanic and Atmospheric Administration, released its interagency task force progress report on October 28, 2011,¹⁴ outlining the federal government's progress in expanding and strengthening the Nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provides an update on actions in key areas of federal adaptation, including: building resilience in local communities, safeguarding critical natural resources such as freshwater, and providing accessible climate information and tools to help decision-makers manage climate risks.

Climate change adaptation must also involve the natural environment as well. Efforts are underway on a statewide-level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, then-Governor Arnold Schwarzenegger signed Executive Order S-13-08, which directed a number of state agencies to address California’s vulnerability to sea level rise caused by climate change. This Executive Order set in motion several agencies and actions to address the concern of sea level rise.

In addition to addressing projected sea level rise, the California Natural Resources Agency (Resources Agency) was directed to coordinate with local, regional, state and

¹⁴ <http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation>

federal public and private entities to develop The California Climate Adaptation Strategy (December 2009)¹⁵ which summarizes the best-known science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and then outlines solutions that can be implemented within and across state agencies to promote resiliency.

The strategy outline is in direct response to Executive Order S-13-08 that specifically asked the Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. Numerous other state agencies were involved in the creation of the Adaptation Strategy document, including the California Environmental Protection Agency; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The document is broken down into strategies for different sectors that include: public health; biodiversity and habitat; ocean and coastal resources; water management; agriculture; forestry; and transportation and energy infrastructure. As data continues to be developed and collected, the State's adaptation strategy will be updated to reflect current findings.

The National Academy of Science was directed to prepare a Sea Level Rise Assessment Report¹⁶ to recommend how California should plan for future sea level rise. The report was released in June 2012 and included:

- Relative sea level rise projections for California, Oregon, and Washington, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates.
- Range of uncertainty in selected sea level rise projections.
- Synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems.
- Discussion of future research needs regarding sea level rise.

¹⁵ <http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF>

¹⁶ Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future (2012) is available at http://www.nap.edu/catalog.php?record_id=13389.

In 2010, interim guidance was released by the Coastal Ocean Climate Action Team (CO-CAT) as well as Caltrans as a method to initiate action and discussion of potential risks to the state's infrastructure due to projected sea level rise. Subsequently, CO-CAT updated the Sea Level Rise guidance to include information presented in the National Academy's Study.

All state agencies that are planning to construct projects in areas vulnerable to future sea level rise are directed to consider a range of sea level rise scenarios for the years 2050 and 2100 to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. Sea level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data.

All projects that have filed a Notice of Preparation as of the date of Executive Order S-13-08, and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects may but are not required to, consider these planning guidelines. The project is outside the coastal zone, and direct impacts to the transportation facilities due to projected sea level rise are not expected.

Executive Order S-13-08 also directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level rise affecting safety, maintenance and operational improvements of the system, and economy of the state. Caltrans continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, Caltrans is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change effects, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, Caltrans will be able review its current design standards to determine what changes, if any, may be needed to protect the transportation system from sea level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is an active participant in the efforts being made in response to Executive Order S-13-08 and is

mobilizing to be able to respond to the National Academy of Sciences Sea Level Rise Assessment Report.

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Chapter 3 Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation, the level of analysis required, and to identify potential impacts and mitigation measures and related environmental requirements. Agency consultation and public participation for the proposed project have been accomplished through a variety of formal and informal methods, including: project development team meetings and interagency coordination meetings. Additionally, local groups and individuals were notified of the project and invited to comment.

This chapter summarizes the results of the City of Manteca's and Caltrans' efforts to identify, address, and resolve project-related issues through early and continuing coordination.

3.1 Public Agencies

Agencies were formally or informally contacted and consulted during the preparation of this environmental document. Additionally, local groups and individuals were notified of the project and invited to comment. All relevant federal, state, and local agencies, organizations, and other interested entities and individuals will receive a Notice of Availability of this environmental document.

3.1.1 Coordination Regarding Cultural Resources

Native American Consultation. The Native American Heritage Commission was contacted on September 26, 2012 to request that they review their Sacred Lands File for any resources that might be affected by the project. Native American Heritage Commission Environmental Specialist III, Debbie Pilas-Treadway, informed LSA in a fax dated October 2, 2012 that a records search of the Sacred Lands File “failed to indicate the presence of Native American cultural resources in the immediate project area.” Ms. Pilas-Treadway also provided a list of Native American contacts.

On October 5, 2012, LSA sent letters describing the project with maps showing the Area Potential Effects to the three Native American representatives on the contact list, requesting any information or concerns they might have regarding the Area of Potential Effects. No responses to the letters were received after two weeks, so LSA made follow-up telephone calls to Anthony Brochini, Chairperson, Southern Sierra Miwuk Nation and Les James, Spiritual Leader, Chairperson, Southern Sierra Miwuk

Nation. No response has been received to date. Kathy Perez, Ohlone/Costanoan, Northern Valley Yokuts, and Bay Miwok representative requested to be present during the archaeological survey and accompanied LSA's survey crew in the field.

On August 8, 2013, 13 Native American representatives on a list provided by Caltrans were contacted by letter and email to request any comments or information they might have regarding cultural resources that might be affected by the project. They each have been provided with a draft Archaeological Survey Report for their review and comment.

Three local historical organizations were contacted to request any comments or information they might have regarding cultural resources that might be affected by the project.

The following provides a summary of the responses received from each of the Native American tribal representatives:

- On August 8, 2013, LSA sent letters to the Native Americans on a list provided by Caltrans Native American coordinator Tina Fulton to inform them of the upcoming XPI fieldwork. No response to the letter or a follow-up call has been received from Cultural Committee Chair Anthony Burris, Ione Band of Miwok Indians, Randy Yonemura, Ione Band of Miwok Indians, Honorable Chairwoman Yvonne Miller, Ione Band of Miwok Indians and the Ione Cultural Heritage Committee, and Anthony Brochini, former chairperson, South Sierra Nation, Jay Johnson, Spiritual Leader, Southern Sierra Miwuk Nation, and Honorable Chairperson Andrew Franklin, Wilton Rancheria.
- On August 13, 2013, LSA received an email from Roselynn Lwenya, Ph.D., THPO/Environmental Resources Director, Buena Vista Rancheria Me-Wuk Indians, stating the following: "Currently, we do not have any knowledge concerning cultural resources within the APE. However, we would like you to furnish us with more information concerning the project. In addition, we would like to request for a copy of the Archeological Survey Report." On August 22, 2013, LSA sent an email message to Dr. Lwenya stating the following: "Additional information regarding the project is available in the project's draft Archaeological Survey Report. I will put a copy of the report in the mail for your review and comment." On August 22, 2013, LSA mailed a copy of the report to Dr. Lwenya. No response has been received to date. On October 3, 2013, LSA emailed Dr. Lwenya an update that reported the negative findings of the Extended Phase I fieldwork.

- During an August 23, 2013 telephone conversation between Chairwoman Lois Martin, South Sierra Miwuk Nation and LSA archaeologist Neal Kaptain, Chairwoman Martin stated that she has no concerns regarding the project as she is not aware of any “sites or findings” there. She also stated, “the tribe is always interested if something is found.”
- During an August 23, 2013 telephone conversation between Leland Daniels, Cultural Resources Representative, Wilton Rancheria, and LSA archaeologist Neal Kaptain, Mr. Daniels stated that he had provided the letter to Executive Department Director Steven Hutchason, and that Mr. Hutchason is in charge of responding to such correspondence. LSA left a voice message for Mr. Hutchason requesting any comments or concerns he might have regarding the project. No response has been received to date.
- As Chairperson Katherine Erolinda Perez, Nototumne/Northern Valley Yokuts assisted in the field survey, she was invited by LSA, in coordination with Caltrans, to be present during the upcoming XPI excavations. On August 8, 2013, LSA sent Chairperson Perez an email thanking her for her agreeing to participate as a monitor during the XPI fieldwork.
- On August 26, 2013, LSA received an email from Honorable Chairperson Silvia Burley, California Valley Miwok Tribe, directing LSA to contact tribal Cultural Consultant Rose Mose. At Ms. Mose’s request, LSA met with Ms. Mose in the APE on September 3, 2013 to discuss the project and provided her with a copy of the draft Archaeological Survey Report. On September 14, 2013, Chairperson Burley sent LSA a letter and email stating “the California Valley Miwok Tribe is the only federally recognized Tribe in San Joaquin County, CVMT wishes to engage in direct government-to-government consultation regarding this proposed project.” Chairperson Burley also stated “the California Valley Miwok Tribe will have Ms. Rose Mose represent the interest of CVMT” and that “CVMT is a custom and tradition tribe, and the Miwok interest must be protected.”

On September 18, 2013, LSA sent Chairperson Burley an email stating that her email and letter were sent to Caltrans District 10 Native American Coordinator, Tina Fulton, and that Caltrans “makes a reasonable and good faith effort to identify those properties. Part of that identification is talking with those who have knowledge of the project area, including individuals, groups, and tribes, regardless of status of recognition. Consultation will occur and continue for the life of this project, to seek information about, knowledge of, and concerns about historic properties that may potentially be in the project area. Consultation so far

has not revealed any knowledge about historic properties in the project area. The proposed XPI scheduled for the last week of September will move forward with Native American monitoring. I would like to make arrangements to have Rose Mose monitor to represent the California Valley Miwok and to have Katherine Perez monitor to represent the Northern Valley Yokuts. The one position will be split between the two individuals if both parties agree to this. We anticipate the XPI fieldwork taking place on September 24 and 25. I would like to have Ms. Perez monitor on September 24 and Ms. Mose monitor on September 25. There is a slight chance the work might extend longer that week—we will split the extra work between both parties. I have attached Gary Winter’s 2003 memorandum on Native American monitors, to address your concerns regarding status of recognition and Caltrans consultation. Coordination with chairpersons Perez and Burley resulted in both tribes being represented during the XPI fieldwork.”

Historical Society Consultation. Caltrans contacted the following historical societies and museum regarding the project, as described below:

- On October 5, 2012, LSA sent a letter and maps showing the Area of Potential Effects to the Haggin Museum and the Manteca Historical Society and Museum and made follow-up calls requesting any information or concerns about the Area of Potential Effects. No response to the letter was received. No responses have been received.
- On October 5, 2012, LSA sent a letter and maps showing the Area of Potential Effects to the San Joaquin County Historical Society and Museum requesting any information or concerns about the project’s potential to affect historic properties. In an October 16, 2012 email to LSA, the society acknowledged receipt of the letter and stated that it had a “small box of historical information related to the [El Pescadero] land grant that may influence your evaluation of historic-era resources in the area.” These materials were not germane to identifying historic properties due to the distance of El Pescadero from the Area of Potential Effects (across the San Joaquin River and about 2 miles west of the Area of Potential Effects); therefore, these materials were not reviewed to allocate greater time to those materials that directly pertain to the Area of Potential Effects.

3.1.2 State Historic Preservation Office

The Archaeological Survey Report for the project was completed on October 7, 2013, and an Extended Phase 1 Proposal was completed in January 2014. A Historic Proper Survey Report and a Paleontological Resources Identification and Evaluation Report

for the proposed project were completed in January 2014. The above-mentioned reports have been submitted to the State Historic Preservation Officer, and a concurrence letter agreeing with the results of the reports was received the week of March 31, 2014 (the State Historic Preservation Officer concurrence letter is provided in Appendix F).

3.1.2.1 California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and San Joaquin Council of Governments

On February 14, 2013, a conference call was held to discuss using the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan for the project. Attendees included Josh Emery (U.S. Fish and Wildlife Service), Todd Gardner (California Department of Fish and Wildlife), Steve Mayo and Laurel Boyd (San Joaquin Council of Governments), Katayoon Samadi, Frank Meraz, and Scott Smith (Caltrans), and Jeff Bray and Edward Heming (LSA). It was determined that the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan could be used for the project and that a field meeting should be scheduled to review the site.

A field meeting was held on the project site on March 13, 2013 to review the habitat on the site for the California tiger salamander and other listed species and discuss potential Incidental Take Minimization Measures. Attendees included Josh Emery and Jen Schofield (U.S. Fish and Wildlife Service), Todd Gardner (California Department of Fish and Wildlife), Steve Mayo and Laurel Boyd (San Joaquin Council of Governments), Frank Meraz (Caltrans), and Jeff Bray (LSA). It was agreed that the U.S. Fish and Wildlife Service would confer internally and then draft Incidental Take Minimization Measures for the California tiger salamander.

3.1.2.2 Environmental Protection Agency/Federal Highway Administration Concurrence

On June 24, 2014 the City of Manteca Public Works Department prepared a memo that was sent to the Interagency Consultation Partners to concur that the proposed project is not a “Project of Air Quality Concern”. The Interagency Consultation Partners reviewed the memo and on June 30, 2014 (through an email transmission) the Environmental Protection Agency concurred that the proposed Project was not a “Project of Air Quality Concern.” On July 1, 2014, the Federal Highway Administration (through an email transmission) indicated that the proposed Project was not a “Project of Air Quality Concern”. The Interagency Consultation Partners process was thus completed on July 1, 2014.

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Chapter 4 List of Preparers

4.1 Preparers

The Initial Study/Environmental Assessment is based on the technical studies prepared for Caltrans, Federal Highway Administration, and City of Manteca. This document was prepared by the following individuals:

CALTRANS

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Stephanie Powers, Word Processor

Neal Kaptain, Associate Archaeologist

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Brooks Smith, Associate

CITY OF MANTECA

FEHR AND PEERS – DRAFT TRAFFIC REPORT

John Gard, Registered Professional Traffic Engineer

**RAJAPPAN AND MEYER CONSULTING ENGINEERS, INC – SUMMARY
FLOODPLAIN ENCROACHMENT REPORT AND LOCATION
HYDRAULIC STUDY FORM**

Martha M. Dadala, Consulting Hydraulic Engineer

GEOCON CONSULTANTS, INC – INITIAL SITE ASSESSMENT

Chris Giuntoli, Senior Project Scientist

John E. Juhrend, Principal/Senior Engineer

Chapter 5 Distribution List

The following officials, agencies, and interested parties have received either a copy of the environmental document or a notice informing them of its availability.

5.1 Federal Agencies

- United States Army Corps of Engineers
- United States Fish and Wildlife Service

5.2 State Agencies

- California Air Resources Board
- California Highway Patrol
- California Department of Transportation, Planning (Headquarters)
- California Department of Conservation – Reclamation Board, Farmland Mapping and Monitoring Program Division, Land Resources Protection Division
- California Department of Education
- California Energy Commission
- California Department of Fish and Wildlife North Central Region (2)
- California Housing and Community Development
- California Integrated Waste Management Board
- California Native American Heritage Commission
- California Office of Emergency Services
- California Office of Historic Preservation
- California Parks and Recreation
- California Public Utilities Commission
- California Regional Water Quality Control Board District 5 Sacramento
- California Natural Resources Agency
- California State Lands Commission
- California Department of Toxic Substances
- California Department of Water Resources
- California Highway Patrol – Business Office
- Delta Protection Commission
- San Joaquin River Conservancy
- State Water Resources Control Board: Storm Water Regional Control Board:
Water Quality

5.3 Regional Agencies

- San Joaquin Regional Transit District
- San Joaquin Council of Governments

5.4 County Agencies

- County of San Joaquin, Community Development Department
- County of San Joaquin, Public Works Department
- County of San Joaquin, Parks and Recreation Department
- San Joaquin County Office of Emergency Services
- San Joaquin County Hispanic Chamber of Commerce
- San Joaquin County Sheriff's Department

5.5 City of Manteca Agencies

- City of Manteca Community Development Division
- City of Manteca Economic Development Division
- City of Manteca Fire Department
- City of Manteca Transit Department
- City of Manteca Parks and Recreation Department
- City of Manteca Police Department
- City of Manteca Public Works Department

5.6 Other Interested Parties

- Honorable Chairperson Silvia Burley, California Valley Miwok Tribe
- Honorable Chairwoman Yvonne Miller, Ione Band of Miwok Indians and the Ione Cultural
- Honorable Chairwoman Rhonda Morningstar-Pope, Buena Vista Rancheria Me-Wuk Indians
- Ms. Roselynn Lwenya, Ph.D, THPO/Environmental Resources Director, Buena Vista Rancheria Me-Wuk Indians
- Mr. Randy Yonemura, Ione Band of Miwok Indians
- Mr. Anthony Burris, Cultural Heritage Committee Chair, Ione Band of Miwok Indians
- Ms. Katherine Erolinda Perez, Chairperson, Nototomne / Northern Valley Yokuts Tribe
- Ms. Lois Martin, Chairwoman, Southern Sierra Miwuk Nation

- Mr. Anthony Brochini (former Chairperson), Southern Sierra Miwuk Nation
- Mr. Jay Johnson, Spiritual Leader, Southern Sierra Miwuk Nation Attention
- Mr. Les James, Spiritual Leader, Southern Sierra Miwuk Nation
- Honorable Chairperson Andrew Franklin, Wilton Rancheria
- Mr. Leland Daniels, Cultural Resources Representative, Wilton Rancheria

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Appendix A California Environmental Quality Act Checklist

Supporting documentation of all California Environmental Quality Act checklist determinations is provided in Chapter 2 of this Administrative Draft Initial Study/Environmental Assessment. Documentation of “No Impact” determinations is provided at the beginning of Chapter 2. Discussion of all impacts, avoidance, minimization, and/or mitigation measures are under the appropriate topic headings in Chapter 2.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

IV. BIOLOGICAL RESOURCES: Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VI. GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VII. GREENHOUSE GAS EMISSIONS: Would the project:				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
IX. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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 flooding on- or off-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
XI. MINERAL RESOURCES: Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XII. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XIII. POPULATION AND HOUSING: Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

XIV. PUBLIC SERVICES:

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XV. RECREATION:

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XVI. TRANSPORTATION/TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE:				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix B Title VI Policy Statement

DEPARTMENT OF TRANSPORTATION
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*Flex your power!
Be energy efficient!*

March 2013

NON-DISCRIMINATION POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact the California Department of Transportation, Office of Business and Economic Opportunity, 1823 14th Street, MS-79, Sacramento, CA 95811. Telephone: (916) 324-0449, TTY: 711, or via Fax: (916) 324-1949.

A handwritten signature in blue ink, appearing to read "Malcolm Dougherty".

MALCOLM DOUGHERTY
Director

"Caltrans improves mobility across California"

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Appendix C Summary of Relocation Benefits

C.1 California Department of Transportation Relocation Assistance Program

C.1.1 Relocation Assistance advisory services

C.1.1.1 Declaration of Policy

“The purpose of this title is to establish a *uniform policy for fair and equitable treatment* of persons displaced as a result of federal and federally assisted programs in order that such persons *shall not suffer disproportionate injuries* as a result of programs designed for the benefit of the public as a whole.”

The Fifth Amendment to the U.S. Constitution states, “No Person shall...be deprived of life, liberty, or property, without due process of law, nor shall private property be taken for public use without just compensation.” The Uniform Act sets forth in statute the due process that must be followed in Real Property acquisitions involving federal funds. Supplementing the Uniform Act is the government-wide single rule for all agencies to follow, set forth in 49 Code of Federal Regulations Part 24. Displaced individuals, families, businesses, farms, and nonprofit organizations may be eligible for relocation advisory services and payments, as discussed below.

C.1.1.2 Fair Housing

The Fair Housing Law (Title VIII of the Civil Rights Act of 1968) sets forth the policy of the United States to provide, with constitutional limitations, for fair housing. This act, and as amended, makes discriminatory practices in the purchase and rental of most residential units illegal. Whenever possible, minority persons shall be given reasonable opportunities to relocate to any available housing regardless of neighborhood, as long as the replacement dwellings are decent, safe, sanitary and are within their financial means. This policy, however, does not require Caltrans to provide a person a larger payment than is necessary to enable a person to be relocated to a comparable replacement dwelling.

Any persons to be displaced will be assigned to a relocation advisor, who will work closely with each displacee order to see that all payments and benefits are fully used and that all regulations are observed, thereby avoiding the possibility of displacees jeopardizing or forfeiting any of their benefits or payments. At the time of the

initiation of negotiations (usually the first written offer to purchase), owner-occupants are given a detailed explanation of the state's relocation services. Tenant occupants of properties to be acquired are contacted soon after the initiation of negotiations and also are given a detailed explanation of the Caltrans Relocation Assistance Program. To avoid loss of possible benefits, no individual family, business, farm or nonprofit organization should commit to purchase or rent a replacement property without first contacting a Caltrans relocation advisor.

C.1.1.3 Relocation Assistance Advisory Services

In accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, Caltrans will provide relocation advisory assistance to any person, business, farm or nonprofit organization displaced as a result of the acquisition of real property for public use, so long as they are legally present in the United States. Caltrans will assist eligible displacees in obtaining comparable replacement housing by providing current and continuing information of the availability and prices of both houses for sale and rental units that are "decent, safe and sanitary." Nonresidential displacees will receive information on comparable properties for lease or purchase (for business, farm and nonprofit organization relocation services, see below).

Residential replacement dwellings will be in a location generally not less desirable than the displacement neighborhood at prices or rents within the financial ability of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, comparable replacement dwellings will be offered to displacees that are open to all persons regardless of race, color, religion, sex, national origin, and consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance will also include the supplying of information concerning federal and state assisted housing programs and any other known services being offered by public and private agencies in the area.

Persons who are eligible for relocation payments and who are legally occupying the property required for the project will not be asked to move without first being given at least 90 days written notice. Residential occupants eligible for relocation payment(s) will not be required to move unless at least one comparable "decent, safe and sanitary" replacement dwelling, available on the market, is offered to them by Caltrans.

C.1.1.4 Residential Relocation Payments

The Relocation Assistance Program will help establish residential occupants by paying certain costs and expenses. These costs are limited to those necessary for or incidental to the purchase or rental of a replacement dwelling and actual reasonable moving expenses to a new location with 50 miles of the displacement property. Any actual moving costs in excess of the 50 miles are the responsibility of the displacee. The Residential Relocation Assistance Program can be summarized as follows:

Moving Costs

Any displaced person, who lawfully occupied the acquired property, regardless of the length of occupancy in the property acquired, will be eligible for reimbursement of moving costs. Displacees will receive either the actual reasonable costs involved in moving themselves and personal property up to a maximum of 50 miles, or a fixed payment based on a fixed moving cost schedule. Lawful occupants who moved into the displacement property after the initiation of negotiations must wait until the Department obtains control of the property in order to be eligible for relocation payments.

Purchase Differential

In addition to moving and related expense payments, fully eligible homeowners may be entitled to payments for increased costs of replacement housing.

Homeowners who have owned and occupied their property for 180 days or more prior to the date of the initiation of negotiations (usually the first written offer to purchase the property), may qualify to receive a price differential payment and may qualify to receive reimbursement for certain nonrecurring costs incidental to the purchase of the replacement property. An interest differential payment is also available if the interest rate for the loan on the replacement dwelling is higher than the loan rate on the displacement dwelling, subject to certain limitations on reimbursement based upon the replacement property interest rate. The maximum combination of these three supplemental payments that the owner-occupant can receive is \$22,500. If the total entitlement (without the moving payments) is in excess of \$22,500, the Last Resort Housing Program will be used (see the explanation of the Las Resort Housing Program below).

Rent Differential

Tenants and certain owner-occupants (based on length of ownership) who have occupied the property to be acquired by Caltrans prior to the date of the initiation of

negotiations may qualify to receive a rent differential payment. This payment is made when Caltrans determines that the cost to rent a comparable “decent, safe and sanitary” replacement dwelling will be more than the present rent of the displaced dwelling. As an alternative, the tenant may qualify for a down payment benefit designed to assist in the purchase of a replacement property and the payment of certain costs incidental to the purchase, subject to certain limitations noted under the *Down Payment* section below. The maximum amount payable to any eligible tenant and any owner-occupant of less than 180 days, in addition to moving expenses is \$5,250. If the total entitlement for rent supplement exceeds \$5,250, the Last Resort Housing Program will be used.

To receive any relocation benefits, the displaced person must buy or rent and occupy a “decent, safe and sanitary” replacement dwelling within one year from the date the Department takes legal possession of the property, or from the date the displacee vacates the displacement property, whichever is later.

Down Payment

The down payment option has been designed to aid owner-occupants of less than 180 days and tenants in legal occupancy prior to Caltrans’ initiation of negotiations. The down payment and incidental expenses cannot exceed the maximum payment of \$5,250. The one-year eligibility period in which to purchase and occupy a “decent, safe and sanitary” replacement dwelling will apply.

Last Resort Housing

Federal regulations (49 Code of Federal Regulations 24) contain the policy and procedure for implementing the Last Resort Housing Program on federal-aid projects. Last Resort Housing benefits are, except for the amounts of payments and the methods in making them, the same as those benefits for standard residential relocation as explained above. Last Resort Housing has been designed primarily to cover situations where a displacee cannot be relocated because of lack of available comparable replacement housing, or when the anticipated replacement housing payments exceed the \$22,500 and \$5,250 limits of the standard relocation procedure, because either the displacee lacks the financial ability or other valid circumstances.

After the initiation of negotiations, Caltrans will within a reasonable length of time, personally contact the displacees to gather important information, including the following:

- Number of people to be displaced.

- Specific arrangements needed to accommodate any family member(s) with special needs.
- Financial ability to relocate into comparable replacement dwelling which will adequately house all members of the family.
- Preferences in area of relocation.
- Location of employment or school.

C.1.1.5 Nonresidential Relocation Assistance

The Nonresidential Relocation Assistance Program provides assistance to businesses, farms, and nonprofit organizations in locating suitable replacement property, and reimbursement for certain costs involved in relocation. The Relocation Advisory Assistance Program will provide current lists of properties offered for sale or rent, suitable for a particular business's specific relocation needs. The types of payments available to eligible businesses, farms, and nonprofit organizations are: searching and moving expenses, and possibly reestablishment expenses; or a fixed in lieu payment instead of any moving, searching and reestablishment expenses. The payment types can be summarized as follows:

Moving Expenses

Moving expenses may include the following actual, reasonable costs:

- The moving of inventory, machinery, equipment and similar business-related property, including: dismantling, disconnecting, crating, packing, loading, insuring, transporting, unloading, unpacking, and reconnecting of personal property. Items acquired in the right-of-way contract may not be moved under the Relocation Assistance Program. If the displacee buys an Item Pertaining to the Realty back at salvage value, the cost to move the item is borne by the displacee.
- Loss of tangible personal property provides payment for actual, direct loss of personal property that the owner is permitted not to move.
- Expenses related to searching for a new business site, up to \$2,500, for reasonable expenses actually incurred.

Reestablishment Expenses

Reestablishment expenses related to the operation of the business at the new location, up to \$10,000 for reasonable expenses actually incurred.

Fixed In Lieu Payment

A fixed payment in lieu of moving, searching, and reestablishment payments may be available to businesses that meet certain eligibility requirements. This payment is an amount equal to half the average annual net earnings for the last two taxable years prior to the relocation and may not be less than \$1,000 nor more than \$20,000.

C.1.1.6 Additional Information

Reimbursement for moving costs and replacement housing payments are not considered income for the purpose of the Internal Revenue Code of 1954, or for the purpose of determining the extent of eligibility of a displacee for assistance under the Social Security Act, or any other law, *except* for any federal law providing local “Section 8” Housing Programs.

Any person, business, farm, or nonprofit organization that has been refused a relocation payment by the Caltrans relocation advisor or believes that the payment(s) offered by the agency are inadequate may appeal for a special hearing of the complaint. No legal assistance is required. Information about the appeal procedure is available from the relocation advisor.

California law allows for the payment for lost goodwill that arises from the displacement for a public project. A list of ineligible expenses can be obtained from Caltrans Right-of-Way. California’s law and the federal regulations covering relocation assistance provide that no payment shall be duplicated by other payments being made by the displacing agency.

C.1.2 Residential Relocation Payments Program

For more information or a brochure on the residential relocation payments program, please contact **(Mark Houghton City of Manteca Public Works, (209) 553-5601)**

The brochure on the residential relocation payments program is also available in English and Spanish at:

- http://www.dot.ca.gov/hq/row/pubs/residential_english.pdf
- http://www.dot.ca.gov/hq/row/pubs/residential_spanish.pdf

C.1.3 The Business and Farm Relocation Assistance Program

For more information or a brochure on the business and farm relocation assistance program, please contact **(Mark Houghton City of Manteca Public Works, (209) 553-5601)**

The brochure on the business and farm relocation assistance program is also available in English at:

- http://www.dot.ca.gov/hq/row/pubs/business_farm.pdf.
- http://www.dot.ca.gov/hq/row/pubs/business_sp.pdf.

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Appendix D Minimization and/or Mitigation Summary

The information provided in Appendix D includes a summary of the avoidance, minimization, or mitigation measures that would be implemented as a result of the project development.

D.1 Relocations and Real Property Acquisition

The following measures would be implemented to address property displacements and relocations associated with the project.

Avoidance Measures: None.

Minimization Measures: The following minimization measures would be implemented.

RELO-1: All businesses and residents being displaced shall be contacted by a Relocation Agent who shall ensure that eligible displaced businesses and residences receive their full relocation benefits including advisory assistance and that all activities shall be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Relocation resources shall be available to all displacees free of discrimination. At the time of the first written offer to purchase, owner occupants shall be given a detailed explanation of City of Manteca’s “Relocation Program and Services.” Tenant occupants of properties to be acquired shall be contacted after the first written offer to purchase and also shall be given a detailed explanation of City of Manteca’s “Relocation Program and Services.” In accordance with the Uniform Relocation Assistance and Real Property and Real Property Acquisition Policies Act of 1970, as amended, City of Manteca shall provide relocation advisory assistance to any persons, business, farm, or non-profit organization displaced as a result of acquisition of real property for public use due to implementation of the proposed project.

RELO-2: The Uniform Relocation Assistance and Real Property Acquisitions Policies Act (Uniform Act) of 1970 (Public Law 91-646, 84 Stat.

1894) mandates that payments shall be made available to eligible residents, businesses, and non-profit organizations displaced or affected by public use development projects. The Uniform Act provides equitable land acquisition policies and shall be used for the acquisition of the 28 parcels associated with the proposed project.

RELO-3: Where acquisition is unavoidable, the provisions of the Uniform Act and the 1987 Amendments as implemented by the Uniform Relocation Assistance and Real Property Acquisition Regulations for Federal and Federally Assisted Programs adopted March 2, 1989 shall be followed. An independent appraisal of the 28 affected properties shall be obtained, and an offer for the full appraisal shall be made prior to final project approval.

RELO-4: The City of Manteca's Relocation Assistance Agents assigned to the affected residents and business owner shall perform some or all of the following activities to ensure a smooth relocation process:

- Provide data to the Environmental Unit as needed;
- Participate in the preparation of the Final Relocation Impact Statement or Document;
- Request Parcel Occupancy Data Sheets from the Appraisal Units;
- Coordinate first City of Manteca Relocation Assistance Program call with presentation of First Written Offer by Acquisition Unit;
- Provide Advisory Assistance as needed to all displacees and potential displacees;
- Conduct an assessment of displacees financial abilities;
- Determine the current family housing needs of the displacees and potential displacees;
- Conduct replacement housing searches;
- Prepare and submit 30-day and 90-day notices and deliver in a timely manner;
- Assist displacees with document preparation and coordination of interpreters as needed;
- Coordinate moving from displacement to replacement dwellings; and
- Coordinate personal property moves.

Mitigation Measures: The minimization measures identified above would satisfy the mitigation requirements for the California Environmental Quality Act – Population and Housing.

D.2 Utilities/Emergency Services

A number of utilities for water, wastewater, electric, natural gas, and telecommunications services are within the area of the proposed project. Construction activities associated with development of the project may require the relocation of utilities that would be affected by project implementation. These relocations should not present any unusual situations and are considered routine for roadway construction projects. Implementation of the following measures would reduce adverse effects to utilities and emergency services.

Avoidance: None.

Minimization Measures: The following minimization measures shall be implemented.

UT-1: The contractor shall be required to notify utility users of any short-term, limited interruptions of service.

UT-2: The contractor shall circulate construction schedules and traffic control information to Manteca emergency-service providers at least one to two weeks before any road closures.

Mitigation Measures: None.

D.3 Traffic and Transportation/Pedestrian and Bicycle Facilities

Implementation of the project would not adversely affect traffic and circulation during operation. However, the project would be required to implement the following measures to reduce construction related traffic impacts.

Avoidance Measures: None.

Minimization Measures: The following minimization measures shall be implemented during project construction.

TRA-1: The contractor shall be required to prepare and implement a Traffic Management Plan that shall identify the locations of temporary detours and signage to facilitate local traffic patterns and through-traffic requirements.

TRA-2: The project special provisions of the highway contract shall require that emergency service providers (i.e., law enforcement, fire protection, and ambulance services) are given adequate advance notice of any street closures during the construction phases of the proposed project.

TRA-3: Construction activities shall be coordinated to avoid blocking or limiting access to residential units and businesses to the extent possible. Residents and business owners shall be notified in advance about potential access or parking effects prior to the start of construction activities.

TRA-4: Any interchange, ramp, or road closures required during construction shall, to the extent possible, be limited to nighttime hours to reduce effects on businesses in the project area.

TRA-5: Construction activities shall be coordinated to avoid blocking or limiting access to businesses during business hours. Businesses shall be notified in advance concerning construction activities prior to their start.

TRA-6: The Transportation Management Plan shall be prepared and implemented to address short-term disruptions in existing circulation

patterns during construction; for example, the Transportation Management Plan shall identify the locations of temporary detours or temporary roads to facilitate local traffic circulation and through-traffic requirements.

Mitigation Measures: None.

D.4 Visual/Aesthetics

The inclusion of aesthetic features in the project design can help generate public acceptance of the project. This section describes additional measures to address specific visual impacts associated with project implementation. These measures would be designed and implemented with concurrence of the District Landscape Architect. The following measures would be implemented to reduce visual and aesthetic visual effects due to project implementation.

Avoidance Measures: None.

Minimization Measures: The following minimization measures would be implemented to reduce adverse visual and aesthetic effects to the area within and surrounding the project site.

AES-1: Structural surfaces (such as retaining walls and soundwalls if required) and the facades for overcrossing infrastructure shall be designed with an aesthetically pleasing treatment that reflects state-of-the-art type selection and engineering standards, consistent with existing and future construction features and roadway design within the surrounding area and community.

AES-2: Screen planting shall be required as a “visual screen” where feasible to minimize viewer impacts from the project. All plantings shall meet the requirement for Replacement Highway Planting as directed in the Caltrans Project Development Procedure Manual.

AES-3: Where feasible, landscape plantings shall be included on roadway slopes.

Mitigation Measures: None.

D.5 Cultural Resources

Regardless of whether significant historical or archaeological properties have been identified in the Area of Potential Effects, the following measures would be implemented in the event that cultural materials or human remains are found and identified during construction activities.

Avoidance Measures: None.

Minimization Measures: The following minimization measures shall be implemented if cultural resources are discovered during project construction activities:

- CULT-1:** Prior to any ground disturbance, a qualified archaeologist shall conduct a preconstruction meeting to orient the construction crew to the potential for encountering prehistoric archaeological deposits during construction. This instructional meeting would also include a discussion of the types of artifacts that could be encountered and the steps to take upon discovery to avoid inadvertent impacts to such finds.
- CULT-2:** If cultural materials are discovered during construction, all earth-moving activity within 33 feet of the find shall be diverted until a qualified archaeologist can assess the nature and significance of the find. If the cultural materials are Native American in origin, Native American groups shall be contacted.
- CULT-3:** If human remain are encountered during project activities, the project shall comply with the requirements of California Health and Safety Code Section 7050.5. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of San Joaquin County has determined the manner and cause of any death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his/her authorized representative. At the same time, an archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. Project personnel/construction workers shall not collect or move any human remains and associated materials. If the

human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission would identify a Native American Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

Mitigation Measures: The minimization measures identified above would satisfy the mitigation requirements for the California Environmental Quality Act - Cultural.

D.6 Water Quality and Stormwater Runoff

The following water quality and stormwater runoff measures would be implemented during construction of the project.

Avoidance Measures: None.

Minimization Measures: The following minimization measures shall be implemented to reduce adverse effects to water quality and stormwater runoff during project construction. Implementation of these minimization measures as well as construction Best Management Practices discussed in the Stormwater Pollution Prevention Plan would ensure that stormwater flows are conveyed and retained properly onsite and that surface water quality would not be adversely affected during construction activities.

- WQ-1:** A Stormwater Pollution Prevention Plan prepared by the project contractor shall be submitted to the Regional Water Quality Control Board 30 days prior to the start of construction activities. The Stormwater Pollution Prevention Plan is required because the project would create a Disturbed Soil Area totaling 55.5 acres (more than 1 acre of soil is being disturbed). Within the Stormwater Pollution Prevention Plan, the contractor shall develop Best Management Practices used during construction activities to reduce the amount of runoff that would avoid and reduce the potential impacts to water quality onsite and offsite. The Stormwater Pollution Prevention Plan shall be developed with site-specific Best Management Practices selected to employ the Best Available Technology to reduce or eliminate pollutants in construction site stormwater runoff.
- WQ-2:** The project contractor, thirty (30) days prior to the start of construction, shall develop and submit to the Regional Water Quality Control Board a Notice of Construction. Once construction is completed, the project contractor shall submit a Notice of Construction Completion to the Regional Water Quality Control Board.
- WQ-3:** All new drainage inlets located adjacent to pedestrian facilities along McKinley Avenue shall be marked with plaques, tiles, painted or pre-cast messages warning citizens not to dump pollutants into the drain. The messages shall be a simple phrase or graphic to remind those

passing by that the storm drains connect to local water bodies and that dumping will pollute those waters. Storm drain markers shall specify which water body the inlet drains to or name the particular river, lake, or bay. Messages that could be (but are not limited) used include: “No Dumping. Drains to Water Source.”; “Drains to River”; and/or “You Dump it, You Drink it. No Waste Here.” Stencil types and messages shall be approved by the Manteca Public Works Department and shall conform to similar design and types used throughout the City. During operation, the project would not discharge stormwater or pollutants to surface water bodies as there are none within or near the project site. All stormwater would be conveyed to 12 onsite retention basins that would be designed to collect and retain the estimated amount of runoff that would be generated during two consecutive 10-year 24-hour storm events. Additionally, Best Management Practices would be incorporated into the design of the project to reduce potential operational adverse effects to water quality and stormwater runoff. Therefore, operational minimization measures would not be required.

Mitigation Measures: The minimization measures identified above would satisfy the mitigation requirements for the California Environmental Quality Act – Hydrology and Water Quality.

D.7 Geology/Soils/Seismic/Topography

The project would be designed to incorporate recommendations and design features from the Preliminary Geotechnical Report to minimize adverse geologic affects.

Measures that would be incorporated include:

Avoidance Measures: None.

Minimization Measures: The following minimization measures shall be implemented.

GEO-1: Prior to final approval of the project, a geologist shall be retained to perform in-field investigations to evaluate the potential for liquefaction, seismic-induced settlement, and slope stability, as recommended in the *Preliminary Geotechnical Report*. The field investigation shall include shallow borings located along proposed roadway alignments and comparatively deeper borings near proposed structures. Laboratory testing of the borings shall include shear strength testing to evaluate various engineering properties of the existing site soils. Gradation and Atterberg Limits testing and other index testing shall also be performed to evaluate suitability of onsite material for backfill and corrosion testing shall be performed on boring samples from areas in the project limit where soils are expected to be in contact with proposed structures. If the project area is found to be susceptible to such geological conditions, the recommendations for project design discussed in the *Preliminary Geotechnical Report* and any additional recommendations made by the retained geologist shall be implemented as part of the final project design. Such recommendations in the design of the project shall be published in a *Foundation Report* (or *Final Geotechnical Report*), reviewed, and approved by Caltrans to ensure the final design of the project is compliant with Caltrans' standards for interchange development.

GEO-2: Deep foundations shall be required at the abutments for the new ramp bridge due to structural loading and soils conditions at the project site. Caltrans Class 90 or 140 Standard Alternative W or X driven piles are feasible and shall be used based on the investigated onsite soil conditions. Cast-in-drilled hole piles shall also be considered;

however, shallow groundwater and soils conditions would likely require that casing be used during construction.

Mitigation Measures: The minimization measures identified above would satisfy the mitigation requirements for the California Environmental Quality Act – Geology and Soils.

D.8 Paleontology

Because the Modesto Foundation runs throughout the Area of Potential Disturbance and surrounding area, there is no way to avoid it even if design changes are incorporated. So, to reduce direct or indirect impacts to nonrenewable paleontological resources that may be present, where excavation may take place in areas of undisturbed sediments, minimization measures would be implemented.

The minimization measure is to be implemented in areas identified as having a high paleontological sensitivity and would follow guidelines in the current Caltrans Standard Environmental Reference, Environmental Handbook, Volume 1, Chapter 8- Paleontology and recommendations from the Society of Vertebrate Paleontology prior to completion of final project design.

Avoidance Measures: None.

Minimization Measure: The following minimization measure would be implemented.

PAL-1: Prior to construction activities, the City of Manteca shall ensure that a Paleontological Mitigation Plan is prepared by a qualified paleontologist and adhered to during construction of the project for those areas that have been identified as having high paleontological sensitivity. The Paleontological Mitigation Plan shall apply to all areas that involve excavation that extends deeper than 3 feet below the surface, unless the area of excavations is known to be artificial fill. The Paleontological Mitigation Plan shall include, but not be limited to, the following:

- A requirement for a preconstruction meeting attended by a qualified paleontologist or designee. At this meeting, the paleontologist or designee shall describe the likelihood of encountering paleontological resources, what kinds of resources may be discovered, and the methods of recovery that shall be employed should such resources be encountered.
- During construction excavation, a qualified vertebrate paleontological monitor shall initially be present on a full-time basis whenever excavation occurs within the sediments that have a high paleontological sensitivity rating. Spot-check monitoring shall

occur for excavation in sediments with a low sensitivity rating. Monitoring may be reduced to a part-time basis if no resources are discovered in sediments with a high sensitivity rating (monitoring reductions, when they occur, shall be determined by the qualified paleontologist in consultation with the Resident Engineer). The monitor shall be empowered to temporarily divert construction equipment from the immediate area of the discovery, as well as be equipped to rapidly stabilize and remove fossils to avoid prolonged delays in construction. If large mammal fossils or large concentrations of fossils are encountered, alternate means of exposure and recovery shall be considered (e.g., using heavy equipment to assist in the removal and collection of large materials).

- Native sediments shall be spot-screened occasionally through 1/8- to-1/20-inch mesh screens to determine whether microfossils are present. If microfossils are encountered, sediment samples (up to 3 cubic yards, or 6,000 pounds) shall be collected and processed through 1/20-inch mesh screens to recover additional fossils.
- Recovered fossil specimens shall be prepared to the point of identification and permanent preservation. Preparation includes the sorting of any washed mass samples to recover small invertebrate and vertebrate fossils, the removal of surplus sediment from around larger specimens to reduce the volume and cost of storage for the repository; and the addition of approved chemical hardeners/stabilizers to fragile specimens.
- Specimens shall be identified to the lowest taxonomic level possible and curated in an institutional repository with retrievable storage. The repository institution may be a local museum or university with a curator who can retrieve the specimens upon request. A draft curation agreement shall be in place with an approved curation facility prior to the initiation of any paleontological monitoring or mitigation activities.
- The Paleontological Mitigation Report documenting completion of the Paleontological Mitigation Plan shall be prepared and submitted to the Lead Agency (Caltrans).

Implementation of the minimization measures identified above would reduce adverse effects on nonrenewable paleontological resources within and adjacent to the project site. More project-specific minimization measures may be developed during preparation of the Paleontological Mitigation Plan to further reduce adverse effects during final project design.

Mitigation Measures: The minimization measures identified above would satisfy the mitigation requirements for the California Environmental Quality Act - Cultural.

D.9 Hazardous Waste/Materials

The following measures would be implemented during construction activities that are occurring on the project site.

Avoidance Measures: None.

Minimization Measures: The following minimization measures shall be implemented during project construction activities to ensure that adverse effects from the handling of hazardous waste/materials is reduced.

HAZ-1: Prior to the start of construction activities, the construction contractor shall prepare a project-specific health and safety plan that provides guidelines that prevent or minimize worker exposure to lead in onsite soils that are being excavated and reused. The safety plan shall include (but not be limited to) protocols for environmental and personal monitoring, requirements for personal protective equipment, and other health and safety protocols and procedures for the handling of soils.

HAZ-2: The 19589 McKinley Avenue property (Assessor's Parcel Number 241-060-25) proposed for partial parcel acquisition was identified in the regulatory database search report on the Underground Storage Tank and Historical Underground Storage Tank databases. The databases listed a closed unleaded gasoline (1,000 gallon) and a closed diesel fuel (1,000 gallon) Underground Storage Tank at the property with no reported releases. Potential undocumented petroleum hydrocarbon releases from operation of the former Underground Storage Tanks may have adversely affected soil at the property. The status and location of the Underground Storage Tanks at the property shall be confirmed, and soil sampling for petroleum hydrocarbons shall be conducted at the portions of the private property proposed for acquisition to evaluate potential adverse effects, responsible party liability, and soil material management and disposal if required.

HAZ-3: Current and historical land use of private properties for full and partial acquisition includes agricultural purposes (orchards and row crops). Residual pesticides and herbicides may be present in soil at these properties. A preliminary site investigation within the project boundary consisting of soil sampling for pesticides, herbicides, and

metals shall be conducted to evaluate potential adverse effects, responsible party liability, and soil material management and disposal.

HAZ-4: Residential and commercial structures located on private properties proposed for full and partial acquisition may require demolition as part of the project development. Additionally, the McKinley Avenue undercrossing spans are present within the project boundary. Asbestos-containing material and lead-based paint may be present at the private property structures planned for demolition and the bridge spans. An asbestos and lead-based paint survey shall be required to evaluate the presence of asbestos and lead at the structures to be demolished due to project implementation.

HAZ-5: If encountered, undocumented Underground Storage Tanks, septic systems and domestic/agricultural/oil production wells shall be properly removed or abandoned in accordance with City of Manteca requirements.

HAZ-6: Yellow thermoplastic and paint striping that is removed during planned roadway improvements associated with the proposed project may require special handling and disposal requirements unless combined with sufficient asphalt grindings per Caltrans Special Provisions. Asbestos-containing pipe and treated-wood may also be encountered during project construction. Any encountered asbestos-containing pipe or treated-wood waste shall require proper handling and disposal in accordance with Caltrans and City of Manteca regulatory requirements.

Mitigation Measures: The minimization measures identified above would satisfy the mitigation requirements for the California Environmental Quality Act – Hazards and Hazardous Materials.

D.10 Air Quality

The measures presented below would be implemented to reduce or minimize air pollutant emissions associated with project construction activities.

Avoidance Measures: None.

Minimization Measures: The following minimization measures shall be implemented during project construction activities to reduce air pollutant emissions.

- AQ-1:** To reduce fugitive dust emissions, the construction contractor shall adhere to the requirements of San Joaquin Valley Air Pollution Control District Regulation VIII.
- AQ-2:** The construction contractor shall comply with Caltrans' Standard Specifications Section 1-1.01 F and Section 10.
- AQ-3:** The construction contractor shall comply with San Joaquin Valley Air Pollution Control District Rule 9510 and shall submit an Air Impact Assessment application, if it is determined that the construction-related emissions associated with the proposed project exceed the established thresholds.
- AQ-4:** All disturbed areas, including storage piles, which are not being actively used for construction purposes, shall be effectively stabilized from dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover for vegetative ground cover.
- AQ-5:** All onsite unpaved roads and offsite unpaved access roads shall be effectively stabilized for dust emissions using water or chemical stabilizer/suppressant.
- AQ-6:** All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled for fugitive dust emissions using application of water by presoaking.
- AQ-7:** When materials are transported offsite, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least 6 inches of freeboard space from the top of the container shall be maintained.

- AQ-8:** All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.)
- AQ-9:** Following the addition of material to, or the removal of material from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emission using sufficient water or chemical stabilizer/suppressant.
- AQ-10:** Within urban areas, track-out shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
- AQ-11:** Any construction area within the project site with 150 or more vehicle trips per day shall prevent carryout and track-out.
- AQ-12:** Traffic speeds within the project site on unpaved roads shall be limited to a maximum of 15 miles per hour.
- AQ-13:** The construction contractor shall install sandbags or other erosion control measures to prevent silt runoff to public roadways from construction areas with a slope greater than 1 percent.
- AQ-14:** The construction contractor shall install wind breaks at windward side(s) of construction areas within the proposed project site.
- AQ-15:** The construction contractor shall suspend excavation and grading activity when winds exceed 20 miles per hour (regardless of wind speed, an owner/operator must comply with Regulation VIII's 20 percent opacity limitation).
- AQ-16:** The construction contractor shall limit area excavation, grading, and other construction activity at any one time.
- AQ-17:** The construction contractor shall properly and routinely maintain all construction equipment, as recommended by the manufacturers' manuals, to control exhaust emissions.

AQ-18: The construction contractor shall ensure that construction equipment is shut down when not in use for extended periods of time to reduce emissions associated with construction equipment idling.

AQ-19: The construction contractor shall limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use simultaneously.

AQ-20: The construction contractor shall curtail construction activities during periods of high ambient air pollutant concentrations; this may include cessation of construction activity during the peak-hour of vehicular traffic on adjacent roadways.

Implementation of the minimization measures identified above would ensure that adverse air pollution emissions associated with project construction would be reduced to acceptable levels per local, state, and federal standards. Adverse effects from air pollution emissions are not expected to occur during project operation. Therefore, no avoidance, minimization measures would be required.

Mitigation Measures: The minimization measures identified above would satisfy the mitigation requirements for the California Environmental Quality Act – Air Quality.

D.11 Noise

Sensitive receptors surrounding the project site could be exposed to noise levels that exceed exterior Noise Abatement Criteria threshold standards for residential uses during site construction activities. These noise increases would be short term and temporary in nature. To reduce the increase in noise levels at the sensitive receptors, the following measures shall be implemented during construction activities. Measures would not be required during operation of the project.

Avoidance Measures: None.

Minimization Measures: The following minimization measures would be implemented during project construction to reduce construction-related noise impacts.

NOI-1: If nighttime construction activities occur at the project site, the construction contractor shall ensure that noise levels do not exceed 86.0 dB(A) as measured at 50 feet from active construction equipment between the hours of 9:00 p.m. to 6:00 a.m.

NOI-2: The construction contractor shall ensure that all construction equipment used on the project site during construction activities is equipped with adequate manufacturer-specified mufflers. Additionally, the construction contractor shall ensure that all construction equipment used onsite is well maintained and in good working order.

NOI-3: The construction contractor shall ensure that all noise generated during construction activities is within the limits of the City of Manteca construction noise thresholds. Furthermore, the construction contractor shall ensure that construction noise complies with threshold limits as provided in the Caltrans Standard Specifications Section 14-8.02 and Caltrans Standard Provisions S5-310.

Implementation of these minimization measures would ensure that construction noise would not adversely affect the sensitive receptors around the project site.

Mitigation Measures: The minimization measures identified above would satisfy the mitigation requirements for the California Environmental Quality Act - Noise.

D.12 Biological Environment

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan includes species-specific measures to minimize impacts to covered species. These Incidental Take Minimization Measures must be included as conditions of project approval.

Compensation for impacts to habitat for special-status plant and animal species covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan may be provided by one or two or more of the following options:

- Payment of the appropriate mitigation fees.
- Dedication of mitigation lands.
- Purchase of approved mitigation bank credits, or
- Propose an alternative mitigation plan.

D.12.1 Natural Communities

The following measures are consistent with the Incidental Take Minimization Measures, per the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan and would minimize potential impacts to Natural Habitats - wetland habitats occurring in the biological study area.

Avoidance Measures: None.

Minimization Measures: The following minimization measures would be implemented to minimize potential impacts to Natural Habitats-wetland habitats due to project implementation.

BIO-1: Staging areas, access routes, and construction areas shall be located outside of wetland areas to the maximum extent practicable.

BIO-2: Measures consistent with the current Caltrans' Construction Site Best Management Practices Manual (including the Stormwater Pollution Prevention Plan and Water Pollution Control Program Manuals [http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf]) shall be implemented to minimize affects to wetland habitat (e.g., erosion, siltation, etc.) during construction.

BIO-3: A Water Pollution Control Program shall be prepared by the contractor in accordance with typical provisions associated with a Regional General Permit for Construction Activities (on file with the Regional Water Quality Control Board). The Water Pollution Control Program shall contain a Spill Response Plan with instructions and procedures for reporting spills, the use and location of spill containment equipment, and the use and location of spill collection materials.

BIO-4: Wetland vegetation shall be retained as practical within the constraints of the proposed project as determined by the Joint Powers Authority with the concurrence of the Permitting Agencies' representatives on the Technical Advisory Committee. Where vegetation removal is necessary, rapidly sprouting plants, such as willows, shall be cut off at the ground line and the root systems left intact.

BIO-5: Prior to issuance of a grading permit or other authorization to proceed with project construction, the City shall obtain any regulatory permits that are required from the Army Corps of Engineers, Regional Water Quality Control Board, and /or California Department of Fish and Wildlife.

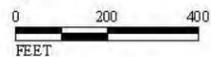
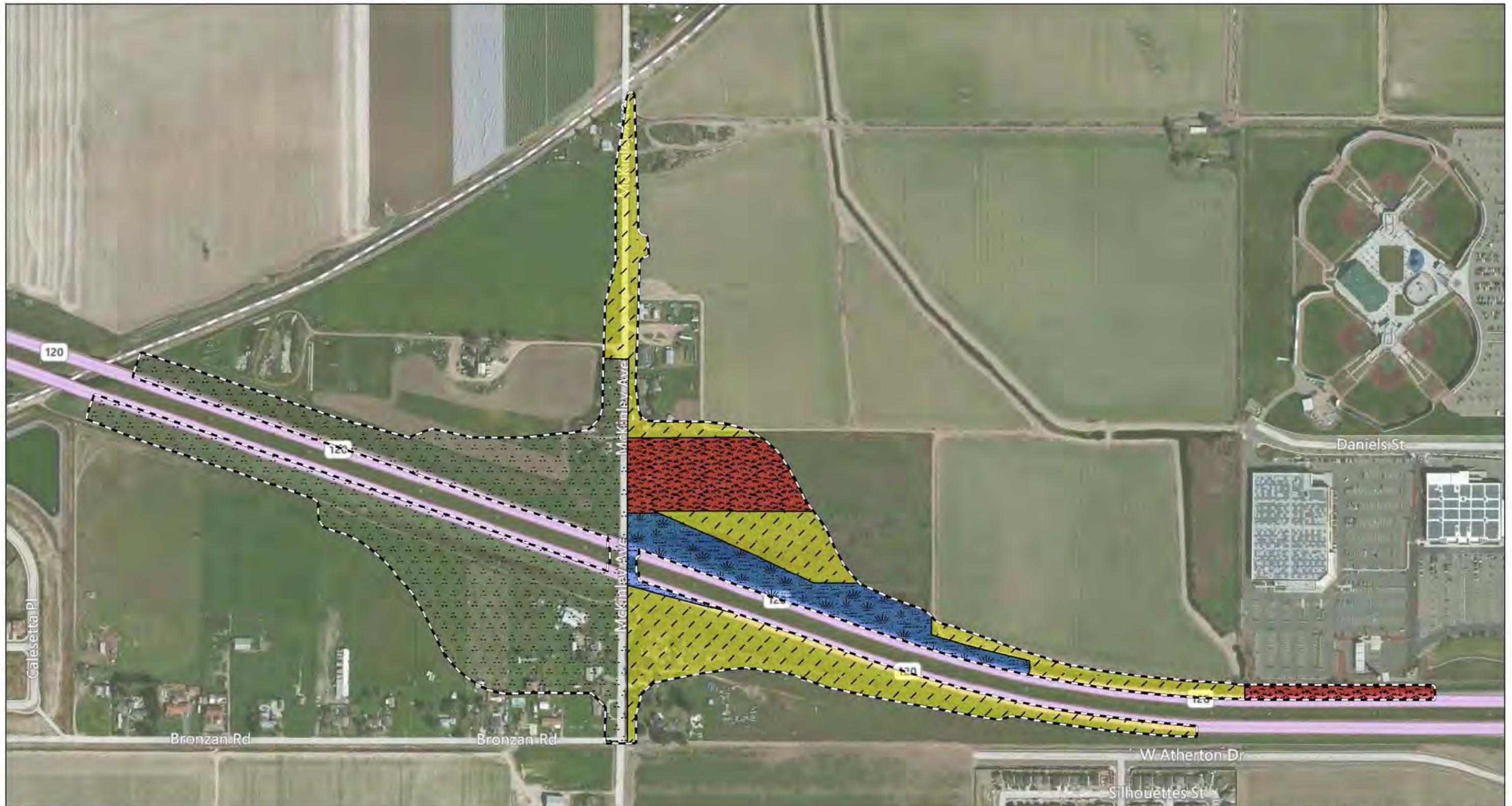
BIO-6: Prior to issuance of a grading permit, the City of Manteca shall implement the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan conservation strategy, which includes one or a combination of two or more of the following options, to provide compensation pursuant to the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan:

1. Pay the appropriate fee as indicated in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan; or
2. Dedicate, as conservation easements or fee title, or in-lieu dedications; or
3. Purchase approved mitigation bank credits; or
4. Propose an alternative mitigation plan, consistent with the goals of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan and equivalent in biological value to options 1, 2, and 3 above, pending approval from the Joint Powers Authority.

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan compensation areas and 2013 costs are shown in Figure 2.16.

Mitigation Measures: The minimization measures identified above would satisfy the mitigation requirements for the California Environmental Quality Act – Biological Resources.

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LEGEND

Project Footprint - (59.55 ac)

SJMSCP Coverage Area

Agriculture - (17.73 ac)

Natural - (5.72 ac)

Multi-Purpose Open Space - (6.28 ac)

Urban or Barren - (29.81 ac)

SJMSCP Compensation Areas*

Agriculture - (17.73 ac @ \$12,711 = \$225,366)

Natural - (5.72 ac @ \$12,711 = \$72,707)

Multi-Purpose Open Space - (6.28 ac @ \$6,364 = \$39,966)

* Costs per 2013 SJMSCP Fee Schedule

*State Route 120/McKinley Avenue Interchange
Manteca, San Joaquin County, California
10-SJ-120-PM 0.0-3.0
EA 10-0H890*

SOURCE: Natural Environment Study State Route 120/McKinley Avenue Interchange Project (October 2013)

I:\Raj1103\ANIS-EA Chapter 2\Figure 2.16 ai (3/28/2014)

Figure 2.16: San Joaquin County Multi-Species Habitat Conservation and Open Space Plan Compensation Areas and Costs

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D.12.2 Wetlands and Other Waters

Avoidance Measures: None.

Minimization Measures: The proposed project would be required to implement Incidental Take Minimization Measures BIO-1 through BIO-5 as provided above. These avoidance and minimization measures are consistent with the Incidental Take Minimization Measures, per the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan and would minimize potential adverse effects to Wetlands and Other Waters occurring in and surrounding the project site.

Mitigation Measures: The minimization measures identified above would satisfy the mitigation requirements for the California Environmental Quality Act – Biological Resources.

D.12.3 Animal Species

The following measures are consistent with the Incidental Take Minimization Measures, per the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan and would minimize potential adverse effects to animal species occurring in and around the project site.

Avoidance Measures: None.

Minimization Measures: The following minimization measures would be implemented to minimize potential adverse effects on animal species occurring in and around the project site.

D.12.3.1 Bats

The subject bat species are covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The Incidental Take Minimization Measures described below may be required to offset potential impacts to bats:

BIO-7: Focused bat surveys shall be conducted in the biological study area by a qualified bat biologist to determine if nursery or roost sites are present. Focused surveys shall be the responsibility of the City of Manteca. If bats are roosting in the biological study area, the following measures shall be implemented:

- a. Prior to the nursery season for these bat species, sites shall be sealed or otherwise rendered unusable to bats (e.g., install grating).
- b. Seal hibernation sites, prior to the hibernation season (November through March) when hibernation sites are identified on the project site. Alternatively, grating may be installed.
- c. When colonial roosting sites, which are located in trees or structures, must be removed, removal shall occur outside of the nursery and/or hibernation seasons and shall occur during dusk and/or evening hours after bats have left the roosting site unless otherwise approved by the Joint Powers Authority.

D.12.3.2 Western Burrowing Owl

Direct take of nesting western burrowing owls would be in violation of the California Fish and Game Code and Migratory Bird Treaty Act; the western burrowing owl is a covered species under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. However, the San Joaquin County Council of Governments has

recently adopted California Department of Fish and Wildlife Staff Report on Burrowing Owls (2012) and has prepared additional Incidental Take Minimization Measures to cover this species. The following Incidental Take Minimization Measures are consistent with the California Department of Fish and Wildlife Staff Report on Burrowing Owls (2012) and the provisions of the Migratory Bird Treaty Act:

BIO-8: The presence of ground squirrels and squirrel burrows are attractive to western burrowing owls. Burrowing owls may, therefore, be discouraged from entering or occupying construction areas by discouraging the presence of ground squirrels. To accomplish this, the City of Manteca should prevent ground squirrels from occupying the biological study area early in the planning process by employing one of the following practices:

- a. The City of Manteca may plant new vegetation or retain existing vegetation entirely covering the site at a height of approximately 36 inches above the ground. Vegetation should be retained until construction begins. Vegetation will discourage both ground squirrel and owl use of the site.
- b. Alternatively, if western burrowing owls are not known or suspected to occur in the biological study area and the area is an unlikely occupation site for the California tiger salamander, California red-legged frog, or San Joaquin kit fox, the City of Manteca may disc or plow the entire biological study area to destroy any ground squirrel burrows. At the same time burrows are destroyed, ground squirrels should be removed through one of the following approved methods to prevent reoccupation of the biological study area:
 - i. Anticoagulants. Establish bait stations using the approved rodenticide anticoagulants Chlorophacinone or Diphacinone. Rodenticides shall be used in compliance with the Environmental Protection Agency label standards and as directed by the San Joaquin County Agricultural Commissioner.
 - ii. Zinc Phosphide. Establish bait stations with non-treated grain 57 calendar days in advance of rodenticide application and then apply Zinc Phosphide to bait stations. Rodenticides shall be

used in compliance with the Environmental Protection Agency label standards and as directed by the San Joaquin County Agricultural Commissioner.

- iii. Fumigants. Use below-ground gas cartridges or pellets and seal burrows. Approved fumigants include Aluminum Phosphide (Fumitoxin, Phostoxin) and gas cartridges sold by the San Joaquin County Agricultural Commissioner office. NOTE: Crumpled newspaper covered with soil is often an effective seal for burrows when fumigants are used. Fumigants shall be used in compliance with the Environmental Protection Agency label standards and as directed by the San Joaquin County Agricultural Commissioner.
- iv. Traps. For areas with minimal rodent populations, traps may be effective for eliminating rodents. If trapping activities are required, the use of traps shall be consistent with all applicable laws and regulations.

BIO-9: If the measures described above were not attempted or were attempted but failed and western burrowing owls are known to occupy the biological study area, then the following measures shall be implemented in accordance with the California Department of Fish and Wildlife Staff Report on Burrowing Owls (2012):

- a. Breeding season (February 1 through August 31): Preconstruction surveys for western burrowing owls will be performed no more than 14 days prior to initial ground disturbance activities in accordance with the California Department of Fish and Wildlife Staff Report on Burrowing Owls (2012).
 - i. Any occupied burrows shall not be disturbed and shall be provided with a 250-foot protective buffer until and unless the Technical Advisory Committee, with the concurrence of the Permitting Agencies (representatives on the Technical Advisory Committee), or unless a qualified biologist approved by the Permitting Agencies verifies through non-invasive means that either: 1) the owls have not begun egg laying, or 2) juveniles from the occupied burrows are foraging independently and are capable of independent survival.

Once the fledglings are capable of independent survival, a Burrowing Owl Exclusion Plan is developed and approved by the applicable California Department of Fish and Wildlife San Joaquin County Multi-Species Habitat Conservation and Open Space Plan representative/office and habitat is mitigated in accordance with the California Department of Fish and Wildlife Staff Report on Burrowing Owls (2012), then the burrows can be destroyed. Preconstruction surveys following destruction of burrows and prior to initial construction activities are recommended to ensure owls do not re-colonize the biological study area.

- ii. If project activities are delayed or suspended for more than 15 days during the breeding season, surveys will be repeated.

- b. Non-breeding season (September 1 through January 31):

Preconstruction surveys following the California Department of Fish and Wildlife Staff Report on Burrowing Owls (2012) will be performed prior to initial ground disturbance activities. Burrowing owls may be evicted after a Burrowing Owl Exclusion Plan is developed and approved by the applicable California Department of Fish and Wildlife San Joaquin County Multi-Species Habitat Conservation and Open Space Plan representative/office and habitat is mitigated in accordance with the California Department of Fish and Wildlife Staff Report on Burrowing Owls (2012).

Preconstruction surveys following destruction of burrows and prior to initial construction activities are recommended to ensure owls do not re-colonize the biological study area. If owls are found within 160 feet of the biological study area, it is recommended that visual screens or other measures are implemented to limit disturbance of the owls without evicting them from the occupied burrows.

D.12.3.3 Cackling Goose

The cackling goose is covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. However, the risk of actually killing or harming this species during project construction is nearly nonexistent because this species is highly mobile during winter foraging. Therefore, Incidental Take Minimization Measures for this species are not included in the San Joaquin County Multi-Species

Habitat Conservation and Open Space Plan, consistent with the provisions of the Migratory Bird Treaty Act.

D.12.3.4 White-Tailed Kite

Direct take of white-tailed kites would be in violation of the California Fish and Game Code and Migratory Bird Treaty Act; the white-tailed kite is a covered species under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The following mitigation measures are consistent with the Incidental Take Minimization Measures for this species and provisions of the Migratory Bird Treaty Act:

BIO-10: Removal of suitable nest trees shall be completed during the non-nesting season (when the nests are unoccupied), between September 1 and February 15.

BIO-11: If suitable nest trees will be retained and ground disturbing activities will commence during the nesting season (February 16 through August 31), all suitable nest trees on the site will be surveyed by a qualified biologist prior to initiating construction-related activities. Surveys will be conducted no more than 14 days prior to the start of work. If an active nest is discovered, a 100-foot buffer shall be established around the nest tree and delineated using orange construction fence or equivalent. The buffer shall be maintained in place until the end of the breeding season or until the young have fledged, as determined by a qualified biologist. If no active nests are present, construction may proceed as planned.

In some instances, the California Department of Fish and Wildlife may approve decreasing the specified buffers with implementation of other avoidance and minimization measures (e.g., having a qualified biologist onsite during construction activities during the nesting season to monitor nesting activity). If no nesting is discovered, construction can begin as planned. Construction beginning during the non-nesting season and continuing into the nesting season shall not be subject to these measures.

D.12.3.5 California Horned Lark

Direct take of the California horned lark would be in violation of the California Fish and Game Code and Migratory Bird Treaty Act; the California horned lark is a

covered species under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The following mitigation measures are consistent with the Incidental Take Minimization Measures for this species and the provisions of the Migratory Bird Treaty Act:

BIO-12: If project construction is to begin during the nesting season (March 1–September 15), all suitable nesting habitat in the biological study area and within 500 feet of the limits of work shall be surveyed by a qualified biologist prior to commencing construction-related activities. Surveys shall be conducted no more than 14 days prior to the start of work.

BIO-13: If nesting areas are identified, a setback of 500 feet from colonial nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

D.12.3.6 San Joaquin Whipsnake

The San Joaquin whipsnake is covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. However, because this species is of very limited distribution within San Joaquin County (primarily isolated locations outside of anticipated development areas within the southwest zone), no Incidental Take Minimization Measures are included in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The Incidental Take Minimization Measures described below may be required to offset potential impacts to the San Joaquin whipsnake:

BIO-14: Prior to any ground-disturbing activities, the area shall be surveyed by a qualified biologist for the presence of San Joaquin whipsnakes.

BIO-15: If San Joaquin whipsnakes are discovered in the biological study area, Incidental Take Minimization Measures shall be formulated by the Technical Advisory Committee and approved by the Joint Powers Authority with the concurrence of the Permitting Agencies' representatives on the Technical Advisory Committee in accordance

with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan's Adaptive Management Plan—Section 5.9.4.

D.12.3.7 Coast Horned Lizard

The coast horned lizard is covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. However, because this species is of very limited distribution within San Joaquin County (primarily isolated locations outside of anticipated development areas within the southwest zone), no Incidental Take Minimization Measures are included in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The Incidental Take Minimization Measures described below may be required to offset potential impacts to the coast horned lizard:

BIO-16: Prior to any ground-disturbing activities, the area shall be surveyed by a qualified biologist for the presence of coast horned lizards.

BIO-17: If coast horned lizards are discovered in the biological study area, Incidental Take Minimization Measures shall be formulated by the Technical Advisory Committee and approved by the Joint Powers Authority with the concurrence of the Permitting Agencies' representatives on the Technical Advisory Committee in accordance with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan's Adaptive Management Plan—Section 5.9.4.

D.12.3.8 Western Spadefoot Toad

The western spadefoot toad is covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The Incidental Take Minimization Measures described below may be required to offset potential impacts to the western spadefoot toad:

BIO-18: Prior to any ground-disturbing activities, the area shall be surveyed by a qualified biologist for the presence of western spadefoot toads.

If western spadefoot toads are discovered in the biological study area, Incidental Take Minimization Measures shall be formulated by the Technical Advisory Committee and approved by the Joint Powers Authority with the concurrence of the Permitting Agencies' representatives on the Technical Advisory Committee in accordance

with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan's Adaptive Management Plan—Section 5.9.4.

Mitigation Measures: The minimization measures identified above would satisfy the mitigation requirements for the California Environmental Quality Act – Biological Resources.

D.12.4 Threatened and Endangered Species

The following measures are consistent with the Incidental Take Minimization Measures, per the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, and would minimize potential adverse effects to threatened species occurring in and around the project site:

Avoidance Measures: None.

Minimization Measures: The following minimization measures would be implemented to minimize potential adverse effects on threatened and endangered species occurring in and around the project site.

D.12.4.1 Swainson's Hawk

Direct take of nesting Swainson's hawk would be in violation of the California Fish and Game Code and Migratory Bird Treaty Act. In addition, this species is covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The following mitigation measures are consistent with the Incidental Take Minimization Measures for this species and the provisions of the Migratory Bird Treaty Act:

BIO-19: Removal of suitable nest trees shall be completed during the non-nesting season (when the nests are unoccupied), between September 1 and February 15.

BIO-20: If suitable nest trees will be retained and ground disturbing activities will commence during the nesting season (February 16 through August 31), all suitable nest trees on the site shall be surveyed by a qualified biologist prior to commencing construction-related activities. Surveys shall be conducted no more than 14 days prior to the start of work. If an active nest is discovered, a 100-foot buffer shall be established around the nest tree and delineated using orange construction fence or equivalent. The buffer shall be maintained in place until the end of the breeding season or until the young have fledged, as determined by a qualified biologist. If no active nests are present, construction may proceed as planned.

In some instances, the California Department of Fish and Wildlife may approve decreasing the specified buffers with implementation of other avoidance and minimization measures (e.g., having a qualified

biologist onsite during construction activities during the nesting season to monitor nesting activity). If no nesting is discovered, construction can begin as planned. Construction beginning during the non-nesting season and continuing into the nesting season shall not be subject to these measures.

D.12.4.2 California Tiger Salamander

The following measures are proposed to minimize adverse effects to any California tiger salamander occurring in the suitable habitat southwest of the overpass:¹⁷

- BIO-21:** Any biologist performing biological work related to this project shall have the necessary experience to handle and capture the central California tiger salamander; individuals that do not hold an Endangered Species Act section 10(a)(1)(A) permit must have a level of experience with the species comparable to that needed to obtain a permit.
- BIO-22:** Prior to excavation work or other ground disturbance southwest of the overpass, the approved biologist(s) will conduct environmental education training for all construction personnel covering the status of the central California tiger salamander, the importance of avoiding adverse effects to the species, and the potential penalties for not complying with the conditions of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. New personnel who are added to the project after the training is first conducted also will be required to be trained.
- BIO-23:** The approved biologist(s) will oversee the hand excavation of any burrows located in suitable habitat southwest of the overpass that are within the project footprint. These excavations will be performed carefully using hand-trowels and spades. Burrows will be excavated to

¹⁷ These Incidental Take Minimization Measures were developed through negotiations between the San Joaquin Council of Governments and the U.S. Fish and Wildlife Service and are intended to mitigate the “central” region of the California tiger salamander species. Therefore, the central California tiger salamanders are discussed in these measures.

the terminus of the tunnels, or to where the burrow is less than or equal to 0.5 inch in diameter.

BIO-24: If ground disturbing activities in suitable habitat southwest of the overpass are projected to extend beyond the first rain of the rainy season, Caltrans will erect drift fencing around the work areas, prior to commencing work, to prevent central California tiger salamanders from entering these sites. Drift fencing will be installed and inspected by the approved biologist(s) no less than 72 hours prior to the first rain event of the rainy season. If weather conditions necessitate the installation of drift fencing, the approved biologist(s) will oversee the installation of pit traps to capture central California tiger salamanders migrating during the rain events. The approved biologist(s) will check pit traps twice daily, once in the morning prior to the start of construction and once at the end of the work day.

BIO-25: Any central California tiger salamanders captured in pit traps or uncovered in burrows will be transferred immediately to the California State University, Sacramento Department of Biological Sciences, care of Dr. William Avery or Dr. William Coleman. Transported animals must be kept cool and moist.

BIO-26: A post-construction report detailing compliance with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan will be provided to the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife and San Joaquin County Council of Governments, Inc. within 90 calendar days of completion of the project. The report will include:

- a. Dates of project groundbreaking and completion.
- b. Information concerning the success of the project in meeting Incidental Take Minimization Measures, such as the capture and offsite transport of central California tiger salamanders.
- c. An explanation of failure to meet such measures, if any.
- d. Known project effects on the central California tiger salamander.
- e. Observed incidences of injury to or mortality of the species.
- f. Any other relevant information.

D.12.4.3 Vernal Pool Invertebrates

The vernal pool tadpole shrimp, vernal pool fairy shrimp, and California linderiella fairy shrimp are all covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The Incidental Take Minimization Measures described below may be required to offset potential impacts to these vernal pool invertebrate species:

- BIO-27:** Filling vernal pools shall be delayed until pools are dry and samples from the top layer of vernal pools soils are collected. Soil collections shall be sufficient to include a representative sample of plant and animal life present in the pools by incorporating seeds, cysts, eggs, spores and similar inoculum.
- BIO-28:** Collected soils shall be dried and stored in pillow cases labeled with the date and location of soils collected. Soils will be deposited with the Joint Powers Authority. The Joint Powers Authority shall retain the soils in a cool, dry area and shall be responsible for providing soils to vernal pool construction managers for inoculating newly created vernal pools on San Joaquin County Multi-Species Habitat Conservation and Open Space Plan Preserves.

D.12.4.4 Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle is covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The Incidental Take Minimization Measures described below may be required to offset potential impacts to valley elderberry longhorn beetles:

- BIO-29:** If elderberry shrubs are present in the biological study area, to the extent possible, a setback of 20 feet from the dripline of each elderberry bush shall be established.
- BIO-30:** Brightly colored flags or fencing shall be installed surrounding elderberry shrubs and remain in place throughout the construction process.
- BIO-31:** In addition to implementation of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan conservation strategy discussed in Section 2.3, in accordance with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

Section 5.5.4(D), the City of Manteca shall pay \$1,800 for each stem over 1 inch in diameter at ground level that is removed or is located within 20 feet of ground disturbance. Approximately 246 stems that are 1 inch in diameter at ground level will be removed during ground disturbance and 53 stems 1 inch in diameter at ground level are within 20 feet of ground disturbance activities, resulting in a total fee of \$538,200.

Mitigation Measures: The minimization measures identified above would satisfy the mitigation requirements for California Environmental Quality Act – Biological Resources.

D.12.5 Invasive Species

The following measures are consistent with the Incidental Take Minimization Measures, per the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan and would minimize potential adverse effects from invasive species occurring in and around the project site.

Avoidance Measures: None.

Minimization Measures: The following minimization measures would be implemented to minimize potential adverse effects from invasive species occurring in and around the project site.

BIO-32: To avoid the introduction of invasive species into the biological study area during project construction, contract specifications shall include, at a minimum, the following measures:

1. All earthmoving equipment to be used during project construction shall be thoroughly cleaned before arriving on the project site.
2. All seeding equipment (i.e., hydroseed trucks) shall be thoroughly rinsed at least three times prior to beginning seeding work.
3. To avoid spreading any non-native invasive species already existing onsite, to offsite areas, all equipment shall be thoroughly cleaned before leaving the site.
4. To avoid introducing additional non-native species to the site, all fill dirt brought onto the site shall be weed-free.

Mitigation Measures: None.

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Appendix E List of Technical Studies

The following technical studies contributed to the information and analysis presented in the Administrative Draft Initial Study with Mitigated Negative Declaration/ Environmental Document for the State Route 120/McKinley Avenue Project. The list of technical studies is presented in the order which they are referenced in Chapter 2 of the Administrative Draft Initial Study with Mitigated Negative Declaration/ Environmental Document for the State Route 120/McKinley Avenue Project.

1. *Draft Farmland Conversion Assessment State Route 120/McKinley Avenue Interchange Project*, June 2014.
2. *State Route 120 and McKinley Interchange Draft Relocation Impact Study*, July 15, 2013.
3. *Revised Final Traffic Report State Route 120/McKinley Avenue Interchange Project Approval and Environmental Document (PA/ED)*, April 25, 2013.
4. *Visual Impact Assessment State Route 120/McKinley Avenue Interchange Project*, October 2013.
5. *Water Quality Assessment Report McKinley Avenue/State Route 120 Interchange Project*, June 2014.
6. *Preliminary Geotechnical Report State Route 120/McKinley Avenue Interchange, Manteca, San Joaquin County, California*, December 2012.
7. *Paleontological Resources Identification and Evaluation Report for the SR-120/McKinley Avenue Interchange Project*, July 2013.
8. *Initial Site Assessment State Route 120/McKinley Avenue Improvement Project Manteca, San Joaquin County, California*, March 2013.
9. *Air Quality Analysis State Route 120/McKinley Avenue Interchange Project*, June 2014.
10. *Air Quality Conformity Analysis State Route 120/McKinley Avenue Interchange Project*, July 2014.
11. *Noise Study Report State Route 120/McKinley Avenue Interchange*, June 2014.

12. *Natural Environment Study State Route 120/McKinley Avenue Interchange*, June 2014.

13. *City of Manteca General Plan 2023 Policy Document*, October 2003.

14. *City of Manteca 2023 General Plan Draft Environmental Impact Report*, October 2003.