Interstate 205/Lammers Road Interchange Project

Water Quality Assessment Report

City of Tracy

San Joaquin County

10-SJ-205- PM2.6/RM5.1

EA0H9100

April 2010

Caltrans

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April 2010

U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration, and
STATE OF CALIFORNIA
Department of Transportation
CITY OF TRACY

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Interstate 205/Lammers Road Interchange Project
Water Quality Assessment Report (April 2010)
Errata, September 2011

Note: Where necessary in this errata sheet, omitted text is struck out and new or replaced text is underlined, to indicate specific changes to the original document.

Alternative 1 was removed from consideration in August 2011 when it was determined not to be a geometrically viable alternative. Alternative 1 does not meet the interchanging spacing requirement per the Highway Design Manual Topic 501.3, "The minimum Interchange spacing shall be one mile urban areas, two miles in rural areas, and two miles between freeway-to-freeway interchanges and local street interchanges." The available spacing between the existing partial Eleventh Street interchange and the proposed Lammers Road interchange would be only 0.8 mile. This deficiency was acknowledged and a mandatory design exception was sought. The exception was declined due to limited discussion regarding extenuating circumstances that prevented the alternative from achieving the required spacing and the existence of an alternative that did meet the spacing requirement (Alternative 5A).

Therefore the following changes are made:

Cover and Title Page: Change Post miles in title

10-SJ-205-~~(PM2.6/RM5.1)~~PM2.5/R4.9

Throughout Document: Disregard description of, analysis of, and reference to Alternative 1 throughout document.

Interstate 205/Lammers Road Interchange Project
Water Quality Assessment Report (April 2010)
Errata, February 2011

Note: Omitted text is struck out. New or replaced text is underlined.

Page 1-3: Replace Figure 1-1 with attached Figure 1-1.

Page 1-8: Revise Alternative 1, Park and Ride description as follows:

Park and Ride Facilities. 1-acre Park and Ride facilities would be provided in the vicinity of the project at the ~~southeast~~ southwest corner of the eastbound ramp intersection.

Page 1-9: Revise Alternative 5A, Park and Ride description as follows:

Park and Ride Facilities. 1-acre Park and Ride facilities would be provided in the vicinity of the project at the ~~northwest~~ northeast corner of the Commerce Way and 11th Street intersection.

Page 3-3: Replace Figure 3-1 with attached Figure 3-1.

Page 3-5: Replace Figure 3-2 with attached Figure 3-2.

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List of Acronyms and Abbreviated Terms

ADT	Average Daily Traffic
af	acre-feet
BMPs	best management practices
BOD	biochemical oxygen demand
BSA	biological study area
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CIMIS	California Irrigation Management Information System
City	City of Tracy
CWA	Clean Water Act
DO	dissolved oxygen
EPA	U.S. Environmental Protection Agency
ESL	Environmental Study Limits
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRMs	Flood Insurance Rate Maps
General Dewatering Permit	General Order for Dewatering and Other Low Threat Discharges to Surface Waters
I-205	Interstate 205
I-5	Interstate 5
I-580	Interstate 580
MBAs	methylene blue activated substances
mg/L	milligrams per liter
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NOI	Notice of Initiation
NPDES	National Pollutant Discharge Elimination System
Ocean Plan	Water Quality Control Plan for Ocean Waters of California
PCBs	polychlorinated biphenyls
Porter-Cologne Act	Porter-Cologne Water Quality Control Act of 1969
PPMP	pollution prevention and monitoring program
proposed project	I-205/Lammers Interchange Project
RTP	Regional Transportation Plan

RWQCB	Regional Water Quality Control Boards
SJCOG	San Joaquin Council of Governments
SPCC	spill prevention and countermeasure plan
SR 120	State Route 120
SR 99	State Route 99
State Water Board	State Water Resources Control Board
SWMP	Caltrans Storm Water Management Plan
SWPPP	stormwater pollution prevention plan
TDC	Targeted Design Constituents
TDS	total dissolved solids
Thermal Plan	Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California
TMDL	total maximum daily load
TSS	total suspended sediment
U.S. 50	U.S. Highway 50
USACE	U.S. Army Corps of Engineers
WDRs	waste discharge requirements

Chapter 1 Introduction

This report was prepared for the I-205/Lammers Interchange Project (proposed project). The City of Tracy (City), in conjunction with the California Department of Transportation (Caltrans) under authority delegated by the Federal Highway Administration (FHWA), is proposing to construct interchange improvements and auxiliary lanes, as well as realign and extend local roadways. The project is located along Interstate 205 (I-205) in the City in San Joaquin County, California.

This report is intended to support the preparation of National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) documentation for Caltrans, the lead agency, which is funding a portion of the project. This report also supports efforts to obtain agreements, permits, and concurrence needed to construct the proposed project.

I-205 is a short, well-traveled freeway connecting the Central Valley of California with the San Francisco Bay Area. It provides direct access to the western portion of the City, a growing bedroom community and transportation hub. Traffic volumes within the project vicinity, particularly along the 11th Street and Grant Line Road interchanges, have been increasing over the last several years.

1.1 Background

The eastern end of I-205 connects to Interstate 5 (I-5) and State Route 120 (SR 120), a freeway that connects I-5 and State Route 99 (SR 99). On its western end, I-205 connects to Interstate 580 (I-580), which is the main route into the San Francisco Bay Area from the center of the central valley.

I-205 provides direct access to the western portion of the City, a growing bedroom community and transportation hub. I-205 primarily functions to channel commuter and freight traffic from the north (Stockton and Sacramento), east (Manteca, Oakdale, Sonora), and south (Modesto, Merced) to the Bay Area via I-580 and the Altamont Pass. I-205 replaced U.S. Highway 50 (U.S. 50), and the original route of U.S. 50 through the City is now part of Business Loop I-205. Due to its role as a commuter and freight route, the previous four-lane configuration for I-205 at the eastern end was inadequate to handle traffic demands and was widened in 2009 to include two more lanes. I-205 within the project limits is currently a six-lane freeway (three mixed-flow lanes in each direction) from I-580 to I-5.

The City conducted a comprehensive traffic analysis to assess the current and projected traffic needs based on long-term demand and its General Plan. Fehr & Peers Transportation consultants (traffic consultants to the City) prepared a traffic model for design horizon year 2035 utilizing a blend of the City's traffic model and the San Joaquin Council of Governments' (SJCOG) modeling tools. In addition to the traffic forecasts, Fehr & Peers completed an analysis of the traffic conditions to analyze traffic levels of service and establish project geometry (i.e., roadway design) for the interchange.

Year 2035 traffic forecasts were used to determine required geometrics (design, capacity, signalization, storage lengths, etc.) for several reasons. First, Caltrans' *Highway Design Manual* requires that the project design meet a minimum of a 20-year design horizon to maximize the capital expenditure. Second, the SJCOG projections utilize a 20-year horizon. Third, the City recently approved the long-term General Plan program which defines the City's land use objectives for a 2035 horizon. Figure 1-1 shows the project area.

1.2 Purpose and Need

1.2.1 Purpose

The purposes of the proposed project are:

- to provide additional connectivity to I-205 to serve the increase in forecasted traffic demand at surrounding interchanges, and
- to improve regional mobility by connecting a planned regional arterial road with I-205.

1.2.2 Need

The proposed new Lammers Road interchange is needed to improve local access to I-205, to connect planned regional arterials with I-205, and to provide interregional connectivity. The project is needed because northwest Tracy has been, and is expected to continue, experiencing substantial traffic growth—both locally from new area development and regionally from adjacent communities such as Mountain House and Gateway.

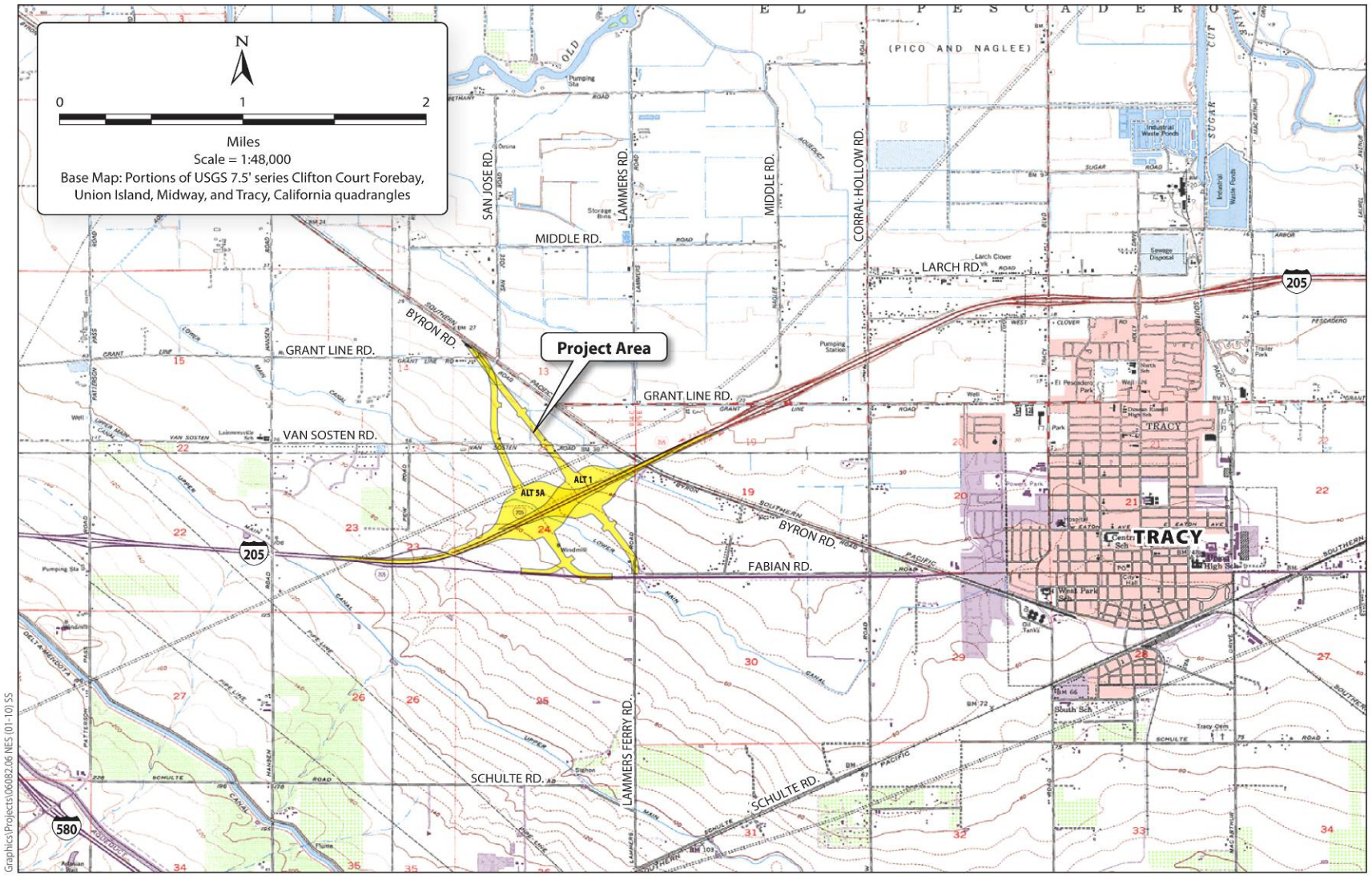

Figure 1-1 Project Area

Traffic volumes on 11th Street and Grant Line Road have been increasing over the last several years. Currently, traffic volumes are approximately 113,000 Average Daily Traffic (ADT) on I-205 west of 11th Street, 95,000 ADT on I-205 east of 11th Street, 26,000 ADT on 11th Street east of I-205, and 21,000 ADT on Grant Line Road east of Naglee Road. The City is anticipating development in the project vicinity that would contribute to significantly increased traffic volumes. Development projects currently approved include Tracy Gateway, Mountain House, and the Naglee/Grant Line Road areas. Future traffic models project that by 2035, traffic would be approximately 186,000 ADT on I-205 west of 11th Street and would increase to 56,000 ADT on 11th Street east of I-205 and 30,000 ADT on Grant Line Road east of Naglee Road. The new interchange would be needed to maintain or improve levels of service at the intersections of 11th Street/Lammers Road and Grant Line Road/Naglee Road.

This connection would provide alternative routes to I-205 for local traffic. The proposed interchange is currently identified in the San Joaquin County Regional Transportation Plan as a Tier 1 project and in the City of Tracy Roadway Master Plan as a Principal Arterial. The Lammers Road alignment and new interchange with I-205 is planned to connect from the future Golden Valley Parkway (currently Middle Road) north of I-205 to I-580 south of the City.

This Lammers Road regional connection would serve north–south access in the western portion of the City's urban area, and provide an alternative means of access to future east–west connections.

This additional access would result in a substantial area-wide reduction in daily vehicle hours of delay. The implementation of the project could potentially reduce the daily vehicle hours of delay by up to 66%.

1.3 Alternatives

This section describes the proposed build alternatives that have been developed by a multi-disciplinary and multi-agency Project Development Team. Project Development Team members consist of Caltrans staff representing design, traffic operations, environmental and right-of-way disciplines, as well as representatives of project stakeholders. These stakeholders include the City of Tracy Public Works Department and the SJCOG. The Project Development Team recommended the alternatives that best address the project's purpose and need, while avoiding or minimizing environmental impacts. Major features used for comparison include project cost, level of service and other traffic data, and specific environmental impacts. Figure 1-2 shows both alternatives.

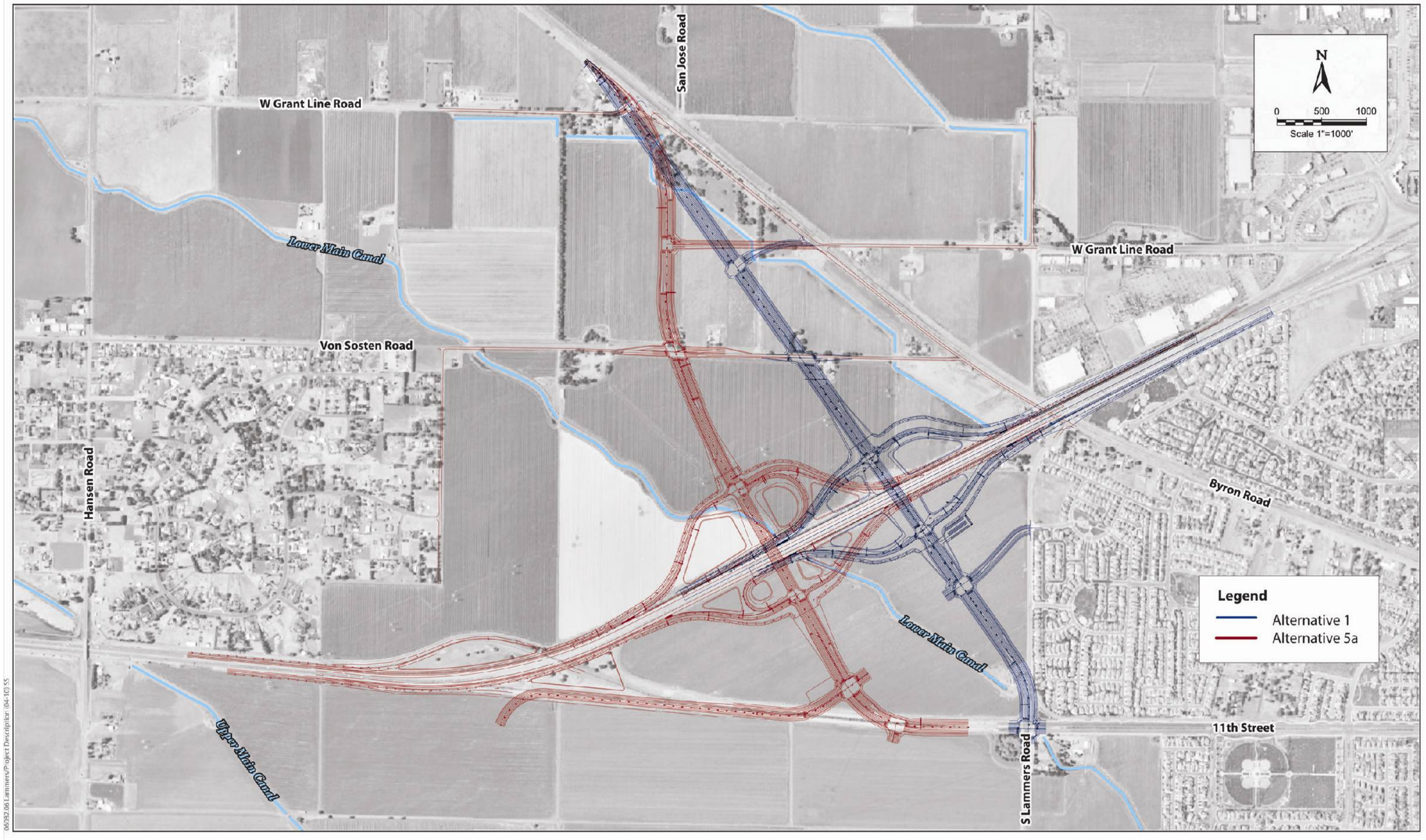

Figure 1-2 Project Alternatives

1.3.1 No Build Alternative

The No-Build Alternative assumes that existing infrastructure conditions at the project site and on the freeway system would remain, with the exception of programmed improvements on SJCOG's Regional Transportation Plan (RTP) Tier 1 list. There would be no construction of a new interchange, nor associated ramps and infrastructure. Lammers Road would terminate north of I-205 at Grant Line Road and would not connect with its southern segment at Lammers Road and 11th Street. Local road improvements would be built to serve future development in the urban reserves north and south of I-205.

1.3.2 Build Alternatives

1.3.2.1 Alternative 1: New Spread Diamond Interchange at Lammers Road

This alternative would provide a new interchange at Lammers Road over I-205, with four new connection points to I-205. The existing partial 11th Street interchange to and from I-205 west would be retained. Lammers Road would be realigned as a six-lane arterial/expressway north of 11th Street with an overcrossing at I-205 and would extend north and realign with Byron Road. A spread diamond (Type L-2) interchange would be constructed for Lammers Road at I-205 approximately 0.8 mile east of the 11th Street interchange and 1.0 miles west of the Grant Line Road interchange. Auxiliary lanes would connect the ramps between Lammers Road and Grant Line Road in the westbound and eastbound directions. Local road improvements would include:

- Realignment and extension of Grant Line Road over Byron Road to connect with Lammers Road north of I-205.
- Extension of Commerce Way north of 11th Street to connect with the new alignment of Lammers Road south of I-205.
- Revised access to the Westgate neighborhood currently served by the existing Lammers Road.
- Local road north of I-205 to connect Lammers Road and Byron Road.

Structures. The Lammers Road overcrossing would be designed to accommodate the future widening of I-205 to ten lanes.

Local Streets. Modifications would be required for various local streets to accommodate the new interchange. Local streets would be impacted temporarily during construction to accommodate contractor access and complete construction tasks.

Pedestrian and Bicycle Facilities. Pedestrian facilities would be provided across I-205 on both sides of Lammers Road in conformity with the City's General Plan.

Drainage. Additional drainage improvements are required along the mainline due to the increase in paved surfaces and subsequent runoff. Drainage improvements include, but are not limited to, surface and subsurface drains and retention ditches along the auxiliary lanes between Lammers Road and Grant Line Road. Retention basins within the interchange area would be constructed to accommodate the storm runoff from the interchange ramps. There are no surface water bodies that are located within the project area, and hence no treatment best management practices (BMPs) are required for the project.

Park and Ride Facilities. 1-acre Park and Ride facilities would be provided in the vicinity of the project at the southeast corner of the eastbound ramp intersection.

Landscaping. Standard landscaping would be provided within the new interchange improvements, which may include trees and shrubs in accordance with Caltrans allowances. Along I-205, erosion control would be provided on embankment side slopes and ditches. Other landscaping would be provided in accordance with mitigation requirements (e.g., due to the loss of existing trees within the I-205 corridor). Replacement landscaping may occur at an offsite location.

1.3.2.2 Alternative 5A: Modified Eleventh Street Partial Cloverleaf Interchange

This alternative would construct a new partial cloverleaf interchange to replace the existing 11th Street ramps on I-205. The new interchange would be located approximately 2.3 miles east of the Mountain House Parkway interchange and 1.6 miles west of the Grant Line Road interchange. An auxiliary lane in the westbound direction along I-205 would connect the westbound Grant Line Road on-ramp to the westbound 11th Street exit ramp. Local road improvements would include:

- Realignment and extension of 11th Street to curve to the north west of Lammers Road to connect to Byron Road north of I-205.
- Realignment and extension of Grant Line Road over Byron road to connect with 11th Street north of I-205.
- Local road north of I-205 to connect 11th Street and Byron Road.

Structures. The 11th Street Overcrossing would be designed to accommodate the future widening of I-205 to ten lanes. The existing 11th Street westbound on-ramp overcrossing would be demolished.

Local Streets. Modifications would be required for various local streets to accommodate the new interchange. Local streets would be impacted temporarily during construction to accommodate contractor access and complete construction tasks.

Pedestrian and Bicycle Facilities. Pedestrian facilities would be provided to cross I-205 on both sides of 11th Street in conformity with the City's General Plan.

Drainage. Additional drainage improvements are required among the mainline due to the increase in paved surfaces and subsequent runoff. Drainage improvements include, but are not limited to, surface and subsurface drains and retention ditches along the auxiliary lanes and basins within the interchange area. There are no surface water bodies located within the project area, and hence no treatment BMPs are required for the project.

Park and Ride Facilities. 1-acre Park and Ride facilities would be provided in the vicinity of the project at the northwest corner of the Commerce Way and 11th Street intersection.

Landscaping. Standard landscaping would be provided within the new interchange improvements which may include trees and shrub in accordance with Caltrans allowances. Along I-205, erosion control would be provided on embankment side slopes and ditches. Other landscaping would be provided in accordance with mitigation requirements (e.g., due to the loss of existing trees within the I-205 corridor). Replacement landscaping may occur at an off-site location.

Chapter 2 Regulatory Setting

The following section defines the regulatory environment associated with water quality at the federal level, the state level and at the local level. Particularly this section defines the regulatory environment of Caltrans as it pertains to water quality.

2.1 Federal Regulations

2.1.1 Clean Water Act

There are several sections of the Clean Water Act (CWA) that pertain to regulating impacts to waters of the United States. Section 101 specifies the objectives of this Act, which are implemented largely through Title III (Standards and Enforcement) and Section 301 (Prohibitions). The discharge of dredged or fill material into waters of the United States is subject to permitting specified under Title IV (Permits and Licenses) of this Act and specifically under Section 404 (Discharges of Dredge or Fill Material) of the CWA. Section 401 (Certification) specifies additional requirements for permit review, particularly at the state level.

Section 404 of the CWA regulates placement of fill materials into the waters of the United States; Section 404 is administered by U.S. Army Corps of Engineers (USACE). Section 401 of the CWA requires that an applicant pursuing a federal permit to conduct any activity that may result in a discharge of a pollutant, must obtain a Water Quality Certification (or waiver). Water quality certification requires the evaluation of water quality considerations associated with dredging or placement of fill materials into waters of the United States. Water Quality Certifications are issued by one of the nine geographically separated Regional Water Quality Control Boards (RWQCB) in California. Under the CWA, the RWQCB must issue or waive a Section 401 Water Quality Certification for the project to be permitted under Section 404. The proposed project would be under the jurisdiction of the Central Valley RWQCB.

The 1972 amendments to the Federal Water Pollution Control Act established the National Pollutant Discharge Elimination System (NPDES) permit program to control discharges of pollutants from point source discharges, or discharges that one can point to as a known source of pollutants.

The 1987 amendments to the CWA created a new section of the Act devoted to stormwater permitting (Section 402[p]). The U.S. Environmental Protection Agency (EPA) has granted the

State of California primacy in administering and enforcing the provisions of the CWA and NPDES within state boundaries.

The State of California adopts water quality standards to protect beneficial uses of state waters as required by Section 303(d) of the CWA and the Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne Act). Section 303(d) of the CWA established the total maximum daily load (TMDL) process to guide the application of state water quality standards (see the discussion of state water quality standards below). In order to identify candidate water bodies for TMDL analysis, a list of water-quality limited segments was generated by the State Water Resources Control Board (State Water Board).

2.1.2 Federal Flood Insurance Program

Congress, alarmed by the increasing costs of disaster relief, passed the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. The intent of these acts is to reduce the need for large, public-funded flood control structures and disaster relief by restricting development on the floodplain.

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations, which limit development in floodplains. FEMA issues Flood Insurance Rate Maps (FIRMs) for communities participating in the NFIP. These maps delineate flood hazard zones in the community.

2.1.3 Executive Order 11988

Executive Order 11988 (Floodplain Management) addresses floodplain issues related to public safety, conservation, and economics. It generally requires federal agencies constructing, permitting, or funding projects within floodplains to:

- Avoid incompatible floodplain development.
- Be consistent with the standards and criteria of the National Flood Insurance Program.
- Restore and preserve the natural and beneficial floodplain values.

2.2 State Requirements

2.2.1 The Porter-Cologne Water Quality Control Act

The Porter-Cologne Act established the State Water Board and divided the state into nine regional basins, each with a water quality control board. State Water Board is the primary state agency responsible for protecting the quality of the state's surface and groundwater supplies.

Porter-Cologne Act authorizes State Water Board to draft state policies regarding water quality. It also authorizes State Water Board to issue waste discharge requirements for discharges to state waters. Porter-Cologne Act requires that State Water Board or one of the nine subsequent RWQCBs under the State Water Board to adopt water quality control plans (basin plans) for the protection of water quality. A basin plan must:

- Identify the beneficial uses of the water to be protected.
- Establish water quality objectives for the reasonable protection of the beneficial uses.
- Establish a program of implementation for achieving the water quality objectives.

These plans also provide the technical basis for determining waste discharge requirements, taking enforcement actions, and evaluating clean water grant proposals. Basin plans are updated and reviewed every 3 years.

NPDES permits issued to control pollution must implement requirements of the applicable regional basin plans.

2.2.2 Central Valley Regional Water Quality Control Board

Porter-Cologne Act provides for the development and periodic review of basin plans that designate the beneficial uses of California's major rivers and groundwater basins and that establish narrative and numerical water quality objectives for those waters. Beneficial uses represent the services and qualities of a water body (i.e., the reasons why the water body is considered valuable), while water quality objectives represent the standards necessary to protect and support those beneficial uses. Basin plans are primarily implemented by using the NPDES permitting system and updated by completing a TMDL analysis to regulate waste discharges so that water quality objectives are met (see discussion of the NPDES system in the CWA section above). Basin plans are updated every 3 years and provide the technical basis for determining waste discharge requirements and taking enforcement actions.

One method the Central Valley RWQCB uses to implement basin plan criteria is through the issuance of waste discharge requirements (WDRs), which are issued to any entity that discharges point-source effluent to a surface water body. The WDR permit also serves as a federally required NPDES permit (under the CWA) and incorporates the requirements of other applicable regulations.

2.3 Water Quality Objectives

The California Water Code, Division 7, Chapter 4, Section 13241 specifies that each RWQCB shall establish water quality objectives which, in the RWQCB judgment, are necessary for the reasonable protection of the beneficial uses and for the prevention of nuisance. The Central Valley RWQCB enforces water quality objectives for inland surface waters, wetlands, and ground waters as part of the Basin Plan. The statewide objectives for ocean waters under the State Water Board's *Water Quality Control Plan for Ocean Waters of California* (Ocean Plan) and the *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California* (Thermal Plan) apply to all ocean waters in the Region. The proposed Project does not include discharge of thermal waste or elevated temperature waste or discharge into ocean waters. Therefore, the Thermal Plan and Ocean Plan will not be discussed further.

The regional inland surface water quality objectives contained in the Central Valley RWQCB Basin Plan include: ammonia; bacteria, coliform; bioaccumulation; biochemical oxygen demand (BOD); biostimulatory substances; chemical constituents; chlorine, total residual; color; Exotic vegetation; floating material; methylene blue activated substances (MBAs); mineral quality; nitrogen (nitrate, nitrite); oil and grease; oxygen, dissolved (DO); pesticides; pH; polychlorinated biphenyls (PCBs); radioactive substances; solid, suspended, or settleable materials; taste and odor; temperature; toxicity; and turbidity.

The regional objectives for ground waters contained in the Basin Plan include: bacteria; chemical constituents and radioactivity; toxicity; mineral quality; nitrogen (nitrate, nitrite); and taste and odor.

2.4 Caltrans Statewide NPDES Permit

Caltrans Statewide NPDES Permit (NPDES No. 99-06-DWQ) for stormwater discharges was issued in 1999 and was recently updated (September 2009) to protect water quality. However, this new permit (NPDES 2009-0009-DWQ) will not take into effect until July 1, 2010. One method the NPDES permit regulates water quality is by assigning effluent and receiving water

limitations and requiring a Stormwater Pollution Prevention Plan (SWPPP) and a Spill Prevention and Countermeasure plan (SPCC) to protect water quality.

2.5 Caltrans Statewide Storm Water Management Plan

Caltrans Storm Water Management Plan (2003a) (CTSW–RT–02–008) describes a program to reduce the discharge of pollutants associated with the storm water drainage systems that serve highways and highway-related properties, facilities and activities. It identifies how Caltrans will comply with the provisions of the NPDES permit (Order No. 99-06-DWQ) (Permit issued by the State Water Board on July 15, 1999). The Permit requires that the previous edition of the Statewide SWMP be revised to include or describe procedures for implementing the requirements stated in several provisions of the Permit. This Statewide SWMP has been revised to show compliance with this requirement, although the format employed differs somewhat from the specific chapter designations outlined in the Permit.

This Statewide SWMP addresses the primary program elements of all Caltrans' activities, including:

- The Project Delivery Storm Water Management Program, which includes the Design Storm Water Management Program and the Construction Storm Water Management Program;
- The Maintenance Storm Water Management Program; and
- The Training and Public Education Program.

This Statewide SWMP also addresses assignment of responsibilities for implementing storm water management practices as well as monitoring (Monitoring and Research Program), program evaluation, and reporting activities.

2.6 CWA Section 402: Permits for Discharge to Surface Waters

CWA Section 402 regulates discharges to surface waters through the NPDES program, which is administered by the EPA. In California, the State Water Board is authorized by the EPA to oversee the NPDES program through the RWQCBs (see related discussion under "Porter-Cologne Water Quality Control Act"). The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits.

2.6.1 Dewatering Activities

While small amounts of construction-related dewatering are covered under the General Construction Permit, the RWQCB has also adopted a General Order for Dewatering and Other Low Threat Discharges to Surface Waters (General Dewatering Permit). This permit applies to various categories of dewatering activities and could apply to the proposed project, if construction required dewatering in greater quantities than that allowed by the General Construction Permit and discharged the effluent to surface waters. The General Dewatering Permit contains waste discharge limitations and prohibitions similar to those in the general construction permit. To obtain coverage, the applicant must submit a Notice of Initiation (NOI) and a pollution prevention and monitoring program (PPMP). The PPMP must include a description of the discharge location, discharge characteristics, primary pollutants, receiving water, treatment systems, spill prevention plans, and other measures necessary to comply with discharge limits. A representative sampling and analysis program must be prepared as part of the PPMP and implemented by the permittee, along with record keeping and quarterly reporting requirements during dewatering activities. For dewatering activities that are not covered by the General Dewatering Permit, an individual NPDES permit and WDRs must be obtained from the RWQCB. The General Dewatering Permit may be applicable to Caltrans and its contractors where excavation activities may explore the water table.

Chapter 3 Affected Environment/Existing Conditions

The following section addresses existing conditions related to hydrology, water quality, and flooding. The section includes study methodology, topography and climate, population and land use, and a detailed discussion of the existing surface water and groundwater features that may be effected by the proposed project.

3.1 Study Methods and Procedures

Key information that will be used for this analysis will include the Caltrans Stormwater Management Plan and the Caltrans NPDES Statewide Permit. Other information used includes Central Valley RWQCB Basin Plan and the CWA Section 303(d) List of Impaired Waters. In addition, parts of this evaluation were also based on professional knowledge and expertise.

3.2 Natural Setting

3.2.1 Topography (Soils, Geology, and Erosion Potential)

The topography in the proposed project area is considered to be flat (Caltrans, Storm Water Data Report 2009). According to the results of the geotechnical investigations presented in the Geotechnical Design and Materials Report prepared by Parikh Consultants in February 2009, the site generally consists of interbedded lean clay/silt and silty sand/poorly graded sand layers to a maximum depth of 30 feet. Additionally, the soil has a low permeability rate of less than 0.1 inch per hour (Caltrans, Storm Water Data Report 2009).

3.2.2 Climate and Precipitation

The proposed project is located in San Joaquin County, which experiences a Mediterranean climate with hot, dry summers and cooler winters. The California Irrigation Management Information System (CIMIS) monitors climate and precipitation at various locations throughout California. Station 70 is the closest CIMIS station to the proposed project and is located in Manteca, California. The data in Table 3-1 is presented as monthly minimum, average, and maximum precipitation in inches from 1987 to 2009. The minimum precipitation is generally the same since the lower the recordable precipitation, the more inaccurate the measuring becomes.

However, the minimum September precipitation was 0.02 inches, while the maximum August precipitation was 0.37 inches.

Table 3-1. Precipitation at CIMIS Station 70 in Manteca California from 1987 to 2009

Month	Precipitation (inches)		
	Minimum	Average	Maximum
January	0.04	0.28	1.73
February	0.04	0.25	1.46
March	0.04	0.22	1.38
April	0.04	0.20	1.61
May	0.04	0.25	1.26
June	0.04	0.10	0.24
July	0.04	0.08	0.12
August	0.04	0.12	0.37
September	0.02	0.29	1.18
October	0.04	0.27	1.65
November	0.04	0.22	1.22
December	0.04	0.23	2.09
Total	0.46	2.52	14.31

Source: California Irrigation Management Information System 2009.

3.3 Water Resource Setting

The following sections describe the water resources at the regional level and the resources that occur with the Environmental Study Limits (ESL).

3.3.1 Regional Hydrology

The two major rivers near the proposed project are the San Joaquin River and Old River. The San Joaquin River flows from south to north east of Tracy (approximately 8 miles east of the project) until it enters the South Delta area. Old River connects to the San Joaquin River near Mossdale and meanders north of the project (approximately 2 miles) until it also meets the South Delta area north of the proposed project (Figure 3-1). The Regional Water Board assigns Beneficial Uses to certain water bodies across the state. The San Joaquin River (SJR) is listed as having Beneficial Uses for Municipal Water Supply (MUN), Irrigation & Stock Watering (AGR), Industrial (PROC), Contact (REC-1), warm water habitat (WARM), migration (MGR), and wild habitat (WILD). Since Old River is considered to be part of the South Delta area, the Beneficial Uses of the Delta apply to Old River. The Delta Beneficial Uses include all of the above listed as well as industrial water supply (IND), and navigable waters (NAV).

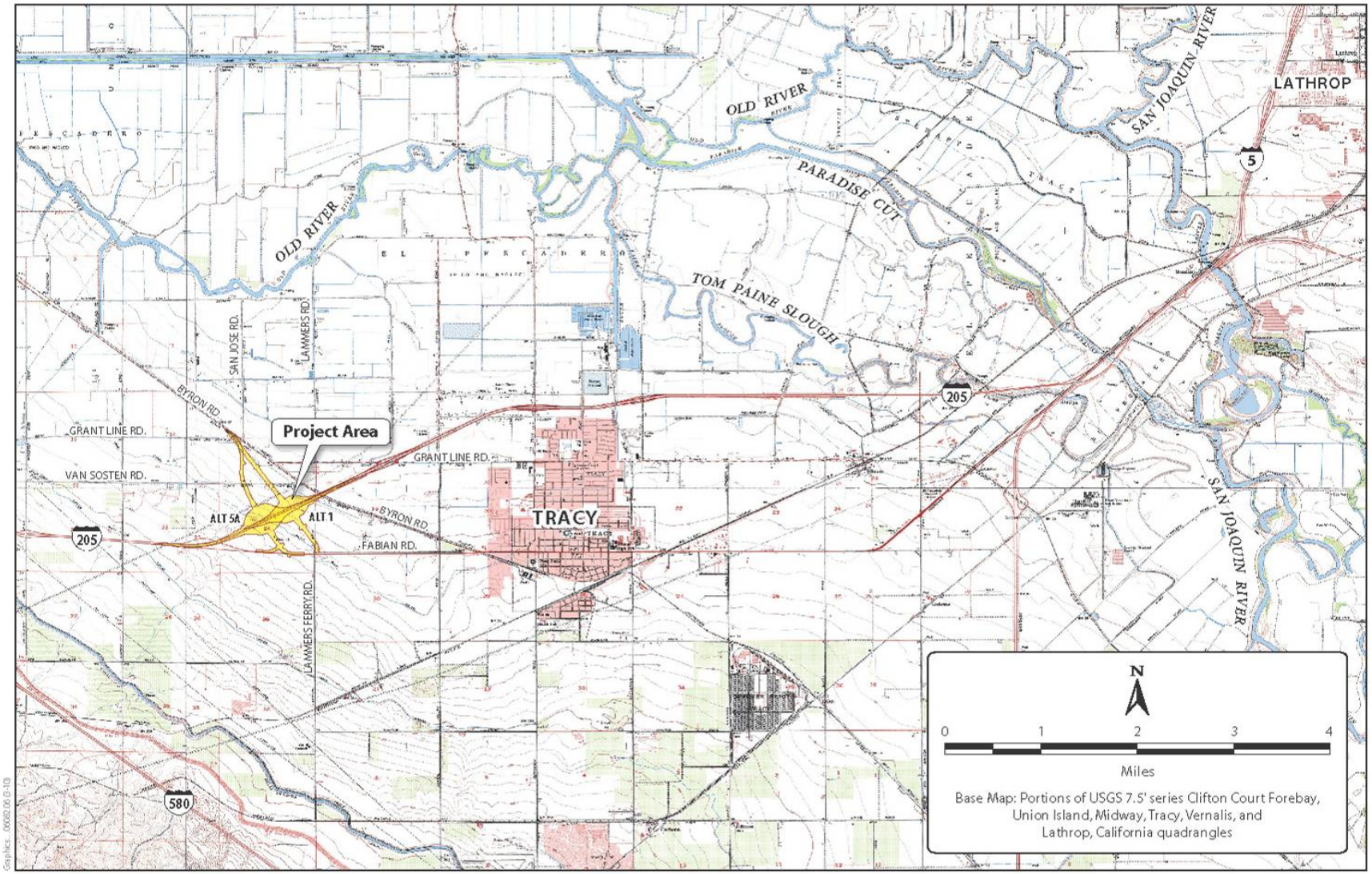

Figure 3-1 Regional Hydrology

3.3.2 Possible Pollutants Affecting Water Quality

The U.S. Department of Transportation completed a study in 1996 to identify possible pollutants that may impact water quality from roadways. The following table (Table 3-2) contains a list of pollutants known to contribute to water quality related issues and are sourced to roadways.

Table 3-2. Known Water Quality Concerns from Roadway Storm Water Runoff

Constituents	Primary Sources
Particulates	Pavement wear, vehicles, atmosphere, maintenance, snow/ice abrasives, sediment disturbance
Nitrogen, Phosphorus	Atmosphere, roadside fertilizer application, sediments
Lead	Auto exhaust, tire wear, lubricating oil and grease, bearing wear, atmospheric fallout
Zinc	Tire wear, motor oil, grease
Iron	Auto body rust, steel highway structures, moving engine parts
Copper	Metal plating, bearing and bushing wear, moving engine parts, brake lining wear, fungicide and insecticide application
Cadmium	Tire wear, insecticide application
Chromium	Metal plating, moving engine parts, brake lining wear
Nickel	Diesel fuel and gasoline, lubricating oil, metal plating, bushing wear, brake lining wear, asphalt paving
Manganese	Moving engine parts
Bromide	Exhaust
Cyanide	Anticake compound used to keep deicing salt granular
Sodium, Calcium	Deicing salts, grease
Chloride	Deicing salts
Sulphate	Roadway bed, fuel, deicing salts
Petroleum	Spills, leaks or blow-by of motor lubricants, antifreeze and hydraulic fluids, asphalt leachate
PCBs, Pesticides	Spraying of highway rights-of-way, atmospheric deposition, PCB catalyst in synthetic tires
Pathogenic Bacteria	Soil litter, bird droppings, trucks hauling livestock/stockyard waste
Rubber	Tire wear
Asbestos*	Clutch and brake lining wear

Source: U.S. Department of Transportation. Federal Highway Administration. Publication No. FHWA-PD-96-032. June 1996.
Note:
* No mineral asbestos has been identified in runoff; however some breakdown products of asbestos have been measured.

3.4 Existing Surface Water Resources Environment

The major surface water resources within the area are the San Joaquin River, and Old River. The project also crosses the Lower Main drainage canal (see Figure 3-2); however, stormwater will not be directed to this canal.

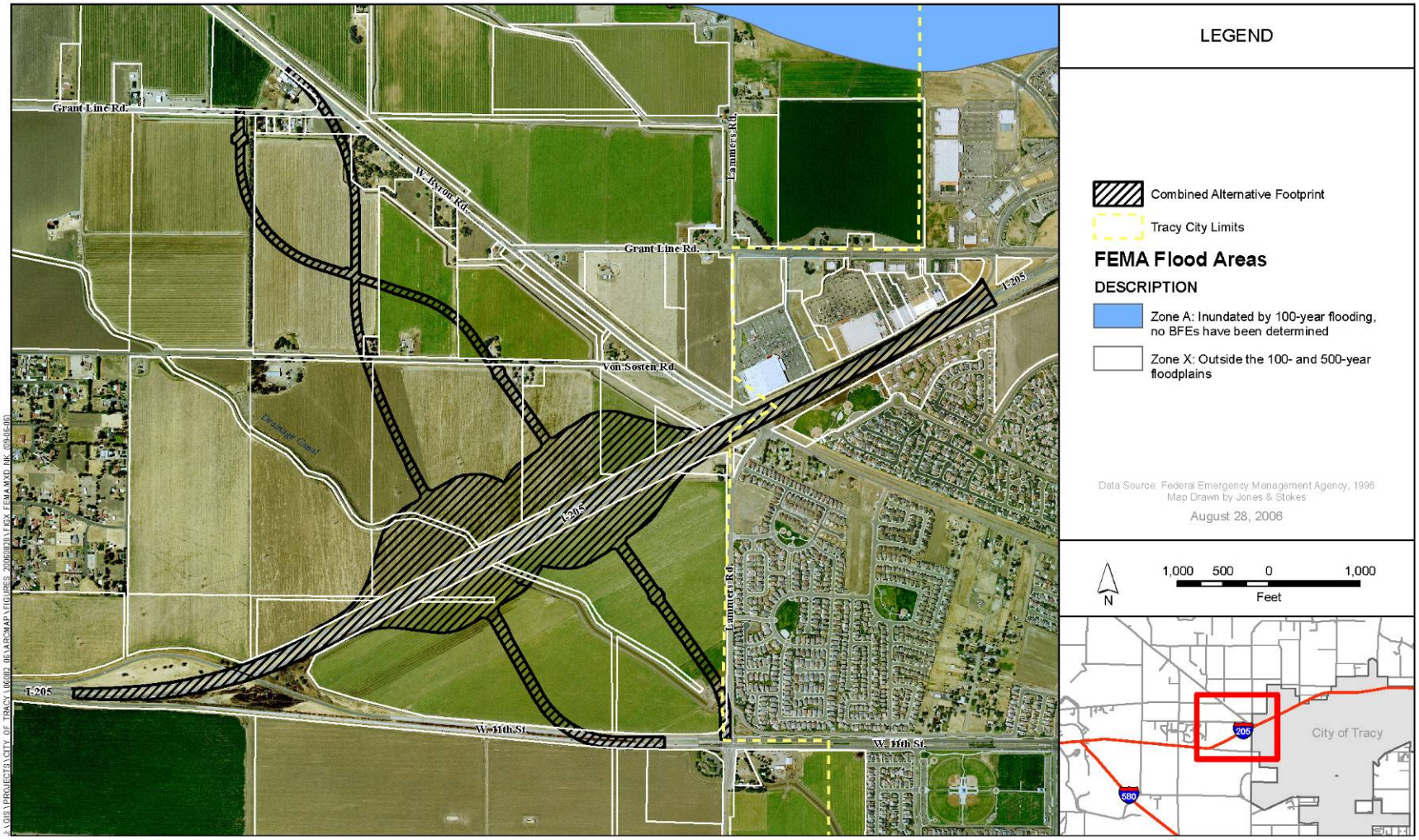

Figure 3-2 Floodplains and Surface Water

3.4.1 Surface Water Resources

The first unnamed irrigation canal, which begins south of Grant Line Road, parallels Byron Road, and ends north of I-205, supports areas of both freshwater marsh and open water. The mean width of this canal is approximately 7 feet and its banks are unlined. The supply of water from the Lower Main Canal into the first unnamed irrigation canal appears to be perennial based on observations of flowing water during the wetland delineation fieldwork conducted for the project (ICF International 2010). The second unnamed irrigation canal is located parallel to the north side of Von Sosten Road and has an average width of 7.5 feet. This unnamed irrigation canal receives water from the Lower Main Canal and conveys it east before disappearing underground approximately 2,000 feet east of where the Lower Main Canal crosses Von Sosten Road.

The Lower Main Canal is the largest unvegetated irrigation feature in the study area and is unlined. The portion of the Lower Main Canal in the study area is approximately 18 feet wide and encompasses an area of 1.14 acres. The Lower Main Canal carries water from the Old River and distributes it to agricultural lands west and east of the City before ultimately reconnecting to the Old River. The Lower Main Canal also distributes water to the two unnamed irrigation canals.

The study area contains six irrigation ditches encompassing a total area of 0.49 acre. In general, the irrigation ditches are unlined, lack a well-defined bed and bank, are relatively narrow (i.e., less than 4 feet wide), and contain structures designed to facilitate movement of a relatively small amount of water (i.e., weirs and hoses). Five of the six irrigation ditches (0.27 acre) were dry or contained only small amounts of water at the time of site visits. Only one of the irrigation ditches (0.22 acre), which is located in the pasture south of I-205, appears to have a perennial water supply.

3.4.2 Existing Surface Water Quality

Old River is the closest waterway to the proposed project and according to the most recent CWA Section 303(d) List for Old River; it is impaired for low dissolved oxygen (DO) (State Water Resources Control Board 2006). The San Joaquin River is the main stem river that drains from south to north into the South Delta area. The San Joaquin River is broken up into multiple segments, each of which is listed on the most recent CWA Section 303(d) List. The segment of the San Joaquin River from the Stanislaus River to the Delta Boundary is listed as being

impaired for DDT, Group A Pesticides, Mercury. Toxaphene, and Unknown Toxicity (State Water Resources Control Board 2006).

3.5 Existing Groundwater Resources Environment

The following sections present information about the existing groundwater within the project area.

3.5.1 Study Area and Recharge Areas

The project is located within the San Joaquin Valley Groundwater Basin, Tracy Subbasin (Basin Number 5-22.15).

3.5.1.1 Tracy Subbasin (Basin Number 5-22.15)

The Tracy Subbasin is located in San Joaquin, Contra Costa and Alameda counties and has a total surface area of approximately 345,000 acres (539 square miles). Review of hydrographs for the Tracy Subbasin indicate that except for seasonal variation resulting from recharge and pumping, the majority of water levels in wells have remained relatively stable over at least the last 10 years (California Department of Water Resources 2006). There are no published groundwater storage values for the entire basin; however, the estimated groundwater storage capacity is 4,040,000 acre-feet (af) for both the Tracy-Patterson Subbasins. Since the Tracy Subbasin comprises roughly one third of the Tracy-Patterson Storage Unit, it can be inferred that the Tracy Subbasin has a rough storage capacity of 1,300,000 af (California Department of Water Resources 2006).

In general, the northern part of the Tracy Subbasin is characterized by a sodium water type and the southern part of the subbasin is characterized by a calcium-sodium type water. The northern part of the subbasin is also characterized by a wide range of anionic water types including: bicarbonate; chloride; and mixed bicarbonate-chloride types. Major anions in the southern part of the subbasin include sulfate-chloride and bicarbonate-chloride. Dissolved solids concentrations in well water sampled in the subbasin range from 50 to 3,520 milligrams per liter (mg/L) and averaged 463 mg/L. Based on the analysis of 36 water supply wells in the subbasin, total dissolved solids (TDS) ranged from 210 to 7,800 mg/L and averaged about 1,190 mg/L. Areas of poor water quality exist throughout the subbasin. Elevated chloride occurs in several areas along the western side of the subbasin and in the vicinity of Tracy (California Department of Water Resources 2006).

3.6 Biotic/Aquatic Considerations

A *Draft Natural Environment Study* was prepared for the proposed project (ICF Jones & Stokes 2010). The study included information on biological resources and habitats that may support special-status species that may be located within the biological study area (BSA). The study does not name species that rely on surface water resources provided in the project area.

Chapter 4 Environmental Consequences/Project Impacts

The following sections present potential temporary and permanent water quality impacts anticipated from the proposed project activities and BMPs which will help mitigate any water quality related impacts from the project.

4.1 Water Quality Environment Checklist

This Water Quality Assessment Checklist is a summary of the storm water quality evaluation process, which is presented here in CEQA Environmental Checklist Form.

The following is a list of questions from the Hydrology and Water Quality Checklist, which can be found in Section 8 of the California CEQA Checklist Form. The variety of possible answers includes: "Potentially Significant Impact," "Less than Significant with Mitigation Incorporated," "Less than Significant Impact," and "No Impact."

Impact WQ-1: Violate any water quality standards or waste discharge requirements

Less than Significant Impact with Mitigation

The potential primary impacts to water quality are eroded soil or suspended solids being introduced into the waterways. In addition, operational related water quality contaminants of concern, such as the contaminants found in Table 3-2 could impact water quality. The proposed project shall be regulated under Caltrans' General NPDES Permit, and if necessary, the CWA Section 402 General Dewatering Permit.

Per Caltrans' General Construction NDPES permit, water quality pollution minimization measures would include items such as: requiring the contractor to submit a SWPPP prior to the start of construction and implementing site design measures, source control measures, and storm water treatment measures. The proposed project would comply with all water quality standards and waste discharge requirements.

If dewatering is required above the amount covered in Caltrans' General Construction Permit, a NPDES Low Threat Discharge and Dewatering Permit would be required. This permit requires the submission of a NOI and a Pollution Prevention and Monitoring Program (PPMP). The PPMP is to include a description of the discharge location and characteristics, primary pollutants, receiving water, treatment systems, spill prevention plans, and other measures necessary to

comply with discharge limits. It must include representative sampling and analysis program, as well as record keeping and a quarterly monitoring report.

However, the proposed project will increase the amount of impervious surface by 23.7 acres, which would result in the potential for additional roadway contaminants to affect water quality. Implementation of Mitigation Measure WQ-1 would make this impact less than significant.

Impact WQ-2: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be 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)

Less than Significant Impact

Groundwater recharge is reduced when the ground is compacted, or when it is covered with impervious material such as most asphalt and concrete, reducing natural infiltration potential within the project area. The proposed project will increase the amount of impervious surface by 23.7 acres. However, the Tracy Subbasin is 345,000 acres and this increase would be less than 1% of the groundwater basin's surface area. As a result, this increase in impervious surface would not significantly impact groundwater recharge potential or affect the aquifer production. In addition, all storm water runoff will be directed to vegetated retention basins that are designed to increase groundwater recharge at specific locations in the project area. This impact is considered less than significant.

Impact WQ-3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on-or off-site

Less the Significant Impact

The proposed project includes construction of new vegetative retention basins flow dissipation devices. This would not change this existing drainage pattern of the site or area. The proposed project would not alter the existing drainage pattern and is not located near a stream or river, and therefore would not result in substantial erosion or siltation on-or off-site. The impact is considered less than significant.

Impact WQ-4: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site

Less than Significant Impact

As described above the project is not altering the existing drainage pattern. In addition, the project area is not located near a stream or a river. All storm water would be directed towards vegetative retention basins and would not enter the small unnamed drainage that the project crosses. This impact is considered less than significant.

Impact WQ-5: Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage or provide substantial additional sources of polluted runoff

Less than Significant Impact

Potential sources of pollutants from the roadway include: TSSs, nutrients, pesticides, particulate metals, dissolved metals, pathogens, litter, biochemical oxygen demand, and TDSs. To ensure that construction runoff does not exceed the capacity of existing stormwater drainage or result in polluted runoff, appropriate Waste Management BMPs, Temporary Sediment Control BMPs, would be selected in compliance with Caltrans' NPDES permit. In addition, implementation of Mitigation Measure WQ-1 would make these impacts less than significant (See Chapter 5 for a list of Caltrans BMPs).

Impact WQ-6: Otherwise substantially degrade water quality?

Less than Significant Impact

The primary potential for impacts to water quality is eroded soil or suspending solids being introduced into waterways. The proposed project will not discharge to any water ways or drainages and the project and will incorporate appropriate BMPs as required under Caltran's General Construction NPDES Permits. In addition, implementation of Mitigation Measure WQ-1 would make any permanent impacts to water quality less than significant.

4.2 Temporary Impacts

4.2.1 Water Resources

The water resources in the vicinity of the proposed project include multiple unnamed canals that the project either crosses or runs parallel to. Temporary BMPs including but not limited to methods to limit erosion, sedimentation, and waste management would be selected to ensure construction would not impact water resources. Construction/temporary impacts would not significantly impact beneficial uses of these canals. Although these types of waterbodies do not have specific beneficial uses assigned by the Regional Board, Old River does have beneficial uses and the Lower Main Canal is tributary to Old River. In addition, the proposed project would include treatment BMPs to ensure pollutants don't affect any of the canal's water quality.

4.2.2 Groundwater

Impacts to groundwater can occur from an increase in impervious surfaces and/or depleting the groundwater supply. Impacts to groundwater quality can occur from an increase in the introduction of harmful constituents to the groundwater. The project would not include increased pumping that would cause depletion in groundwater supply. The use of BMPs including waste management and dewatering techniques, and the required completion and implementation of a SPCC would prevent the contamination of groundwater.

4.2.3 Storm Water

The proposed project is subject to the requirement of the Caltrans' Statewide NPDES Permit including compliance with Caltrans' Statewide Storm Water Management Plan and General Construction Permit. This NPDES permit requires the creation of a SWPPP and SPCC to ensure water quality is maintained from storm water. In addition, the vegetative retention basins will be designed to handle the storm water flows so as to not cause a discharge to any receiving water body including the small unnamed drainage that the project crosses.

4.3 Permanent Impacts

The proposed project does not discharge into any waterway and will not result in any permanent impacts to receiving waters or waters of the United States.

Chapter 5 Avoidance, Minimization, and/or Mitigation Measures

5.1 List of BMPs and Avoidance/Minimization Measures

The following sections present any mitigation measures and available BMPs for use in the proposed project. The appropriate BMPs will be chosen when the project needs are more specifically defined.

Mitigation Measure WQ-1: Construct Permanent Water Quality BMPs to control and Treat Storm Water Runoff

In the event that the stormwater runoff cannot be contained onsite, and a discharge must occur, then the applicant will need to construct permanent water quality BMPs that will filter any contaminants prior to discharge. Appendix B of the Caltrans Stormwater Quality Handbook (California Department of Transportation 2007) cites different types of BMPs that should be used as permanent water quality control devices. Caltrans specifically targets pollutants that have been identified or characterized in runoff studies to be discharging with a load or concentration that commonly exceeds allowable standards and which is considered treatable by currently available Department-approved treatment BMPs. These contaminants are referred as Targeted Design Constituents (TDC). TDCs generally consist of nitrogen; total copper; dissolved copper; total lead; dissolved lead; total zinc; dissolved zinc; sediments; general metals [unspecified metals] (California Department of Transportation 2007). A project must consider treatment to target a TDC when an affected water body within the project limits (or with the sub-watershed as defined by the Water Quality Planning Tool) is on the 303(d) list for the one or more of these constituents.

The following list describes the recommended water quality treatment BMPs that are also included in Appendix B of the Caltrans Stormwater Quality Handbook (California Department of Transportation 2007):

- **Biofiltration Strips and Swales—**Biofiltration Strips are vegetated land areas, over which stormwater flows as sheet flow. Biofiltration Swales are vegetated channels, typically configured as trapezoidal or v-shaped channels that receive and convey stormwater flows while meeting water quality criteria. Strips and swales are effective at trapping litter, total suspended sediment (TSS) and particulate metals. In this case, such BMPs would be effective at removing copper, chromium, lead, zinc and sediment.

- **Infiltration Device and or Detention Device—**If design of the project allows for space to build infiltration or detention devices, then these BMPs may prove to be superior as it will not contribute to any known surface water quality impairment.
- **Media Filter and or Treatment Train—**If stormwater flow is going to be concentrated and redirected to one area or to multiple areas and have a substantial flow that could transport sediment and metals then a Media Filter should be installed in strategic locations to filter water. Media Filters can remove sediment and metals through filtering technologies.

The following section defines temporary BMPs and other permanent BMPs that the project could incorporate into the project design features to mitigate water quality related issues with the proposed project.

5.1.1 List of Temporary Measures or BMPs

Caltrans has a list of approved Construction Site BMPs, or temporary control practices that are the best conventional technology/best available technology - based BMPs that are consistent with the BMPs and control practices required under the General Permit. BMPs would be implemented based on their applicability to the proposed project. The list provided below includes possible BMPs, however site specific BMPs could be developed depending on project need.

- Temporary Soil Stabilization BMPs
- Scheduling
- Preservation of Existing Vegetation
- Hydraulic Mulch
- Hydroseeding
- Soil Binders
- Straw Mulch
- Geotextiles, Plastic Covers, and Erosion Control Blankets/Mats
- Wood Mulching
- Earth Dikes/Drainage Swales & Lined Ditches
- Outlet Protection/Velocity Dissipation
- Stabilized Construction Roadway
- Entrance/Outlet Tire Wash
- Non-Storm Water Management BMPs
- Water Conservation Practices
- Dewatering Operations
- Paving and Grinding Operations
- Temporary Stream Crossing
- Clear Water Diversion
- Illicit Connection/Illegal Discharge Detection and Reporting
- Potable Water/Irrigation
- Vehicle and Equipment Cleaning
- Vehicle and Equipment Maintenance

Devices

- Slope Drains
- Streambank Stabilization
- Temporary Sediment Control BMPs
- Silt Fence
- Sediment/Desilting Basin
- Sediment Trap
- Check Dam
- Fiber Rolls
- Gravel Bag berm
- Street Sweeping and Vacuuming
- Sandbag Barrier
- Straw Bale Barrier
- Strom Drain Inlet Protection
- Wind Erosion BMPs
- Wind Erosion Control
- Tracking Control BMPs
- Stabilized Construction Entrance/Exit
- Pile Driving Operations
- Concrete Curing
- Material and Equipment Use Over Water
- Concrete Finishing
- Structure Demolition/Removal Over or Adjacent to Water
- Waste Management and Materials Pollution Control BMPs
- Material Delivery and Storage
- Material Use
- Stockpile Management
- Spill Prevention and Control
- Hazardous Waste Management
- Contaminated Soil Management
- Concrete Waste Management
- Sanitary/Septic Waste Management
- Liquid Waste Management

5.1.2 List of Permanent Design Features or Treatment BMPs

Design Pollution Prevention BMPs are source control BMPs used to prevent the pollutants from entering into Storm Water discharges. Treatment BMPs are used to remove pollutants from storm water discharges (Caltrans 2003b).

- Design Pollution Prevention BMPs
- Consideration of downstream effects related to potentially increased flow
- Peak Flow Attenuation Basins
- Preservation of existing vegetation

- Concentrated Flow Conveyance Systems
- Ditches, Berms, Dikes and Swales
- Overside Drains
- Flared Culvert End Sections
- Outlet Protection/ Velocity Dissipation Devices
- Slope/Surface Protection Systems
- Vegetated Surfaces
- Hard Surfaces
- Approved Treatment Control BMPs
- Biofiltration: strips/swales
- Infiltration basins
- Detention devices
- Media filters
- Treatment train

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