

WATER RESOURCES AND WATER QUALITY TECHNICAL REPORT

San Diego Freeway (I-405) Improvement Project
SR-73 to I-605

Orange and Los Angeles Counties

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Summary

This report assesses potential impacts to surface waters, groundwater, flooding, water quality, and designated beneficial uses that could result from the proposed construction and operation of the I-405 Improvement Project.

By following the guidelines and regulations established by the National Pollutant Discharge Elimination System (NPDES), and with implementation of Best Management Practices (BMPs), the effects to water quality from construction and operation of the proposed project would be less than significant. A Storm Water Pollution Prevention Plan (SWPPP) would be prepared and implemented under the State's NPDES General Permit for Discharges Associated with Construction Activities. The SWPPP would identify BMPs to minimize erosion and ensure the proper handling and storage of materials that may have the potential to impact water quality. During construction, materials would be stored properly to avoid impacting the receiving waters. During the preliminary project design, various Treatment BMPs were assessed to determine their applicability to the proposed project based on identified site-specific pollutants, project design features, and site conditions, including available right-of-way (ROW). The applicability of all nine California Department of Transportation (Caltrans)-approved Treatment BMPs were analyzed as part of the Project Approval/Environmental Document (PA/ED) process, and it was determined that this project presents opportunities for implementation of Treatment BMPs at various locations throughout the alignment. With implementation of Treatment BMPs, Design Pollution Prevention BMPs, and Temporary Construction Site BMPs, the effects to water quality associated with construction and operation of the proposed project would be less than significant.

In conclusion, the I-405 Improvement Project would not result in significant and/or adverse effects to water resources or water quality.

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List of Abbreviated Terms

°F	degrees Fahrenheit
BMPs	Best Management Practices
Caltrans	California Department of Transportation
CDFG	California Department of Fish and Game
CDPH	California Department of Public Health
CFR	<i>Code of Federal Regulations</i>
CGP	Construction General Permit
CWA	Clean Water Act of 1972
DAMP	Drainage Area Management Plan
DSA	disturbed soil area
EPA	United States Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
ft	feet
GP	general purpose
HOV	high-occupancy vehicle
I-405	Interstate 405
I-605	Interstate 605
LID	low impact development
LUSTs	leaking underground storage tanks
MEP	Maximum Extent Practicable
mi	miles

MTBE	methyl tributyl ethylene
MVP	maintenance vehicle pullouts
NDMA	N-nitrosodimethylamine
ng/L	nanograms per liter
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
OCFCD	Orange County Flood Control District
OCSD	Orange County Sanitation District
OCTA	Orange County Transportation Authority
OCWD	Orange County Water District
PA/ED	Project Approval/Environmental Document
PCBs	polychlorinated biphenyls
PM	Post Mile
PS&E	plans, specifications, and estimates
RCB	reinforced concrete box
ROW	right-of-way
RWQCB	Regional Water Quality Control Board
SAR	Santa Ana River
SR	State Route
SSPs	standard special provisions
SWMP	Storm Water Management Plan
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TDC	Targeted Design Constituent

TMDL	total maximum daily load
UPRR	Union Pacific Railroad
USACE	United States Army Corps of Engineers
WPC	Water Pollution Control
WQMP	Water Quality Management Plan

Chapter 1 Project Description and Alternatives

1.1 Purpose of Report

The objectives of the Water Resources and Water Quality Technical Report are to describe existing water resources, determine if potential project impacts on water resources would be adverse based on preliminary project information, and identify feasible mitigation measures. This report discusses how the project would increase the amount of impervious surface area and potentially increase runoff volumes and the amount of water percolating into the local groundwater basin. It also discusses how the project may generate additional vehicle pollutants, such as oil and grease, which could be carried by surface flows into local surface drainages and groundwater basins.

1.2 Project Description

The California Department of Transportation—District 12 (Caltrans), in cooperation with the Orange County Transportation Authority (OCTA), proposes to improve mainline freeway and interchanges on Interstate 405 (I-405) in Orange County for approximately 16 miles (mi). The proposed project is primarily located in Orange County, California, on I-405 (ORA PM 9.3/24.2; LA PM 0.0/1.2) between State Route (SR)-73 (ORA PM R27.2/R27.8) and Interstate 605 (I-605) (ORA PM 3.5/R1.6); LA PM R0.0/R1.2). Encroachments into Los Angeles County and work on SR-22 (ORA PM R0.7/R3.8 and R0.5/R0.7) are associated with signing and striping to accommodate the transition from the existing to proposed facility.

Three build alternatives and a No Build Alternative were identified to carry forward for full environmental impact analysis. These alternatives have been evaluated based on the project purpose and need. The total length of the project is approximately 14 mi. The entire project area is located in Orange County, as shown in Figure 1.

1.2.1 Project Alternatives

1.2.1.1 Common Design Features of the Build Alternatives

Alternatives 1, 2, and 3 would include the following features:

- One general purpose (GP) lane would be added in each direction of I-405 from Euclid Street to the I-605 interchange.



Figure 1 Project Location Map

- Travel lanes on the I-405 mainline would be 12 feet (ft) wide, and right side shoulders would be 10 ft wide.
- The pedestrian bridge and local street overcrossings proposed for complete replacement under Alternatives 1, 2, and 3 are the following:
 - Ward Street
 - Talbert Avenue
 - Brookhurst Street
 - Slater Avenue
 - Bushard Street
 - Warner Avenue
 - Magnolia Street
 - Pedestrian overcrossing near Heil Avenue
 - Newland Street
 - Edinger Avenue
 - McFadden Avenue
 - Bolsa Avenue
 - Goldenwest Street
 - Edwards Street
 - Westminster Boulevard
 - Springdale Street
 - Bolsa Chica Road
- The Euclid Street/Ellis Avenue undercrossing bridge would be modified and extended.
- Two railroad overheads would be modified and extended.¹
- Each build alternative would include interchange reconfigurations at Euclid Street, Ellis Avenue, Brookhurst Street, Magnolia Street, Warner Avenue, Beach Boulevard, and Westminster Boulevard.
- Maintenance vehicle pullouts (MVP) would be included in various locations under each build alternative.

¹ The freeway passes over the Union Pacific Railroad (UPRR) on the Bolsa Overhead (Bridge No. 55-269 at PM 17.21) and the U.S. Navy Railroad on the Navy Overhead (Bridge No. 55-272 at PM 18.36).

1.2.1.2 Unique Features of Build Alternatives

Alternative 1 – Add One GP Lane in Each Direction

Alternative 1 would add a single GP lane in each direction of I-405 from Euclid Street to the I-605 interchange.

Alternative 1 would provide a full standard highway cross section, with 12-ft-wide mainline travel lanes, as well as 10-ft-wide shoulders on the left (inside) and right (outside) sides in both directions.

Alternative 2 – Add Two GP Lanes in Each Direction

Alternative 2 would add one GP lane in each direction of I-405 from Euclid Street to the I-605 interchange (as in Alternative 1), plus add a second GP lane in the northbound direction from Brookhurst Street to the SR 22/7th Street interchange and a second GP lane in the southbound direction from the Seal Beach Boulevard on-ramp to Brookhurst Street.

Alternative 2 would provide a full standard highway cross section, with 12-ft-wide mainline travel lanes and shoulders on the left and right sides in both directions. Right-side (outside) shoulders would be 10 ft wide, while left-side (inside) shoulders would have a maximum width of 10 ft with a provision for a widened left shoulder for high-occupancy vehicle (HOV) enforcement areas under consideration.

Alternative 3 – Express Facility

Alternative 3 would add one GP lane in each direction of I-405 from Euclid Street to the I-605 interchange (as in Alternatives 1 and 2), plus add a tolled express lane in each direction of I-405 from SR 73 to I-605. The tolled express lane would be placed beside the existing HOV lane in each direction. The existing HOV lanes and new toll lanes would be managed jointly as an Express Lane Facility with two lanes in each direction.

Alternative 3 would provide a full standard highway cross section, with 12-ft-wide mainline travel lanes and shoulders on the left and right sides in both directions. Right-side (outside) shoulders would be 10 ft wide, while left-side (inside) shoulders would have a maximum width of 10 ft with a provision for a widened left shoulder for HOV enforcement areas under consideration. The joint HOV/toll lane Express Lane Facility would be separated from the GP lanes by a 1-ft to 4-ft buffer.

1.2.1.3 No Build (No Action) Alternative

The No Build Alternative provides a “baseline” for comparing impacts associated with the build alternatives because environmental review must consider the effects of not implementing the proposed project. The Project Baseline conditions under the No Build Alternative would provide no additional lanes or interchange improvements to the I-405 corridor. The project area would continue to operate with no additional improvements and would not achieve the project’s stated purpose and need.

1.3 Project Purpose

The purpose of the proposed action is to:

- Add capacity and reduce congestion on the GP and HOV lanes along the entire I-405 corridor from SR 73 to I-605;
- Enhance interchange operations;
- Increase mobility, improve trip reliability, maximize throughput, and optimize operations;
- Implement strategies that ensure the earliest project delivery; and
- Enhance safety.

1.4 Project Schedule

A 60-month construction period is scheduled to begin in June 2015 and be complete by June 2020.

Chapter 2 Affected Environment

2.1 Applicable Regulations, Plans, and Policies

2.1.1 Federal Regulations

2.1.1.1 Clean Water Act

The primary federal law governing water quality is the Clean Water Act (CWA) of 1972. This Act provides for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. The CWA emphasizes technology-based (i.e., end-of-pipe) control strategies and requires discharge permits to use public resources for waste discharge. The Act also limits the amount of pollutants that may be discharged and requires wastewater to be treated with the best treatment technology economically achievable regardless of receiving water conditions.

The 1987 amendments to the CWA include Section 402(p), which establishes a framework for regulating municipal and industrial storm water discharges. The amendment also provides a framework for regulating storm water runoff from construction sites. On November 16, 1990, the United States Environmental Protection Agency (EPA) published final regulations that established requirements for storm water permits.

In 1998, Section 303(d) was amended to the CWA. This section requires the State to identify and maintain a list of water bodies that do not meet water quality standards and to implement a total maximum daily load (TMDL) program for impaired water bodies.

Applicable sections of the CWA include:

- Sections 303 and 304 – Provide for water quality standards, criteria, guidelines, prioritize water bodies that are not meeting their beneficial uses on the 303(d) List and develop plans with pollutant load limitations through TMDLs.
- Section 401 – Requires an applicant for any project that proposes an activity that may result in a discharge to waters of the United States to obtain certification from the state that the discharge would comply with other provisions of the Act. For the proposed project a 401 Certification would be obtained from the Santa Ana RWQCB.

- Section 402 – Establishes the National Pollutant Discharge Elimination System (NPDES) system, a permitting system for the discharge of any pollutant (except for dredge or fill material) into waters of the United States. This permitting program is administered by the California State Water Resources Control Board (SWRCB) and its Regional Boards.
- 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 United States Army Corps of Engineers (USACE).

2.1.1.2 Executive Order 11988: Floodplain Management

Executive Order 11988 (Floodplain Management), which was issued by President Carter in 1977, directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains that may cause short- or long-term adverse impacts, unless it is the only practicable alternative. The Federal Highway Administration (FHWA) requirements for compliance are outlined in *23 Code of Federal Regulations* (CFR) 650 Subpart A. To comply, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments
- Risks of the action
- Impacts on natural and beneficial floodplain values
- Support of incompatible floodplain development
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values impacted by the project

2.1.2 State Regulations

2.1.2.1 Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne Act) is the basic water quality control law for California. The Act authorizes the State to implement provisions of the CWA. The Porter-Cologne Act establishes a regulatory program to protect the water quality of the State and the beneficial uses of State waters. Under this act, the SWRCB provides policy guidance and review for the Regional Water Quality Control Boards (RWQCBs), and the RWQCBs implement and enforce the provisions of the Act.

Establishment of the NPDES regulations in 1987, under Section 402(p) of the CWA, required that EPA delegate the responsibility of the NPDES program to the State. The SWRCB was given the responsibility to enforce the regulations of the NPDES

program. Industrial facilities and construction sites are regulated by the SWRCB through general storm water permits. Storm water discharges from municipal separate storm sewer systems (MS4s) are regulated through NPDES permits issued by the RWQCBs. Since 1990, operators of large storm drain systems have been required to do the following:

- Develop a storm water management program designed to prevent harmful pollutants from being dumped or washed by storm water runoff, into the storm water system, then discharged into local water bodies; and
- Obtain an NPDES permit.

In addition to managing municipal storm water discharges, the NPDES permit program requires permitting of construction-related storm water discharges. Specifically, development that is greater than 1-acre in size is required to comply with provisions of the *NPDES Permit for General Construction Activities* (Order No. 2009-0009-DWQ) (CGP)². The CGP requires all owners of land within the State with construction activities resulting in more than 0.4-hectares (1-acre) of soil disturbance (e.g., clearing, grubbing, grading, trenching, stockpile, utility relocation, temporary haul roads) to obtain coverage under the CGP by filing a Notice of Intent (NOI). The CGP ensures that the landowners:

1. Eliminate or reduce non-storm water discharges to storm drains and receiving waters of the U.S.;
2. Develop and implement a Storm Water Pollution Prevention Plan (SWPPP);
3. Inspect the Water Pollution Controls (WPCs) specified in the SWPPP; and
4. Monitor storm water runoff from construction sites to ensure that the Best Management Practices (BMPs) specified in the SWPPP are effective.

On July 15th, 1999, the State Board issued a statewide NPDES Permit for storm water discharges from Caltrans properties, facilities, and activities (Order No. 99-06-DWQ, NPDES No. CAS000003), which regulated all storm water discharges from Department owned MS4s, maintenance facilities and construction activities. It also covers all Caltrans construction activities that require a permit under federal regulations. Currently, Order No. 99-06-DWQ is being renewed and will be

² NPDES General Permit for Storm Water Discharges Associated with Construction Activities and Land Disturbance Activities, Order No. 2009-0009-DWQ, NPDES No. CAS000002.

superseded by adoption of a new permit. This project will be subject to the latest version of the Caltrans Statewide NPDES permit in effect at the time of construction.

2.1.2.2 Santa Ana River Basin Water Quality Control Plan (Basin Plan)

The document for each region of the SWRCB's jurisdiction is the Water Quality Control Plan, commonly referred to as the Basin Plan. The Basin Plan designates beneficial uses for surface and ground waters, and it sets qualitative and quantitative objectives that must be attained or maintained to protect the designated beneficial uses and conform to the State's anti-degradation policy. The Basin Plan also describes implementation programs to protect the beneficial uses of all waters in the region and surveillance and monitoring activities to evaluate its effectiveness (SARWQCB 1995).

To protect beneficial uses, the RWQCB has set forth water quality objectives that are described in the Basin Plan (SARWQCB 1995). Water quality objectives are intended (1) to protect public health and welfare; and (2) to maintain or enhance water quality in relation to the designated existing and potential beneficial uses of the water. The Basin Plan (SARWQCB 1995) did not identify any water quality objectives for groundwater basins in the project vicinity.

2.1.2.3 California Department of Fish and Game Lake or Streambed Alteration Program

The California Department of Fish and Game (CDFG), through provisions of the State of California Administrative Code, is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be adversely affected. Streams and rivers are defined by the presence of a channel bed and banks, and at least an intermittent flow of water. CDFG regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by CDFG.

2.1.3 Local Regulations

2.1.3.1 Orange County Storm Water Program

The Orange County Storm Water Program administers the current NPDES MS4 Permit and the revised draft 2007 Drainage Area Management Plan (DAMP) for the County of Orange and the incorporated cities within the region. The DAMP was prepared to meet the requirements of the storm water permit by describing the overall storm water management strategies planned by the County to protect the beneficial uses of the receiving waters in the Santa Ana drainage area. Thus, Contractors

responsible for construction of new development or redevelopment³ projects are required to comply with provisions set forth in the Orange County DAMP to control storm water runoff and ultimately prevent any deterioration of water quality that would impair subsequent or competing beneficial uses of the water.

2.2 Existing Water Resources

2.2.1 Regional and Local Climate and Precipitation

The climate in the project area is classified as Mediterranean, characterized by warm, dry summers and mild, wet winters. The major contributors to the climate are the Eastern Pacific High Pressure Area and the moderating effects of the Pacific Ocean. The mean high winter temperature is 65 degrees Fahrenheit (°F), and the mean high summer temperature is 77°F. The current rainy season in the project area, as defined by the Santa Ana RWQCB, is from October 1 through May 1; however, most rainfall occurs during the winter season, which is December through February. The annual average rainfall within Hydrologic Sub-Areas 801.11 and 845.61 is approximately 13 inches.

2.2.2 Watershed Characteristics

The proposed project is located within the East Coastal Plain Hydrologic Sub-Area (801.11) and the Anaheim Hydrologic Sub-Area (845.61). Within these hydrologic sub-areas, the project traverses three watersheds, which are the Santa Ana River (SAR) Watershed, Anaheim Bay-Huntington Harbour Watershed, and San Gabriel River-Coyote Creek Watershed. The total area for each of the watersheds that the proposed project traverses are as follows: SAR Watershed has an area of 210.5 square miles; Anaheim Bay-Huntington Harbour Watershed has an area of 80.4 square miles; and San Gabriel River-Coyote Creek Watershed has an area of 85.5 square miles. The total area of these three watersheds is 376.4 square miles.

2.2.3 Surface Water Features

Within the SAR Watershed, Anaheim Bay-Huntington Harbour Watershed, and San Gabriel River-Coyote Creek Watershed, the project crosses the following receiving water bodies: SAR (Reach 1), East Fountain Valley Channel, Ocean View Channel, East Garden Grove-Wintersburg Channel, Newland Channel, Edinger Storm Drain, Westminster Channel, Anaheim-Barber City Channel, Milan Storm Drain, and Bolsa Chica Channel. Although the water bodies identified above are traversed by the

³ Redevelopment is defined as projects that include the addition or replacement of 5,000 square feet or more of impervious surface on a developed site.

proposed project, there are several other water bodies outside of the project area that receive runoff generated from within the project limits. The following water bodies are also considered receiving waters: Delhi Storm Drain, Gisler Storm Drain, Mesa Verde Storm Drain, Greenville-Banning Channel, Hyland Storm Drain, Federal Storm Channel, Bixby Storm Channel, and Montecito Storm Channel.

The existing offsite flow pattern generally is directed to the Pacific Ocean. Major washes and rivers are conveyed under the freeway by culverts or bridges. Sheet flow directed towards the freeway is collected by parallel channels. Although the project traverses three watersheds, as previously mentioned, the project corridor falls mainly within the SAR Watershed. The SAR Watershed and subwatersheds shown in Figure 2. The exhibit shows large offsite tributary areas that must be studied for this project.

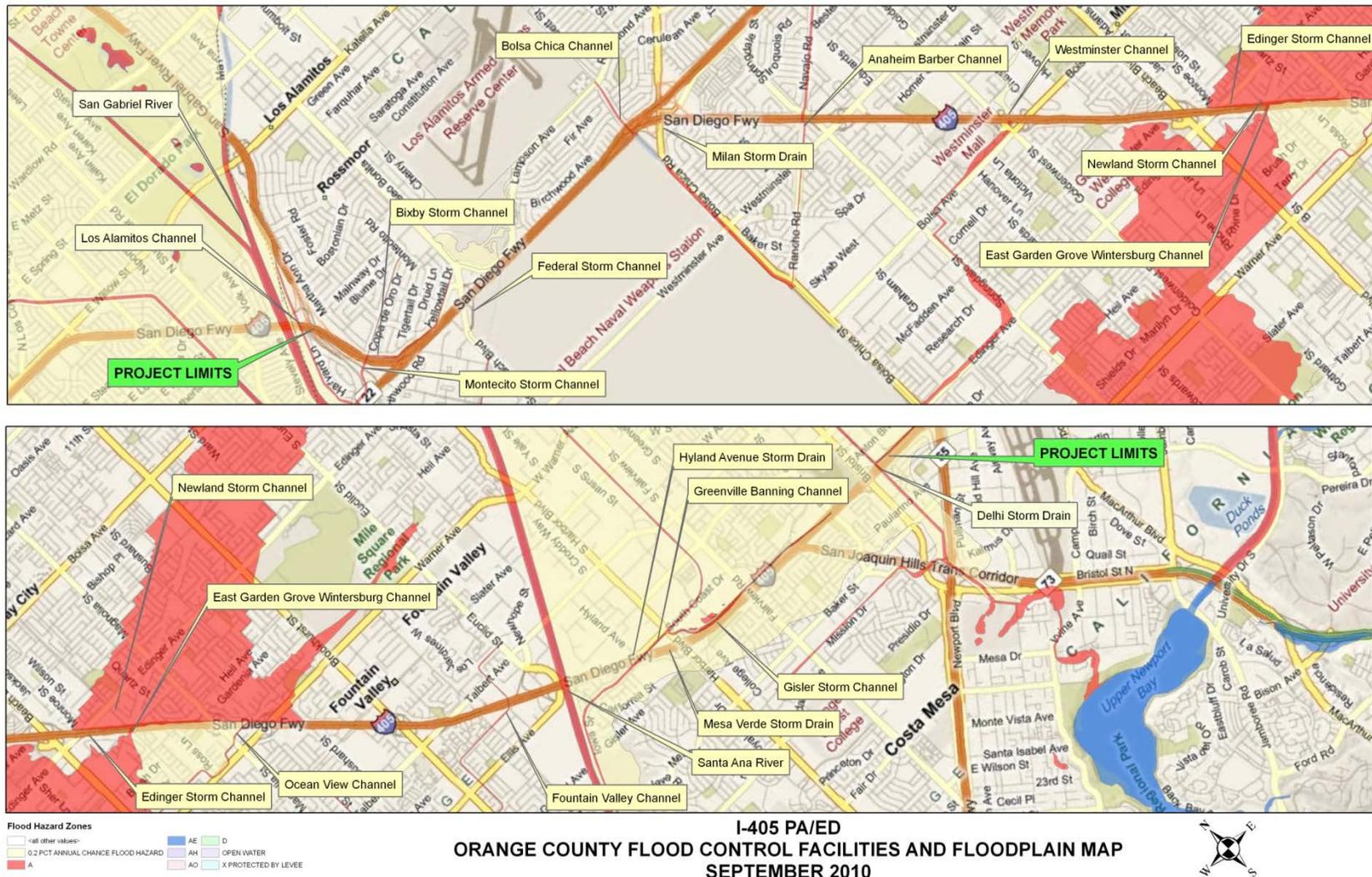


Figure 2 Orange County Flood Control Facilities and Floodplain Map

2.2.4 Floodplain

Flood hazard areas were determined based upon the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM). Field visits in February 2009 were conducted to evaluate potential causes of flooding, flood zone properties, and accuracy of the FEMA maps. Other sources, such as topographic mapping and aerial photos, were utilized to determine the degree of flooding, drainage tributary areas, and potential flooding risk. It is anticipated that there would be some floodplain encroachment throughout the corridor. Encroachment would vary at each location depending on the proposed roadway improvement. The following are descriptions for the Flood Hazard Areas along the project corridor.

Bixby Storm Channel (OCFCD Facility No. C01P04) and Montecito Storm Channel (OCFCD Facility No. C01S03)

The Bixby Storm Channel is shown on FIRM Map #06059C0114J, December 3, 2009. The channel is designated as Zone A. The 100-year flood discharge is contained in the trapezoidal concrete channel. It drains mainly residential development, with some commercial. The channel curves to the south and parallels the I-405 alignment, eventually draining to the Montecito Storm Channel. The channel collects flows from the City of Seal Beach storm drain, adjacent lands, and freeway drainage.

Montecito Storm Channel (OCFCD Facility No. C01S03)

The Montecito Storm Channel is shown on FIRM Map #06059C0114J, December 3, 2009. The channel is designated as Zone A. The 100-year flood discharge is contained in the channel. The channel begins upstream at Montecito Road and Copa de Oro Drive. The channel generally follows the Copa de Oro Drive alignment between residential homes. Before the channel crosses I-405, the Bixby Storm Channel combines with the Montecito Storm Channel. The Montecito Storm Channel drains mainly residential subdivisions.

Federal Storm Channel (OCFCD Facility No. C01S06)

The Federal Storm Channel is shown on FIRM Map #06059C0114J, December 3, 2009. The earthen channel downstream is designated as Zone D. The Old Ranch Golf Course Retarding Basin is designated as Zone AE and outlets to the Federal Storm Channel.

Bolsa Chica Channel (OCFCD Facility No.C02)

The Bolsa Chica Channel is shown on FIRM Map #06059C0118J, December 3, 2009. The channel is designated as Zone A, and 100-year flows are contained in the channel. There is a gap downstream of I-405 that is designated as Zone D.

Anaheim-Barber City Channel (OCFCD Facility No.C03)

The Anaheim-Barber City Channel is shown on FIRM Map #06059C0119J, December 3, 2009. The channel is designated as Zone A, and the 100-year flood discharge is contained in the channel.

Milan Storm Drain (OCFCD Facility No.C03S01)

The existing facility is a 4-ft by 4-ft reinforced concrete box (RCB) crossing I-405, as shown on Sheet D-22. The RCB transitions into a trapezoidal channel downstream of I-405 and drains to the Bolsa Chica Channel (C02).

Westminster Channel (OCFCD Facility No.C04)

The Westminster Channel is shown on FIRM Map #060J9C0232J, December 3, 2009. The channel is designated as Zone A. The 100-year flood may overtop the channel.

East Garden Grove-Wintersburg Channel (OCFCD Facility No.C05)

The East Garden Grove-Wintersburg Channel is shown on FIRM Map #06059C0251J, December 3, 2009. The channel is levied downstream and upstream of I-405. The channel is designated as Zone A and is adjacent to I-405. It covers a considerably large area, including the Edinger Storm Channel, Newland Storm Channel, and Ocean View Channel.

Newland Storm Channel (OCFCD Facility No.C05S01)

The Newland Storm Channel is shown on FIRM Map #06059C0251J, December 3, 2009. The channel is designated as Zone A and is adjacent to I-405.

Edinger Storm Channel (OCFCD Facility No.C05S05)

The Edinger Storm Channel is shown on FIRM Map #06059C0251J, December 3, 2009. The channel is designated as Zone A and is adjacent to I-405.

Ocean View Channel (OCFCD Facility No.C06)

The Ocean View Channel is shown on FIRM Maps #06059C0253J and #06059C0254J, December 3, 2009. The channel is designated as Zone A and is

adjacent to I-405. The 100-year flows are contained in the channel downstream of I-405.

Fountain Valley Channel (OCFCD Facility No.D06)

The Fountain Valley Channel is shown on FIRM Map #06059C0254J, December 3, 2009. The channel is levied immediately upstream of I-405 and downstream, outside of Caltrans right-of-way (ROW). The channel is designated as Zone A.

Santa Ana River (OCFCD Facility No.E01)

The SAR is shown on FIRM Map #06059C0258J, December 3, 2009. The SAR is designated as Zone A, and the 100-year flood discharge is contained in the channel. The map also shows levee systems on both sides of the channel.

Hyland Avenue Storm Drain (OCFCD Facility No.D03P01)

The Hyland Avenue Storm Drain conveys offsite storm water runoff across I-405 from north to south in Fountain Valley, west of Hyland Avenue. This system is tributary to the Greenville-Banning Channel, and it confluences downstream south of I-405, as shown on Sheet D-1. The size of the existing facility is a 6-ft by 5-ft RCB.

Greenville-Banning Channel (OCFCD Facility No.D03)

The Greenville-Banning Channel is shown on FIRM Map #06059C0258J, December 3, 2009. The channel is designated as Zone A, and the 100-year flood discharge is contained in the channel.

Mesa Verde Storm Drain (OCFCD Facility No.D03P02)

The Mesa Verde Storm Drain conveys offsite storm water runoff across I-405 from south to north underneath Harbor Boulevard. The Mesa Verde Storm Drain confluences with the Gisler Storm Channel at the intersection of Harbor Boulevard and Coast Drive. The existing facility under I-405 is an 8-ft by 5-ft RCB, as shown on Sheet D-6a.

Gisler Storm Channel (OCFCD Facility No.D03S03)

The Gisler Storm Channel is shown on FIRM Maps #06059C0258J and #C06059C0259J, December 3, 2009. The channel is designated as Zone A, and the 100-year flood discharge is contained in the channel.

Delhi Storm Drain (OCFCD Facility No.F01)

The Delhi Storm Drain, also known as the Santa Ana Barden Channel, is shown on FIRM Map #06059C0267J. The channel is designated as Zone A, and the 100-year flood discharge is contained in the channel.

2.2.5 Groundwater

The proposed project is located over the Orange County Groundwater Basin. The Orange County groundwater basin underlies the northern half of Orange County, including the study area. The entire basin covers approximately 910 square kilometers (350 square mi). It is bordered by Coyote and Chino hills to the north, the Santa Ana Mountains to the northeast, the Pacific Ocean to the southwest, and terminates near the Orange County line to the northwest. The California Department of Water Resources divides the Orange County groundwater basin into two hydrologic divisions – the Forebay Area and the Pressure Area. Most of the central and coastal portions of the basin fall within the Pressure Area, including Garden Grove (western half), Westminster, Seal Beach, Rossmore, and Los Alamitos. The proposed project is located in the Pressure Area.

2.3 Existing Water Quality

2.3.1 Surface Waters

No receiving water bodies within the project limits are designated as impaired under Section 303(d)⁴ of the CWA; however, five of the channels within the project limits – Montecito Channel, Bixby Channel, Federal Storm Channel, Bolsa Chica Channel, and East Garden Grove-Wintersburg Channel – are tributary to water bodies that are designated as impaired under Section 303 (d). Montecito Channel, Bixby Channel, and Federal Storm Channel drain to Los Alamitos Channel, which drains to the San Gabriel River Estuary. The San Gabriel River Estuary is listed as being impaired for copper, Dioxin, nickel, and dissolved oxygen. Bolsa Chica Channel drains to Anaheim Bay-Huntington Harbour and Bolsa Chica State Beach. Anaheim Bay is listed as being impaired for nickel, polychlorinated biphenyls (PCBs) (tissue), and sediment toxicity, while Bolsa Chica State Beach is listed as being impaired for copper and nickel. East Garden Grove-Wintersburg Channel drains through Bolsa Bay into Huntington Harbour. Huntington Harbour is listed as being impaired for

⁴ The 2010 Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report) was the source used to identify impaired water bodies.

pathogens and sediment toxicity.

Within the SAR Watershed, Anaheim Bay-Huntington Harbour Watershed, and San Gabriel River-Coyote Creek Watershed, 23 TMDLs have been established; however, none of the receiving waters for the proposed project have established TMDLs.

2.3.2 Groundwater

Orange County Water District (OCWD) regulates groundwater quality by collecting and analyzing samples from monitoring wells (see Figure 3) located throughout the county and testing them for more than 100 regulated and unregulated chemicals at a monitoring frequency specified by EPA and the California Department of Public Health (CDPH) (OCWD 2009). Orange County groundwater is primarily calcium and sodium bicarbonate in character. Impairments include seawater intrusion near the coast and colored water from natural organic materials in the lower aquifer system. The injection of water in the Alamitos and Talbert Gaps prevents saltwater intrusion into the upper region of the aquifer. The Basin is also characterized with increasing salinity, high nitrates, and methyl tributyl ethylene (MTBE). The erosion of natural deposits is the most typical source of groundwater contamination in the Basin. In addition, the use of fertilizers in the county contributes nitrates into the groundwater. The Basin also receives treated reclaimed water from Orange County Sanitation District (OCSD). Because of this recharge practice, the Basin has limited contamination by two chemicals of concern. The chemicals are N-nitrosodimethylamine (NDMA) and 1,4-dioxane. The California Notification Level for NDMA is 10 nanograms per liter (ng/L). The concentration of NDMA is typically less than 2 ng/L in the SAR at Imperial Highway. At OCWD's Ground Water Replenishment System in Fountain Valley, NDMA concentrations are maintained below California's Notification Level through a combination of source control measures, reverse osmosis treatment, and advanced oxidation treatment using ultraviolet light and hydrogen peroxide (OCWD 2009).

In 2002, OCWD detected elevated levels of 1,4-dioxane in nine production wells exceeding the California Action Level. These wells were temporarily shut down while OCWD conducted an investigation to trace the source of the contamination. OCWD identified the industrial discharger that was discharging 1,4-dioxane into wastewater collected by OCSD. The discharger was affecting water that was treated by WF-21 and injected into the Talbert Seawater Barrier. The discharger voluntarily ceased discharge of 1,4-dioxane and concentrations subsequently declined. Additional

monitoring data indicated low concentrations such that the CDPH determined that the water was not a significant risk to health, and the wells were returned to service (OCWD 2009).

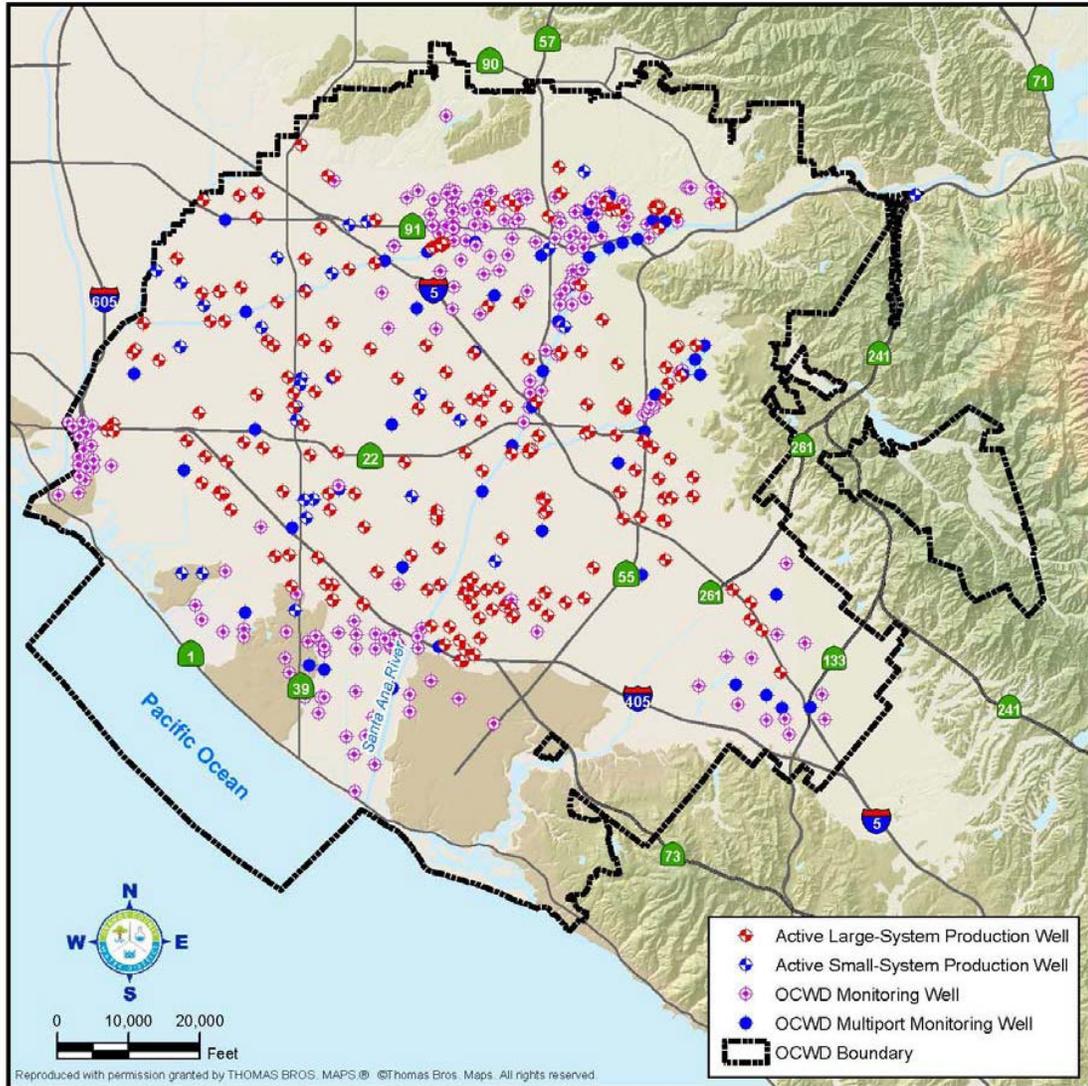


Figure 3 Network of OCWD Production and Monitoring Wells

2.4 Beneficial Uses

The Santa Ana RWQCB designates beneficial uses for waters in the SAR Watershed, Anaheim Bay-Huntington Harbour Watershed, and San Gabriel River-Coyote Creek Watershed, which are identified in the Basin Plan (RWQCB 1995). As mentioned in Section 2.2.3, the following water bodies are considered receiving waters of the

proposed project: SAR (Reach 1), East Fountain Valley Channel, Ocean View Channel, East Garden Grove-Wintersburg Channel, Newland Channel, Edinger Storm Drain, Westminster Channel, Anaheim-Barber City Channel, Milan Storm Drain, Bolsa Chica Channel, Delhi Storm Drain, Gisler Storm Drain, Mesa Verde Storm Drain, Greenville-Banning Channel, Hyland Storm Drain, Federal Storm Channel, Bixby Storm Channel, and Montecito Storm Channel. According to the Basin Plan, of all of the receiving water bodies identified above, SAR is the only water body that has identified beneficial uses. The existing designated beneficial uses for SAR (Reach 1) include:

- Municipal and Domestic Supply – Waters are used for community, military, municipal, or individual water supply systems. These uses may include, but are not limited to, drinking water supply.
- Body Contact Recreation – Recreational activities involving body contact with water.
- Non-Body Contact Recreation – Recreational activities involving proximity to water, but generally no body contact or ingestion of water.
- Warm Freshwater Habitat – Maintenance of warm water ecosystems.
- Wildlife Habitat – Uses of water that supports terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

As mentioned in Section 2.1.2.2, the RWQCB has set forth water quality objectives, which are identified in the Basin Plan (RWQCB 1995), to protect beneficial uses. Currently, SAR (Reach 1) does not have established numeric water quality objectives; however, there are narrative water quality objectives identified in the Basin Plan that are applicable only during flood flows.

Chapter 3 Environmental Consequences

3.1 Impact Criteria

Construction and operational impacts to water resources were assessed with regard to potential degradation of water quality and changes in surface water flow. Effects on future water quality, both with and without implementation of the project alternatives, were estimated based on the potential for runoff to reach surface water resources and the types of pollutants anticipated.

The proposed project would not have significant and/or adverse effects to water resources or water quality during construction and operation if it would not:

1. Violate any water quality standards or waste discharge requirements (for construction only);
2. Substantially degrade water quality;
3. 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;
4. Substantially alter the existing drainage pattern of the area in a manner that would result in substantial erosion, sedimentation, or flooding within or downstream of the proposed project area;
5. Create or contribute runoff that would exceed the capacity of existing or planned storm water drainage systems; or
6. Place structures within a 100-year flood hazard area, which would expose people or structures to significant risk of loss, injury, or death.

Violate any water quality standards or waste discharge requirements (for construction only); or substantially degrade water quality

Construction

The greatest potential for water quality impacts from the proposed project would be during construction. The total disturbed soil area (DSA) anticipated for this project varies depending on which alternative is selected. Alternative 1 would result in a DSA of 355 acres, while Alternative 2 would result in a DSA of 384 acres and Alternative 3 would result in a DSA of 432 acres. The No Build Alternative would result in no DSA.

Section 1.2.1.1 identified several engineering features of the proposed project that have the potential to degrade water quality. More specifically, each of the build alternatives would require new structures; structure replacements; structural widening; box culvert replacements and extensions; soundwall construction; and retaining wall construction. Additionally, the roadway widening and median paving will increase onsite runoff, and it is anticipated that existing storm drain inlets would need to be modified and additional inlets may have to be added. With implementation of a SWPPP that identifies Construction Site BMPs, as described in the Caltrans Storm Water Quality Handbooks, Construction Site BMP Manual (Caltrans 2003b), no water quality standards or waste discharge requirements would be violated; therefore, construction of the proposed project is not expected to substantially degrade water quality within the SAR Watershed, the Anaheim Bay-Huntington Harbour Watershed, or the San Gabriel River-Coyote Creek Watershed.

Based on the construction details described above, dewatering is anticipated for this project. Groundwater dewatering discharge could adversely impact surface water quality if effluent that is rich in sediment or contaminated with chemicals is not managed properly. Extracted groundwater may contain pollutants that may be a result of the decomposition of organic materials (e.g., hydrogen sulfide), leaking underground storage tanks (LUSTs) and fuel lines, surface spills, sewage, past use of liquid waste impoundments, or the potential presence of nutrients (i.e., phosphorous and nitrogen compounds). Dewatering may be necessary during excavation for the ramps or where new footings would be required. Results from soil boring samples would determine if dewatering is required for other areas within the proposed project limits.

Currently, discharges of groundwater from construction and project dewatering to surface waters within the project limits must comply with Order No. R8-2006-0004. Discharges covered by this permit include, but are not limited to, treated or untreated groundwater generated from permanent or temporary dewatering operations. In addition, this permit covers discharge from cleanup of contaminated sites where other project-specific General Permits may not be appropriate, such as groundwater impacted by metals and/or other toxic compounds. This permit also covers discharges from dewatering operations near creeks where surface waters and groundwaters are hydrologically connected and have similar water chemistry. Because all dewatering operations that may be necessary as a result of implementing the proposed project

would need to comply with Order No. R8-2006-0004, no impacts to groundwater quality are expected.

Operation

This project is located within two Hydrologic Sub-Areas – the East Coastal Plain Hydrologic Sub-Area (801.11) and the Anaheim Hydrologic Sub-Area (845.61). Within these two Hydrologic Sub-Areas, the Caltrans Water Quality Planning Tool has identified four Targeted Design Constituents (TDCs) for water bodies that are well outside the project limits but ultimately receive runoff from the proposed project. The TDCs and their associated water bodies are as follows: Bolsa Chica State Beach, with copper as the TDC; Huntington Harbour with copper, lead, and sediment as the TDCs; and the San Gabriel River Estuary, with copper as the TDC. Therefore, copper, lead, and sediment are the TDCs identified for this project. Although the project would not be directly discharging to the San Gabriel River Estuary, a portion of the project area drains to the Bixby Storm Channel, which eventually leads to the San Gabriel River. From there, water is conveyed to the San Gabriel River Estuary.

The existing impervious surface within the project limits of Alternatives 1 and 2 is estimated to be 378 acres. The existing impervious surface within the project limits of Alternative 3 is estimated to be 468 acres. The amount of additional impervious surface area that would be added by the build alternatives varies depending upon which alternative is selected. Alternative 1 would result in an additional 86 acres of impervious surface area, while Alternative 2 would result in an additional 99 acres of impervious surface area and Alternative 3 would result in an additional 104 acres of impervious surface area. With the increase in impervious surface area, the chance for additional roadway pollutants to be discharged to the receiving water also increases. Additionally, the increased runoff generated from the additional impervious surface may increase the potential for erosion downstream.

Preliminary engineering has indicated that the proposed project may present opportunities for implementation of Treatment BMPs. All nine Caltrans-approved Treatment BMPs have been analyzed to determine their feasibility for implementation on the proposed project, and a final Treatment BMP strategy would be determined at the plans, specifications, and estimates (PS&E) phase. Treatment BMPs would be selected based on their ability to treat the TDCs (i.e., copper, lead, and sediment) and meet the feasibility and site criteria identified in the Project Planning and Design Guide (Caltrans July 2010). Treatment BMPs help to control runoff velocity, and in turn, can minimize the potential for downstream erosion. Therefore, with

implementation of Treatment BMPs, operation of the proposed project would not substantially degrade water quality, nor would it violate any water quality standard or waste discharge requirements.

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

Construction

The project corridor is not located within an identified recharge area and is not suitable for recharge because the project area is near the coast, and the groundwater table underlying the project corridor is shallow at 50 ft below ground surface (OCWD 2009). Pile driving, dewatering, and other construction activities that would encounter groundwater could potentially occur. While the insertion of support and foundation structures in the groundwater may reduce the storage capacity of groundwater, the displaced volume would not be substantial relative to the volume of the Basin. Likewise, the volume of water removed would not likely be substantial relative to groundwater pumping for water supply. In addition, water used during construction for cleaning, dust control, and other uses would be nominal; therefore, construction activities would not substantially deplete groundwater supplies nor interfere substantially with groundwater recharge.

Operation

Operation of the proposed project would not utilize groundwater for any purposes. This project would not 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; therefore, the proposed project would not have significant and/or adverse effects to groundwater resources.

Substantially alter the existing drainage pattern of the area in a manner that would result in substantial erosion, sedimentation, or flooding within or downstream of the proposed project area

Construction

Erosion within the project limits has not been a concern given that the project corridor is located within a fully built environment with an area predominated by impervious surface and runoff is conveyed to designed drainages throughout the alignment; however, erosion and siltation in the drainage area would be increased during construction of the proposed project. Runoff from the proposed project is not

anticipated to channelize and cause gully and scour; however, new slopes would be created and existing slopes would be modified, which could require the need for concentrated flow conveyance systems. Working details and standard special provisions (SSPs) for vegetated and hard surface protection systems would be reviewed and provided in the PS&E phase of the project development process.

During construction, the amount of sediments entering the receiving waters in the project area would be minimal with implementation of a project-specific SWPPP, which would include implementation of Construction Site BMPs.

Operation

Erosion and siltation are not expected to increase substantially after construction because all of the disturbed slopes would be stabilized, and surface water from the project site would be diverted to designed collection facilities along the roadway. Risks due to erosion or washout would be minimized through the use of erosion control measures such as hydroseeding, groundcover, and mulch. Velocity dissipation devices, flared end outlets, headwalls, transition structures, and splash walls would be incorporated into the design where necessary at culvert inlets and outlets to prevent erosion. Ditches would be modified and box culverts would be extended to help intercept sheet flow where necessary and to convey runoff to facilities that cross under the roadway. The project design has considered minimizing the footprint and closely matching the existing grading to preserve as much of the existing vegetation as possible. The measures identified above would help to prevent the alteration of the existing drainage pattern of the area such that substantial erosion, sedimentation, or flooding within or downstream of the proposed project area is minimized.

Create or contribute runoff that would exceed the capacity of existing or planned storm water drainage systems

Construction

Proposed construction activities would involve stockpiling, grading, excavation, dredging, paving, and other earth-disturbing activities resulting in the alteration of existing drainage patterns. These types of activities would constitute a temporary alteration of drainage patterns. The project-specific SWPPP would include BMPs designed to minimize storm water and erosional impacts during construction. Compliance with the CGP would minimize the potential for construction activities to alter natural drainages via deposition of sediments. Therefore, compliance with the

CGP would reduce the risk of short-term erosion resulting from drainage alterations during construction to a less than significant impact.

Operation

With the addition of impervious surface area, the proposed project is anticipated to increase the volume of downstream flow. Because Alternatives 1 and 2 have different project limits than Alternative 3, the existing paved surface area varies depending on which alternative is selected. The existing impervious surface within the project limits of Alternatives 1 and 2 is estimated to be 378 acres. The existing impervious surface within the project limits of Alternative 3 is estimated to be 468 acres. The amount of additional impervious surface area that would be added by the build alternatives varies depending upon which alternative is selected. Alternative 1 would result in an additional 86 acres of impervious surface area, while Alternative 2 would result in an additional 99 acres of impervious surface area and Alternative 3 would result in an additional 104 acres of impervious surface area. Because each of the build alternatives would add additional acres of paved surface area, the velocity and volume of downstream flow is expected to increase. As previously mentioned, the total area for each of the watersheds that the proposed project traverses are as follows: SAR Watershed has an area of 210.5 square mi; Anaheim Bay-Huntington Harbour Watershed has an area of 80.4 square mi; and San Gabriel River-Coyote Creek Watershed has an area of 85.5 square mi. Because the total area of these three watersheds is 376.4 square mi, or 240,895 acres, the 86- to 104-acre increase in impervious surface area makes up approximately 0.04 percent of the area within the watersheds. This can be expected to translate into minor localized increases in urban runoff within the storm drain system.

The proposed project would also implement Design Pollution Prevention BMPs to mitigate potential downstream effects related to the increased flow from the widening. All transitions between culvert outlets, headwalls, wingwalls, and channels would be smoothed to reduce turbulence and scour. Offsite runoff would be handled by allowing flows to pass under or around the proposed facility, and the existing drainage pattern would not be altered. Where possible, the runoff from all bridges would be conveyed to Treatment BMPs. No bridge runoff would be directly discharged into waterways. The preservation of existing vegetation would be maximized to reduce the amount of clearing and grubbing that would be required on slopes. In an effort to reduce concentrated flows, benches or terraces were provided during original construction on high cut and fill slopes, and slopes would be rounded

or shaped accordingly. All of the new slopes would be flatter than 2:1 (horizontal:vertical). Disturbed slopes shall be revegetated per the Erosion Control Plan (approved by the District Landscape Architect).

There would be several culvert and bridge widening improvements required for this project. Most of the bridge work would require only minor channel modifications and would not affect their ability to convey flow. Culverts would have to be extended to the new embankments. There are several roadside ditches parallel to the freeway that would require pipe replacements. Due to the proposed widening and ROW constraints, replacing the ditches with pipe conduits would be necessary. During final design, a hydrology and hydraulic study shall be completed for these facilities. Hydraulic modeling was developed for some of the larger channels to compare the existing and proposed conditions. For other channels, sound engineering judgment based upon similar type work was utilized to determine that the proposed project would not create or contribute runoff that would exceed the capacity of existing or planned storm water drainage systems.

This project would also not discharge to unlined channels. Because of the lag time between the peak runoff from the receiving water bodies and that from the freeway runoff, the peak flow from the freeway would have substantially subsided by the time the watershed peak occurs. Existing drainage patterns would not be substantially altered; therefore, the proposed project would not have significant and/or adverse effects to the existing drainage pattern as a result of operations.

Place structures within a 100-year flood hazard area, which would expose people or structures to significant risk of loss, injury, or death

As identified in Section 2.2.4, FEMA has identified flood zones on the FIRMs within the project area. Flood control facilities would require lengthening of cross culverts at numerous locations, along with bridge widening at major tributaries. Coordination with the Orange County Flood Control District (OCFCD) and Caltrans is critical because these washes carry a significant amount of flow. Existing studies, as well as any future studies, would have to be examined to ensure that peak flows are being conveyed. Coordination is also necessary with USACE for the SAR.

There are areas where embankments would have to be regraded to accommodate the roadway widening. Channels, transition structures, slope stabilizers, headwalls, and wing walls would require reconstruction. Hydraulic studies for the channels and culvert analysis would be necessary to ensure that freeboard, headwater, and tailwater

requirements are met. With the measures described above, implementation of the proposed project would not place structures in the 100-year flood hazard area that would pose a significant risk of loss, injury, or death involving flooding.

Chapter 4 Avoidance, Minimization, and/or Mitigation Measures

4.1 Best Management Practices

Caltrans has developed a Statewide Storm Water Management Plan (SWMP) that describes the procedures used to reduce or minimize the discharge of pollutants associated with the storm water drainage systems that serve highways and highway-related properties, facilities and activities. Section 3 of the Statewide SWMP describes BMP categories that are used by Caltrans to meet MEP and best conventional technology/best available technology (BCT/BAT) requirements and to address compliance with water quality standards. Three general categories of BMPs have been identified for use in the Statewide SWMP:

- **Category I BMPs:** Technology-based pollution prevention controls to meet the maximum extent practicable (MEP) requirements for designing and maintaining roadways and related facilities.
 - Group A: Maintenance BMPs
 - BMPs applicable to all maintenance operations. Examples of Maintenance BMPs include litter pickup, vegetation maintenance, and street sweeping.
 - Group B: Design Pollution Prevention BMPs
 - BMPs applicable to the design of new facilities or major renovations of existing facilities. Examples of Design Pollution Prevention BMPs include flared culvert end sections, channel lining, and velocity dissipation devices.
- **Category II BMPs:** Temporary Construction Site BMPs to meet BCT/BAT requirements for construction projects that disturb 5 or more acres. (These BMPs are also applied to sites smaller than 5 acres.) Example of Construction Site BMPs include silt fence, storm drain inlet protection, and stabilized construction entrance/exit.
- **Category III BMPs:** Treatment BMPs to meet MEP requirements. Treatment BMPs are permanent treatment devices and facilities. Examples of Treatment BMPs include Biofiltration Strips/Swales, Detention Decives, Infiltration Basins, and Media Filters.

4.2 Construction Phase (Short Term)

The Contractor shall conform to current federal, State, and local regulatory requirements to minimize impacts to water resources and water quality, including:

- **WQ-1:** Conforming to the requirements of the Caltrans Statewide NPDES Storm Water Permit, Order No. 99-06-DWQ, NPDES No. CAS000003, adopted by the SWRCB on July 15, 1999, in addition to the BMPs specified in the Caltrans *Storm Water Management Plan* (SWMP) (Caltrans 2003a). The Contractor shall also conform to the requirements of the General NPDES Permit for Construction Activities, Order No. 2009-0009-DWQ, NPDES No. CAS000002 and any subsequent permit in effect at the time of construction.
- **WQ-2:** Preparing and implementing the SWPPP. The SWPPP shall address all State and federal water control requirements and regulations. The SWPPP shall address all construction-related activities, equipment, and materials that have the potential to impact water quality. All Construction Site BMPs will follow the latest edition of the Storm Water Quality Handbooks, Construction Site BMP Manual to control and minimize the impacts of construction related pollutants. The SWPPP shall include BMPs to control pollutants, sediment from erosion, storm water runoff, and other construction-related impacts. In addition, the SWPPP shall include implementation of specific storm water effluent monitoring requirements based on the project's risk level to ensure that the implemented BMPs are effective in preventing the exceedance of any water quality standards.

All work will conform to the Construction Site BMP (Category II) requirements specified in the latest edition of the Caltrans SWMP to control and minimize the impacts of construction and construction-related activities, materials, and pollutants on the watershed(s). These include, but are not limited to, temporary sediment control, temporary soil stabilization, scheduling, waste management, materials handling, and other non-storm water BMPs. For a complete list, refer to Section 4.5 of the Caltrans SWMP (2003a).

- **WQ-3:** Dewatering is anticipated for the proposed project; therefore, this project will fully conform to Order No. R8-2006-0004, *General Waste Discharge Requirements for Discharges to Surface Water which Pose an Insignificant (De Minimus) Threat to Water Quality*, from the Santa Ana RWQCB. Dewatering BMPs will be used to control sediments and pollutants. A laboratory, certified under either the Environmental Laboratory Accreditation Program or the National Environmental Laboratory Accreditation Program, will test and monitor any discharge for compliance with RWQCB requirements.

4.3 Post-Construction Period (Long Term)

The Caltrans SWMP describes BMPs and practices to reduce the discharge of pollutants associated with the storm water drainage systems of State highways, facilities, and activities. The completed project plans will incorporate all necessary Maintenance BMPs (Category IA), Design Pollution Prevention BMPs (Category IB), and Treatment BMPs (Category III) to meet the MEP requirements. A combination of BMPs from the following categories will be implemented as part of the proposed project:

- **WQ-4:** Design Pollution Prevention BMPs – Permanent soil stabilization systems will be incorporated into project design, such as preservation of existing vegetation, concentrated flow conveyance systems (e.g., drainage ditches, dikes, berms, swales), and slope/surface protection systems that utilize either vegetated or hard surfaces. Identification of Design Pollution Prevention BMPs will occur during final design.
- **WQ-5:** Treatment BMPs – All Caltrans-approved Treatment BMPs will be implemented to the Maximum Extent Practicable (MEP). Treatment BMPs may include traction sand traps, infiltration devices, detention devices, biofiltration strips/ swales, dry weather flow diversion, media filters, multi-chamber treatment trains, wet basins, and gross solids removal devices.

Chapter 5 Permitting Requirements

This section describes the permits that are typically required for highway widening projects and their applicability to the proposed project.

5.1 Federal Permits

United States Army Corps of Engineers Section 404 Permit

Section 404 of the CWA requires a Section 404 Permit for the discharge of dredged or fill material into all waters of the U.S. Because this project anticipates the discharge of dredge or fill material into waters of the U.S., a Section 404 Permit would be necessary for this project.

5.2 State Permits

Caltrans Statewide NPDES Storm Water Permit, Order No. 99-06 DWQ, NPDES No. CAS000003 and NPDES General Permit for Storm Water Discharges Associated with Construction Activity (CGP), Order No. 2009-0009-DWQ, NPDES No. CAS000002

Caltrans has a statewide NPDES permit that covers all Caltrans work and projects within the State. All projects within Caltrans jurisdiction must conform to the requirements of the Caltrans Statewide NPDES Storm Water Permit, Order No. 99-06-DWQ, NPDES No. CAS000003, which was adopted by the SWRCB on July 15, 1999. This permit allows Caltrans to operate, maintain, and construct on State ROW without applying for individual General Permits for each construction project. The Caltrans Statewide NPDES Permit regulates permanent discharges from facilities, properties, and activities. The permit requires Caltrans to adhere to the provisions of the Statewide General NPDES Permit for Construction Activities, Order No. 2009-0009-DWQ, NPDES No. CAS000002. The permit also requires Caltrans to have a site-specific SWPPP prepared for all projects with greater than 1-acre of soil disturbance and file a Notice of Construction with SWRCB at least 30 days prior to any soil-disturbing activity. For any local agency project with construction activity within Caltrans ROW and a total DSA greater than 1-acre, the local agency shall file an NOI with the SWRCB. In addition, all projects are subject to the BMPs specified in the Caltrans SWMP. The provisions and requirements of the CGP are enforced by the RWQCBs.

The proposed project would disturb more than 1-acre of soil; therefore, a SWPPP would be required and an NOI must be filed with the SWRCB for this project.

RWQCB Section 401 Water Quality Certification

Section 401 of the CWA stipulates that any action that requires a federal license or permit and that may result in a discharge of pollutants into waters of the U.S. also requires water quality certification. Locally, this program is administered by the RWQCB and is designed to ensure that the discharge complies with applicable federal and State effluent limitations and water quality standards. The discharge of pollutants to waters of the U.S. is anticipated, and a USACE Section 404 permit is required. Consequently, a Section 401 Certification from the Santa Ana RWQCB is required for this project. It should be noted that the Santa Ana RWQCB issues Section 401 Certifications when the project conveys in the application that it will comply with water quality standards, including beneficial uses, water quality objectives, and State antidegradation policy.

CDFG Section 1602 Streambed Alteration Agreement

Section 1602 of the California State Department of Fish and Game Code requires a Streambed Alteration Agreement for any alteration to the bank or bed of a stream or lake. Because alteration to the bank or bed of a stream or lake is not required for this project, a Section 1602 Streambed Alteration Agreement would not be necessary for this project.

Dewatering Permit

Dewatering within the Santa Ana RWQCB would require coverage under Order No. R8-2006-0004, *General Waste Discharge Requirements for Discharges to Surface Waters which Pose an Insignificant (De Minimus) Threat to Water Quality*.

Chapter 6 References

- Caltrans 2003a California Department of Transportation. Storm Water Management Plan. 2003.
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Chapter 7 List of Preparers

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