3.9 WATER QUALITY AND STORMWATER RUNOFF

3.9.1 REGULATORY SETTING

3.9.1.1 FEDERAL REQUIREMENTS: CLEAN WATER ACT

In 1972 Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.), from any point source unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. Known today as the Clean Water Act (CWA), Congress has amended it several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. Important CWA sections are:

- Sections 303 and 304 require states to promulgate water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a Federal license or permit to conduct any activity, which may result in a discharge to waters of the U.S., to obtain certification from the State that the discharge will comply with other provisions of the act. [Most frequently required in tandem with a Section 404 permit request. See below.]
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

The objective of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”

USACE issues two types of 404 permits: Standard and General permits. There are two types of General permits, Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to authorize a variety of minor project activities with no more than minimal effects.

There are two types of Standard permits: Individual permits and Letters of Permission. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE's Standard permits. For Standard permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404 (b)(1) Guidelines (U.S. EPA CFR 40 Part 230), and whether permit approval is in the public interest. The Section 404(b)(1) Guidelines were developed by the U.S. EPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA), to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences. Per Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4. A discussion of the LEDPA determination, if any, for the document is included in the Wetlands and Other Waters section (Section 3.17).

3.9.1.2 State Requirements: Porter-Cologne Water Quality Control Act

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

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA, and regulating discharges to ensure compliance with the water quality standards. Details regarding water quality standards in a project area are contained in the applicable RWQCB Basin Plan. States designate beneficial uses for all water body segments, and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, each state identifies waters failing to meet standards for specific pollutants, which are

then state- listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source controls, the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

3.9.1.3 State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB administers water rights, water pollution control, and water quality functions throughout the state. RWCQBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollution Discharge Elimination System Program.

Municipal Separate Storm Sewer Systems. Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water dischargers, including Municipal Separate Storm Sewer Systems (MS4s). The U.S. EPA defines an MS4 as any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that are designed or used for collecting or conveying storm water. The SWRCB has identified Caltrans as an owner/operator of an MS4 by the SWRCB. This permit covers all Caltrans rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

The Caltrans MS4 Permit, under revision at the time of this update, contains three basic requirements:

1. Caltrans must comply with the requirements of the Construction General Permit (see below);

2. Caltrans must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and

3. Caltrans storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) BMPs and other measures.

To comply with the permit, Caltrans developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within Caltrans for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices Caltrans uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The proposed I-710 Corridor Project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

Part of and appended to the SWMP is the Storm Water Data Report (SWDR) and its associated checklists. The SWDR documents the relevant storm water design decisions made regarding project compliance with the MS4 NPDES permit. The preliminary information in the SWDR prepared during the Project Initiation Document (PID) phase will be reviewed, updated, confirmed, and if required, revised in the SWDR prepared for the later phases of the project. The information contained in the SWDR may be used to make more informed decisions regarding the selection of BMPs and/or recommended avoidance, minimization, or mitigation measures to address water quality impacts.

CONSTRUCTION GENERAL PERMIT. Construction General Permit (Order No. 2009-0009-DWQ), adopted on September 2, 2009, became effective on July 1, 2010. The permit regulates storm water discharges from construction sites which result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop storm water pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory

storm water runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP). In accordance with the Caltrans Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with DSA less than one acre.

SECTION 401 PERMITTING. Under Section 401 of the CWA, any project requiring a Federal license or permit that may result in a discharge to a water body must obtain a 401 Certification, which certifies that the project will be in compliance with State water quality standards. The most common Federal permits triggering 401 Certification are CWA Section 404 permits issued by USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before USACE issues a 404 permit.

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

3.9.2 AFFECTED ENVIRONMENT

This section is based on the *Water Quality and Stormwater Runoff Study* (December 2011).

3.9.2.1 SURFACE WATER

Surface waters are shown in Figure 3.9-1. The Interstate 710 (I-710) Corridor Project is located within the Los Angeles Basin and discharges to two Los Angeles County watersheds: Dominguez Channel/Los Angeles Harbor and Los Angeles River. In addition, a portion of the I-710 Corridor Project is adjacent to the San Gabriel River Watershed. The primary receiving waters for runoff from the Study Area are the Los Angeles River, Compton Creek, the Rio Hondo Channel, and the Dominguez Channel. The Los Angeles River parallels the I-710 freeway throughout much of the Study Area. Compton Creek and the Rio Hondo Channel are also located within the Study Area and are tributary to the lower portion of the Los Angeles River. The Dominguez Channel flows almost parallel to I-710, approximately 1 mile west of I-710 between Interstate 405 (I-405) and the Pacific Ocean.

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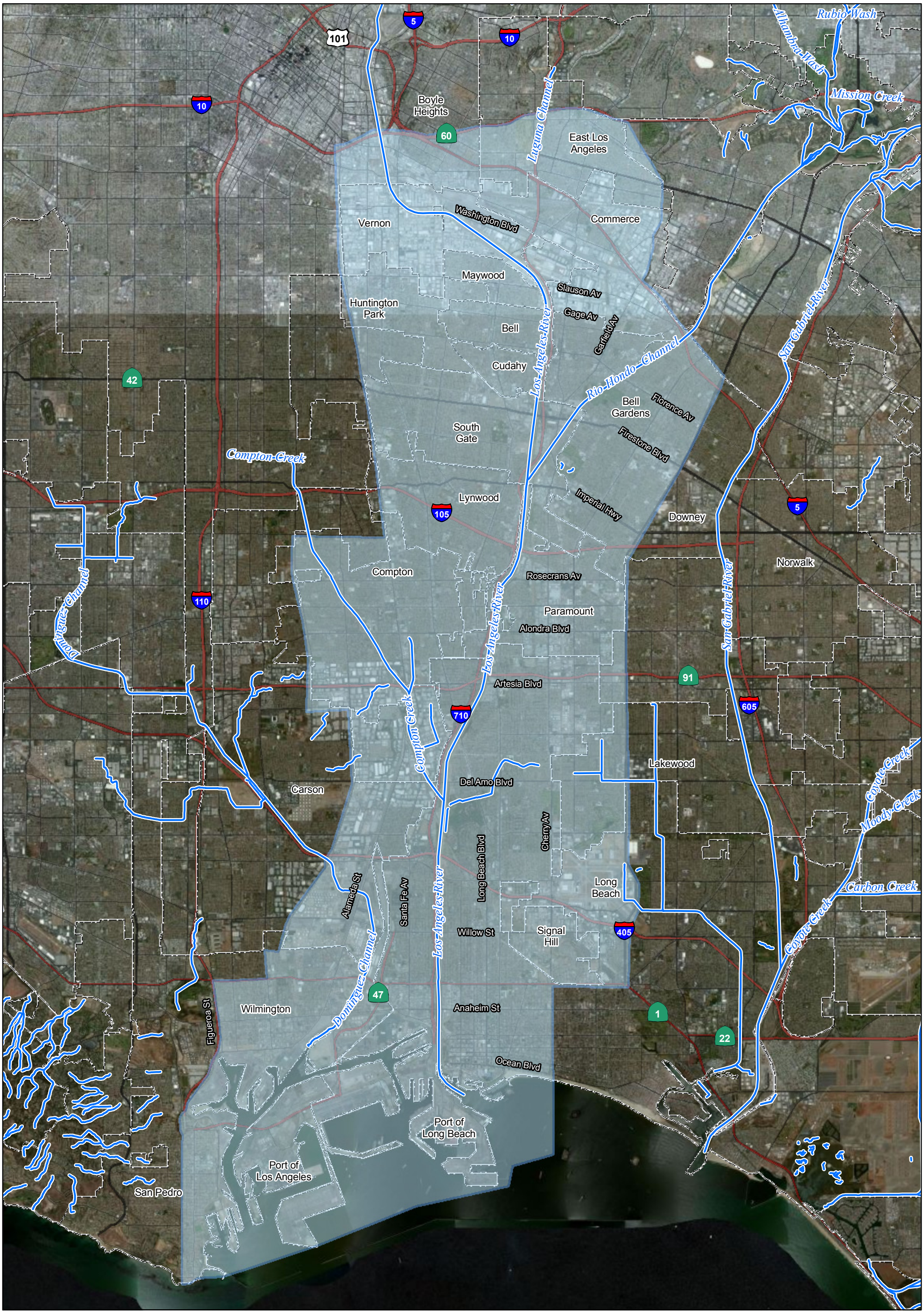

FIGURE 3.9-1

LEGEND

I-710 Study Area

Surface Waters

N

0 1 2

Miles

SOURCE: Bing (2008); TBM (2007)

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I-710 Corridor Project EIR/EIS

Surface Waters

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LOS ANGELES RIVER. The Los Angeles River begins in Canoga Park in the city of Los Angeles and flows to the Pacific Ocean in the city of Long Beach. The Los Angeles River within the I-710 Corridor Study area is an unvegetated, concrete- and riprap-lined trapezoidal channel. A small portion of the Los Angeles River south of Willow St. in Long Beach has a natural bottom and supports riparian vegetation. The flow in the Los Angeles River varies greatly over the course of the year. During the dry season, most of the water in the river is from wastewater effluent, whereas in the wet season, the river contains runoff from large storms. In addition to variability in seasonal flow, the flow in the channel increases greatly as the river flows toward its mouth on the Pacific Ocean.

COMPTON CREEK. Compton Creek originates at the convergence of several underground storm drains in the city of Los Angeles at Main St. between 107th St. and 108th St. Compton Creek merges with the Los Angeles River just south of the I-710/Del Amo Blvd. interchange. Compton Creek flows generally south through a 5.8-mile channel reach with a concrete bottom and vertical sides. The channel widens just north of State Route 91 (SR-91) in the city of Compton and has a natural earthen bottom and armored trapezoidal sides, which extend approximately 2.7 miles to just above the confluence with the Los Angeles River. In this earthen-bottom portion, vegetation is present in the channel bottom. Flows within Compton Creek are perennial.

RIO HONDO CHANNEL. The Rio Hondo Channel originates in the city of Irwindale and merges with the Los Angeles River just north of the I-710/Imperial Hwy. interchange. Rio Hondo Channel is an unvegetated rectangular concrete channel with intermittent flows.

DOMINGUEZ CHANNEL. The Dominguez Channel extends from the Los Angeles International Airport to the Los Angeles Harbor. Tributaries to Dominguez Channel include several storm drains and minor channels.

I-710 ON-SITE DRAINAGE. The existing on-site drainage systems consist of a series of drainage inlets along the median and shoulders, cross culverts, asphaltic concrete dikes, overside drains, concrete and earthen channels, and pump stations. The northbound and southbound I-710 mainline lanes generally sheet flow to the outside edge of the shoulder, which is then concentrated by inlets into the underground drainage system. In the superelevation portion of the I-710 Corridor Project, the stormwater runoff drains to the median, where drainage inlets convey the runoff to the cross drainage facilities.

3.9.2.2 SURFACE WATER BENEFICIAL USES

Beneficial uses form the cornerstone of water quality protection under the Basin Plan. Appropriate water quality objectives are identified in the Basin Plan in relation to the designated beneficial uses to ensure the protection of these uses. The designated beneficial uses, together with water quality objectives, form the water quality standards. Existing beneficial uses for

the Los Angeles River, Compton Creek, the estuarine portion of Dominguez Channel, the Rio Hondo Channel, the Los Cerritos Channel, and the Los Angeles/Long Beach Harbor are presented in Table 3.9-1. To preserve the beneficial uses at their current level, water quality objectives have been developed and published in the basin plans.

Table 3.9-1 Beneficial Uses of Inland Surface Waters and Coastal Waters Los Angeles Region Water Quality Control Plan

Surface Water Feature	Existing Beneficial Uses	Intermittent Beneficial Uses	Potential Beneficial Uses
Compton Creek	▪ Groundwater Recharge ▪ Contact Water Recreation ▪ Non-contact Water Recreation ▪ Warm Freshwater Habitat ▪ Wildlife Habitat ▪ Wetland Habitat		▪ Municipal & Domestic Supply
Dominguez Channel (in estuary)	▪ Contact and Noncontact water Recreation ▪ Preservation of Rare, Threatened or Endangered Species ▪ Commercial and Sportfishing ▪ Marine, Estuarine, and Wildlife Habitat ▪ Migratory and Spawning habitat		▪ Navigation
Los Cerritos Channel (Los Angeles – Long Beach Harbor)	▪ Wildlife Habitat ▪ Wetland Habitat	▪ Non-contact Water Recreation ▪ Warm Freshwater Habitat	▪ Municipal & Domestic Supply ▪ Contact Water Recreation
Los Angeles River	▪ Groundwater Recharge ▪ Contact Water Recreation ▪ Non-contact Water Recreation ▪ Warm Freshwater Habitat ▪ Wildlife Habitat ▪ Wetland Habitat		▪ Municipal & Domestic Supply ▪ Industrial Process Supply
Inner Los Angeles – Long Beach Harbor	▪ Industrial Service Supply ▪ Navigation ▪ Noncontact Water Recreation ▪ Commercial and Sport Fishing ▪ Marine Habitat ▪ Rare, Threatened or Endangered Species		▪ Water Contact Recreation ▪ Shellfish Harvesting
Rio Hondo Channel	▪ Non-contact Water Recreation ▪ Rare, Threatened, or Endangered Species	▪ Groundwater Recharge ▪ Contact Water Recreation ▪ Wildlife Habitat	▪ Municipal & Domestic Supply ▪ Warm Freshwater Habitat

Source: Los Angeles Regional Water Quality Control Board Basin Plan, 1994.

3.9.2.3 SURFACE WATER QUALITY

Pollutants in urban runoff from dense clusters of residential, industrial, and other urban activities have impaired water quality in the majority of the Los Angeles River Watershed. Added to this complex mixture of pollutant sources (in particular, pollutants associated with urban and stormwater runoff) is the high number of point source permits. Excessive nutrients (and their effects) and coliform are widespread problems in the watersheds, as well as excessive metals. The majority of the Los Angeles River Watershed is considered impaired due to a variety of point and nonpoint sources. The Los Angeles River, Compton Creek, the Rio Hondo Channel, and the Dominguez Channel are all listed as impaired on the 2010 CWA Section 303(d) List of Water Quality Limited Segments.

The Los Angeles River Estuary (Queensway Bay) is listed as impaired for chlordane (sediment), DDT (dichlorodiphenyltrichloroethane) (sediment), PCBs (polychlorinated biphenyls) (sediment), sediment toxicity, and trash. The Los Angeles River Reach 1 (Estuary to Carson St.) is listed as impaired for coliform bacteria, cyanide, cadmium, diazinon, trash, ammonia, dissolved copper, lead, nutrients (algae), pH, and dissolved zinc. The Los Angeles River Reach 2 (Carson St. to Figueroa St.) is listed as impaired for coliform bacteria, copper, nutrients (algae), oil, trash, ammonia, and lead.

Compton Creek is listed as impaired for coliform bacteria, benthic-macroinvertebrate bioassessments, trash, copper, lead, and pH. Rio Hondo Channel (Reach 1 from the confluence with the Los Angeles River to the Santa Ana Freeway) is listed as impaired for coliform bacteria, copper, lead, toxicity, trash, zinc, and pH.

Dominguez Channel is listed as impaired for ammonia, copper, diazinon, indicator bacteria, lead, toxicity, and zinc.

TMDLs[1] must be developed for waters listed as impaired on the Section 303(d) List of Water Quality Limited Segments. Table 3.9-2 presents approved TMDLs and TMDLs being developed for water bodies affected by the I-710 Corridor Project.

[1] TMDLs are the total amount of a constituent that can be discharged while meeting water quality objectives and protecting beneficial uses. It is the sum of the individual load allocations for point-source inputs (e.g., an industrial plant), load allocations for nonpoint-source inputs (e.g., runoff from urban areas), and the natural background with a margin of safety included.

Table 3.9-2 Expected and Approved Total Maximum Daily Loads

Pollutant	TMDL Requirement Status	Expected TMDL Completion Date	Date of USEPA Approved TMDL
Ammonia	B		03/18/2004
Bacteria	A	01/01/2007	
Benthic-Macroinvertebrates	A	01/01/2021	
Benzo[a]anthracene	A	01/01/2019	
Benzo(a)pyrene (PAHs)	A	01/01/2019	
Bioassessments	B	01/01/2009	
Cadmium	B		12/22/2005
Chlordane (sediment)	A	01/01/2019	
Chrysene (C1-C4)	A	01/01/2019	
Coliform	A		12/22/2005
Copper	B		12/22/2005
Cyanide	A	01/01/2019	
Diazinon	A	01/01/2019	
dichlorodiphenyltrichloroethane (DDT) (sediment)	A	01/01/2019	
Dieldrin (tissue)	A	01/01/2019	
Lead	B		07/24/2008
Nutrients (Algae)	B		03/18/2004
Oil	A	01/01/2019	
PCBs (Polychlorinated biphenyls)	A	01/01/2019	
PCBs (Polychlorinated biphenyls) (sediment)	A	01/01/2019	
pH	B		03/18/2004
Phenanthrene	A	01/01/2019	
Pyrene	A	01/01/2019	
Sediment Toxicity	A	01/01/2021	
Trash	B		07/24/2008
Zinc	A		12/22/2005

A = Required TMDL
B = Being addressed by USEPA-approved TMDLs
TMDL = total maximum daily load
USEPA = United States Environmental Protection Agency

3.9.2.4 GROUNDWATER

The I-710 Corridor Project is located within the Coastal Plain of the Los Angeles Groundwater Basin and is specifically underlain by the West Coast and Central subbasins. The Coastal Plain of the Los Angeles Groundwater Basin is adjacent to the Santa Monica Mountains and the Puente Hills on the north and east, on the south by the San Joaquin Hills, and on the west by the Pacific Ocean.

Groundwater in the project area migrates southerly, southwesterly, and westerly through the aquifers toward the coast. Shallow, perched aquifers recharged from local surface sources are also present in the project area.

The primary source of groundwater in the Study Area is rain and snow melt from the San Gabriel Mountains that travels through washes and creeks into the San Gabriel River and the Rio Hondo Channel, where some of the water flow is diverted into infiltration (percolation) spreading grounds or basins along those rivers to the northeast of the Study Area.

The Dominguez Gap Basin, located between the I-710 freeway and the Los Angeles River just north of the I-405 interchange, is one of three interconnected basins used to provide recharge to the local groundwater table. The two remaining basins are located on the east side of the Los Angeles River. The west basin is operated by the County of Los Angeles and infiltrates peak flows from storm events into the ground through a pervious surface layer. The basins also provide habitat for local species.

Groundwater has been encountered in many test borings along the project alignment during previous investigations for bridge construction by Caltrans and Los Angeles County. Groundwater encountered in the bridge test borings within the Study Area was on the order of 5 to 15 feet below the ground surface (bgs) at the south end of the Study Area in the vicinity of Ocean Blvd. north to Pacific Coast Hwy. (SR-1). North of this area at Wardlow Rd. and I-405, the depth to groundwater increased to approximately 45 feet bgs. In the area north to the Miller Wy. undercrossing (approximately 1.8 miles north of I-405), groundwater was encountered at all bridge locations at depths ranging from 2.9 feet bgs at the Atlantic Ave. undercrossing to approximately 71 feet bgs at the Compton Blvd. overcrossing. In the area north of this location to the north end of the project alignment, groundwater depths ranged from 2.2 feet bgs at the Gage Ave. bridge to greater than the maximum depth explored of 113 feet bgs at the Cheli Depot overhead. It is likely that some of the depths to groundwater represent local perched water tables, especially some of the shallowest depths.

3.9.2.5 GROUNDWATER BENEFICIAL USES

The following existing beneficial uses are identified in the Los Angeles Regional Water Quality Control Board Basin Plan (Basin Plan) for the West Coast and Central subbasins of the Coastal Plain of the Los Angeles Groundwater Basin:

- Municipal and Domestic Supply
- Agricultural Supply

- Industrial Process Supply
- Industrial Service Supply

3.9.2.6 GROUNDWATER QUALITY

The majority of the groundwater in the West Coast and Central subbasins is of high quality and requires little to no treatment before being pumped out of wells and used as potable water for the public. The subbasins' underlying gravel, sand, silt, and clay formations provide for slow fluid movement, which improves groundwater quality through a process known as geopurification.

The most commonly detected groundwater contaminants are, in order of findings: arsenic, perchloroethylene (PCE), trichloroethylene (TCE), total dissolved solids (TDS), manganese, and odor. In addition, seawater intrusion along the lower portions of both subbasins has produced deterioration of water quality over time.

3.9.3 ENVIRONMENTAL CONSEQUENCES

3.9.3.1 PERMANENT IMPACTS

BUILD ALTERNATIVES.

ALTERNATIVE 5A. Alternative 5A would require replacing or extending the existing on-site drainage systems such as drainage inlets along the median and shoulders with new drainage systems that can accommodate the increased project flows.

The existing drainage systems that transfer legacy runoff from the adjacent neighborhoods through the I-710 Corridor would be modified to accommodate the improvements proposed as part of Alternative 5A while still maintaining the existing hydraulic capacity required to accommodate legacy storm flows. Existing Los Angeles River drainage outlets would be maintained in their existing location whenever hydraulically feasible and when not impacted by the proposed improvements.

In terms of the long-term effects, Alternative 5A has the potential to impact water quality because it would result in an increase in roadway surface area. The increase in impervious area for Alternative 5A is 110 acres. This increase in impervious area brings an increase in runoff volume and pollutant loads that require treatment.

The long-term surface runoff operational effects on water quality stemming from construction of Alternative 5A considers only the continuous impact on contaminant runoff throughout the life of the new facility. This typically includes the following impacts on receiving water quality:

- Incidental drippings from vehicle and accidental spills that introduce contaminant material or waste discharge from the new bridge and its approach structures
- Maintenance activities, such as bridge painting, surface treatments and surface cleaning, substructure repair, joint repair, repairing drainage structures and pavement repair, and repaving

Surface runoff would be designed to flow directly into the closest stormwater channel. From an operational standpoint, impacts to water quality may be expected from the loading of various constituents typically associated with highway runoff into the channel. These constituents may include the following:

- Particulates from pavement wear and vehicles
- Metals, such as zinc, lead, iron, copper, cadmium, chromium, nickel, and manganese
- Bromide (from leaded gasoline exhaust)
- Diesel fuel
- Tire wear
- Auto body rusting
- Metal plating
- Brake lining wear
- Greases and lubricating oils from automobiles and trucks
- Trash discarded from vehicles and along the roadside
- Pathogenic bacteria (indicators) from soil, litter, bird droppings, and stockyard waste hauled by vehicles on the new bridge

These potential operational impacts would be addressed through the incorporation of design development Best Management Practices (BMPs), treatment BMPs, and adherence to the necessary operational maintenance protocols identified in the Caltrans SWMP. These requirements are specified in Measure WQ-1 in Section 3.9.4.1, below. Selection of operational BMPs would be refined during final design and would include design development, treatment BMPs, and maintenance BMPs. Proposed design development

BMPs include preserving existing vegetation wherever feasible, incorporation of concentrated flow conveyance systems with velocity-reducing outlet structures, and providing slope protection with vegetation. Proposed treatment BMPs include 24 biofiltration swales, 8 infiltration basins, 22 media filters, 1 detention basin, 7 gross solids removal devices, and 1 wet basin. All permanent treatment BMPs will have maintenance requirements associated with their implementation. Proposed operational maintenance BMPs include storm drain cleaning and normal roadway and bridge maintenance, in addition to maintaining all vegetated slopes. The introduction of treatment BMPs as part of Alternative 5A would represent an improvement when compared to the No-Build condition, as there currently are 18 California Department of Transportation (Caltrans) maintained BMPs treating freeway runoff on I-710.

Permanent impacts to the water quality of groundwater in the vicinity of the I-710 Corridor Project would be minimal upon completion of the construction because there would not be any increase in the transport of pollutants into the groundwater through infiltration during the operational life of the new structures. The sediment surface of some of the affected channels is impervious, while other locations are natural bottom. Operation of the I-710 Corridor Project would not change the nature or extent of these surfaces; therefore, no net gain or loss in infiltration is anticipated from operation of Alternative 5A. The treatment BMPs selected may provide infiltration opportunities along the alignment, which would be a positive influence to the local hydrogeology.

With the incorporation of the proposed site-specific BMPs during the operational phase of the I-710 Corridor Project, along with adherence to BMP and operational maintenance protocols, no adverse impacts to water quality due to operation of the proposed improvements are anticipated.

ALTERNATIVES 6A/B/C. Permanent water quality impacts during operation of Alternatives 6A/B/C are similar to those discussed above under Alternative 5A. However, Alternatives 6A/B/C would result in an increase in impervious area of 326 acres, which is greater than the increase for Alternative 5A. The increase in impervious surface, and therefore the increase in runoff and pollutant loading under Alternatives 6A/B/C, would be greater than under Alternative 5A.

In addition, Alternatives 6A/B/C include the construction of a freight corridor, which is not proposed under Alternative 5A. The portion of the freight corridor in the vicinity of the I-710/Interstate 105 (I-105) interchange is located at-grade and would require relocation of one of two existing retention basins that serve to meter the peak flows of the Los Angeles River channel. The freight corridor construction would also require the relocation of the Dominguez Gap Basin, located just north of the I-710/I-405 interchange. Several parcels

have been identified adjacent to I-710 and the Los Angeles River for relocation of the Dominguez Gap Basin. The exact location for relocating the basin is being coordinated with the Los Angeles Department of Water and Power. As specified in Mitigation Measure WQ-2, the relocation and reconstruction of the westerly Dominguez Gap Basin will retain the basin's original recharge capacity, at a minimum. Therefore, the relocation of this basin is not anticipated to adversely impact groundwater quantity or quality.

SUMMARY. Alternatives 5A and 6A/B/C would increase impervious surface areas, which would increase runoff volume and pollutant loads. Alternatives 5A and 6A/B/C would require replacement or extension of the existing drainage systems such as drainage inlets along the median and shoulders to accommodate the increased project flows. Impacts to water quality of receiving waters may be expected from the loading of various constituents typically associated with highway runoff. These potential operational impacts would be addressed through the incorporation of design development BMPs, treatment BMPs, and adherence to the necessary operational maintenance protocols identified in the Caltrans SWMP. Proposed design development BMPs include preserving existing vegetation wherever feasible, incorporation of concentrated flow conveyance systems with velocity-reducing outlet structures, and providing slope protection with vegetation. Proposed treatment BMPs include biofiltration swales, infiltration basins, media filters, detention basins, gross solids removal devices, and wet basins. Proposed operational maintenance BMPs include storm drain cleaning and normal roadway and bridge maintenance, in addition to maintaining all vegetated slopes. With the incorporation of the proposed site-specific BMPs during the operational phase of the I-710 Corridor Project, which will treat up to 83 percent of the total surface water runoff under Alternatives 6A/B/C, along with adherence to BMP and operational maintenance protocols, no adverse impacts to water quality due to operation of the proposed improvements are anticipated.

NO BUILD ALTERNATIVE. Under Alternative 1, there would not be an increase in impervious areas or changes in land uses in the Study Area. Therefore, Alternative 1 would not result in an increase in long-term pollutant loading. However, existing roadway runoff in this area would remain untreated. As a result, Alternative 1 would not result in an improvement to water quality.

3.9.3.2 PUBLIC HEALTH CONSIDERATIONS

Water quality BMPs would be implemented to treat stormwater runoff during construction and operation of the build alternatives. As a result, the build alternatives are not anticipated to degrade the water quality of the receiving waters. Treatment BMPs would be designed to drain and eliminate standing water; therefore, vectors (such as mosquitoes) would not be of concern. Therefore, the build alternatives would not pose risks to public health related to hydrology and water quality.

3.9.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Compliance with standard requirements and permits listed in Section 3.24.4.9 would minimize short-term, construction-related impacts to water quality. In addition, the following measures are required for long-term impacts to water quality and groundwater recharge.

WQ-1 The California Department of Transportation (Caltrans) will follow the procedures outlined in the Caltrans Stormwater Quality Handbooks, Project Planning and Design Guide (March 2007 or subsequent issuance) for implementing design development and treatment Best Management Practices (BMPs) for the project. This will include coordination with the Los Angeles Regional Water Quality Control Board (RWQCB) with respect to feasibility, maintenance, and monitoring of Treatment BMPs as set forth in the Caltrans Statewide Stormwater Management Plan (SWMP, May 2003 or subsequent issuance). Caltrans will also comply with other provisions identified in the National Pollutant Discharge Elimination System (NPDES) Permit, Statewide Stormwater Permit and Waste Discharge Requirements (WDRs) for Caltrans (Order No. 99-06-DWQ, NPDES No. CAS000003), or subsequent permit. Caltrans will incorporate design development and treatment BMPs into the design of the project. The selection of BMPs will be refined during final design. Design development BMPs are anticipated to include preserving existing vegetation wherever feasible, incorporation of concentrated flow conveyance systems with velocity-reducing outlet structures, and providing slope protection with vegetation. Treatment BMPs are anticipated to include biofiltration swales, infiltration basins, media filters, detention basins, gross solids removal devices, and/or wet basins. After construction, Caltrans will maintain the treatment BMPs. Operational maintenance BMPs are anticipated to include storm drain cleaning, normal roadway and bridge maintenance, and maintenance of vegetated slopes.

WQ-2 Prior to the completion of final design of Alternatives 6A/B/C, Caltrans shall coordinate with the Los Angeles County Department of Water and Power to identify a suitable location for replacement of the westerly Dominguez Gap Basin that will provide equal or greater capacity than the basin impacted by the freight corridor.