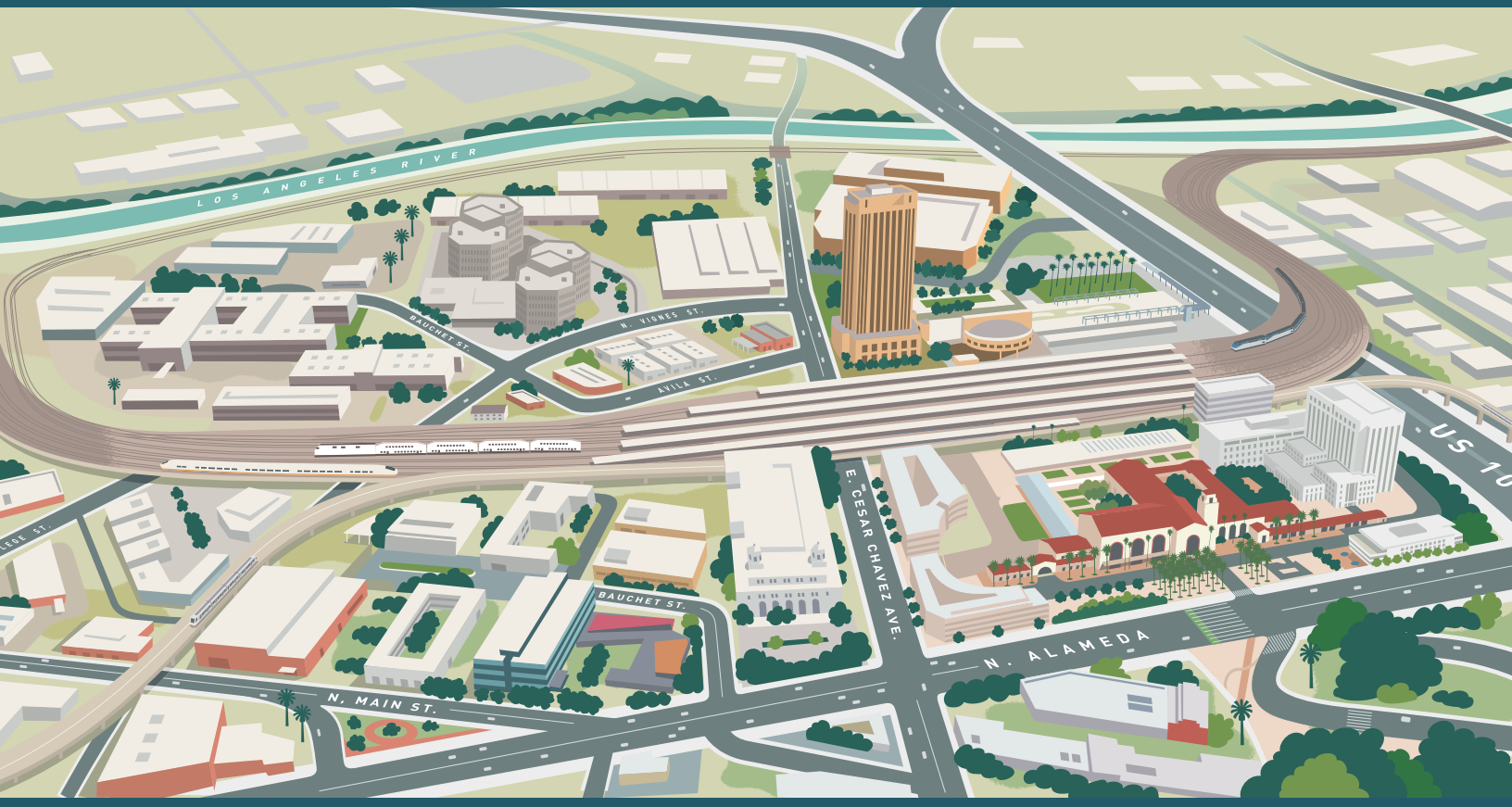
Los Angeles County
Metropolitan Transportation Authority

Link Union Station

Water Quality Assessment Report

June 2019



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CONTENTS

TABLES

FIGURES

ACRONYMS

bgs	below ground surface
BMP	best management practice
Caltrans	California Department of Transportation
CGP	construction general permit
CHSRA	California High-Speed Rail Authority
CWA	Clean Water Act
EWMP	enhanced watershed management program
HSR	High-Speed Rail
HU	hydrologic unit
IGP	industrial general permit
LAUS	Los Angeles Union Station
LID	low impact development
Link US	Link Union Station
Metro	Los Angeles County Metropolitan Transportation Authority
mg/L	milligrams per liter
ml	milliliter
MOU	memorandum of understanding
MS4	municipal separate storm sewer system
No.	Number
NPDES	National Pollutant Discharge Elimination System
POC	pollutant of concern
project	Link Union Station project
ROW	right-of-way
RWQCB	Regional Water Quality Control Board
SUSMP	standard urban stormwater mitigation plan
SWMP	stormwater management plan
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TMDL	total maximum daily load
ULAR	Upper Los Angeles River
U.S.	United States
U.S. EPA	United States Environmental Protection Agency
WQAR	Water Quality Assessment Report

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ES.0 Executive Summary

This Link Union Station (Link US or project) Water Quality Assessment Report (WQAR) includes an evaluation of the proposed infrastructure within California Department of Transportation (Caltrans) right-of-way (ROW) (US-101 viaduct) and outside of Caltrans ROW, utilizing the area encompassing the maximum extent of physical disturbance associated with the proposed project and the build alternative.

During construction, excavated soil would be exposed, and there would be an increased potential for soil erosion compared with existing conditions. Chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste may be spilled or leaked as part of construction and have the potential to be transported via storm runoff into receiving waters. In addition, if the excavated underlying soil contains hazardous materials, there is a possibility those materials could enter the stormwater runoff. The total disturbed areas during construction would be approximately 0.50 and 110.50 acres in Caltrans and non-Caltrans ROW, respectively.

A stormwater pollution prevention plan (SWPPP) would be prepared and implemented during construction. The SWPPP identifies the specific best management practices (BMP), such as good housekeeping, erosion control, and sediment control, to be implemented during project construction so as not to cause or contribute to an exceedance of any applicable water quality standards contained in the Los Angeles Regional Water Quality Control Board (RWQCB) Basin Plan. These BMPs would be designed to meet the technology requirement as stipulated in the construction general permit (CGP).

Implementation of the proposed project or the build alternative would result in a permanent increase in impervious surfaces and a permanent increase in runoff and pollutant loading. Pollutants of concern (POC) from the railroad include sediments, heavy metals, oil and grease, trash and debris, pesticides, and organic compounds. The total existing and maximum proposed impervious surface areas are 70.00 and 73.50 acres, respectively, which equates to a maximum of 3.50 acres of new impervious surface area.

Currently, runoff from the project study area is untreated. Source control and treatment BMPs would be incorporated into the design of the proposed project consistent with the *Draft Stormwater Data Report* (WKE 2018) (Caltrans ROW) and Low Impact Development (LID) Plan (non-Caltrans ROW) to address operational POCs. Proposed source control BMPs include:

- Education of property owners
- Activity restrictions
- Spill contingency plans
- Employee training and education program
- Common area BMP inspection
- Storm drain signage

- Trash storage areas and litter control
- Alternative building materials (e.g., concrete instead of wood ties)

Proposed treatment control BMPs would be consistent with the *Project Planning and Design Guide* (Caltrans ROW) and City of Los Angeles *Planning and Land Development Handbook for Low Impact Development* (LID Manual) (City of Los Angeles 2016) (non-Caltrans ROW). Proposed treatment control BMPs include underground cisterns to reduce runoff volumes and associated pollutants to downstream waterbodies. As compared with the existing condition, any excess runoff is attributed to the proposed increase in impervious surfaces. Similarly, capture and use BMPs and bioretention BMPs are incorporated in the design to treat the runoff prior to discharge to the local storm drain system. These BMPs are an intermediate tier of LID required by the City of Los Angeles. The preferred tier of LID, infiltration and associated infiltration-type BMPs, is not proposed, given the potential for contaminated soils in the project area (HDR 2016a).

After implementation of the following mitigation measures, neither the proposed project nor the build alternative would result in significant water quality impacts:

- A memorandum of understanding (MOU) between the applicable stakeholders to clarify overlapping municipal separate storm sewer systems (MS4) related responsibilities (Mitigation Measure HWQ-1)
- Compliance with the CGP (Mitigation Measure HWQ-2)
- Compliance with the General Waste Discharge Requirements for Discharges of Groundwater Dewatering (Mitigation Measure HWQ-3)
- Compliance with the General Waste Discharge Requirements for Discharges of Contaminated Groundwater Dewatering (Mitigation Measure HWQ-4)
- Compliance with the Caltrans MS4 Permit as it applies to the US-101 overhead viaduct improvements (Mitigation Measure HWQ-5)
- Compliance with the Phase II Permit as it applies to the California High-Speed Rail Authority (CHSRA) facilities (Mitigation Measure HWQ-6)
- Compliance with the Los Angeles County MS4 permit as it applies to non-Caltrans ROW (Mitigation Measure HWQ-7)
- Compliance with the Industrial General Permit (IGP) for demolished, relocated, or new industrial-related properties impacted by the project (Mitigation Measure HWQ-8)

1.0 Introduction

The Los Angeles County Metropolitan Transportation Authority (Metro) is proposing the Link Union Station project to transform Los Angeles Union Station (LAUS) from a "stub-end tracks station" into a "run-through tracks station" with a new passenger concourse that would improve the efficiency of the station and accommodate future growth and transportation demands in the region.

1.1 Project Location and Project Study Area

LAUS is located at 800 Alameda Street in the City of Los Angeles, California. LAUS is bounded by US-101 to the south, Alameda Street to the west, Cesar Chavez Avenue to the north, and Vignes Street to the east. Figure 1-1 depicts the regional location and general vicinity of LAUS.

Figure 1-2 depicts the project study area, which encompasses the extent of environmental study associated with potential direct, indirect, and cumulative impacts from implementation of the project. The project study area includes three main segments (Segment 1: Throat Segment, Segment 2: Concourse Segment, and Segment 3: Run-Through Segment). The existing conditions within each segment are summarized north to south below.

- Segment 1: Throat Segment – This segment, known as the LAUS throat, includes the area north of the platforms, from Main Street at the north to Cesar Chavez Avenue at the south. In the throat segment, all arriving and departing trains traverse five lead tracks into and out of the rail yard, except for one location near the Vignes Street Bridge where the tracks reduce to four lead tracks. Currently, special track work consisting of multiple turnouts and double-slip switches are used in the throat to direct trains into and out of the appropriate assigned terminal platform tracks.
- Segment 2: Concourse Segment – This segment is between Cesar Chavez Avenue and US-101 and includes LAUS, the rail yard, the Garden Tracks (stub-end tracks where private train cars are currently stored, just north of the platforms and adjacent to the existing Gold Line aerial guideway), the East Portal building, the baggage handling building with aboveground parking areas and access roads, the ticketing/waiting halls, and the pedestrian passageway with connecting ramps and stairways below the rail yard.
- Segment 3: Run-Through Segment – This segment is south of LAUS and extends east/west from Alameda Street to the west bank of the Los Angeles River and north/south from Keller Yard to Control Point Olympic. This segment includes US-101, the Commercial Street/Ducommun Street corridor, Metro Red and Purple Lines Maintenance Yard (Division 20 Rail Yard), BNSF West Bank Yard, Keller Yard, the main line tracks on the west bank of the Los Angeles River, from Keller Yard to Control Point Olympic, and the "Amtrak Lead Track" connecting the main line tracks with Amtrak's Los Angeles Maintenance Facility. Businesses within the run-through segment are primarily industrial and manufacturing related.

The project study area has a dense street network ranging from major highways to local city streets. The roadways within the project study area include the El Monte Busway, US-101, Bolero Lane, Leroy Street, Bloom Street, Cesar Chavez Avenue, Commercial Street, Ducommun Street, Jackson Street, East Temple Street, Banning Street, First Street, Alameda Street, Garey Street, Vignes Street, Main Street, Aliso Street, Avila Street, Bauchet Street, and Center Street.

1.2 Proposed Project Overview

The proposed project components are summarized north to south below.

- Throat and Elevated Rail Yard – The proposed project includes subgrade and structural improvements in Segment 1 of the project study area (throat segment) to increase the elevation of the tracks leading to the rail yard. The proposed project includes the addition of one new lead track in the throat segment for a total of six lead tracks to facilitate enhanced operations for regional/intercity rail service providers (Metrolink/Amtrak) and accommodate the planned High-Speed Rail (HSR) system within a shared track alignment. Regional/intercity and HSR trains would share the two western lead tracks in the throat segment. The rail yard would be elevated approximately 15 feet. New passenger platforms with individualized canopies would be constructed on the elevated rail yard, with an underlying assumption that the platform infrastructure and associated vertical circulation elements (stairs, escalators, and elevators) would be modified at a later date to accommodate the planned HSR system. The existing railroad bridges in the throat segment at Vignes Street and Cesar Chavez Avenue would also be reconstructed. North of Control Point Chavez, the proposed project also includes safety improvements at the Main Street public at-grade crossing on the west bank of the Los Angeles River (medians, restriping, signals, and pedestrian and vehicular gate systems) to facilitate future implementation of a quiet zone by the City of Los Angeles.
- Above-Grade Passenger Concourse with New Expanded Passageway – The proposed project includes an above-grade passenger concourse with new expanded passageway in Segment 2 of the project study area (concourse segment). The above-grade passenger concourse with new expanded passageway would include space dedicated for passenger circulation, waiting areas, ancillary support functions (back-of-house uses, baggage handling, etc.), transit-serving retail, office/commercial uses, and open spaces and terraces. The new passenger concourse would create an opportunity for an outdoor, community-oriented space and enhance Americans with Disabilities Act accessibility at LAUS. The elevated portion of the above-grade passenger concourse would be located above the rail yard, approximately 90 feet above the existing grade with new plazas east and west of the elevated rail yard (East and West Plazas). The new expanded passageway would be located below the rail yard to provide additional passenger travel-path convenience and options. Amtrak ticketing and baggage check-in services would occur at two locations at the east and west ends of LAUS, and new carousels would be constructed within the new expanded passageway. The above-grade passenger concourse includes a canopy over the West Plaza up to 70 feet in height, with individual canopies that would extend up to 25 feet over each platform. New vertical circulation elements would also be constructed throughout the concourse to enhance passenger movements

throughout LAUS while meeting Americans with Disabilities Act and National Fire Protection Association platform egress code requirements.

- Run-Through Tracks – The proposed project includes up to 10 new run-through tracks (including a new loop track) south of LAUS in Segment 3 of the project study area (run-through segment). The run-through tracks would facilitate connections for regional/intercity rail trains and HSR trains from LAUS to the main line tracks on the west bank of the Los Angeles River. A "common" viaduct/deck over US-101 and embankment south of US-101, from Vignes Street to Center Street, would be constructed wide enough to support regional/intercity rail run-through service, and future run-through service for the planned HSR system.

The proposed project would also require modifications to US-101 and local streets (including potential street closures and geometric modifications); railroad signal, positive train control, and communications-related improvements; modifications to the Gold Line light rail platform and tracks; modifications to the main line tracks on the west bank of the Los Angeles River; modifications to Keller Yard and BNSF West Bank Yard (First Street Yard); modifications to the Amtrak lead track; new access roadways to the railroad ROW; additional ROW; new utilities; utility relocations, replacements, and abandonments; and new drainage facilities/water quality improvements.

1.3 Build Alternative Overview

The primary differences between the proposed project and the build alternative are related to the lead tracks north of LAUS and the new passenger concourse. Compared to the proposed project, the build alternative includes the following:

- Dedicated Lead Tracks North of LAUS – The build alternative includes reconstruction of the throat, with two new lead tracks that would be located outside of the existing railroad ROW, facilitating a dedicated track alignment, with a total of seven lead tracks. Reconfiguration of Bolero Lane and Leroy Street would also be required.
- At-Grade Passenger Concourse – The build alternative includes an at-grade passenger concourse below the rail yard.

All other infrastructure elements are similar to the proposed project. The components of the build alternative are described north to south below.

- Throat and Elevated Rail Yard – The build alternative accommodates future HSR trains on dedicated lead tracks in the throat segment. The build alternative includes the addition of two new lead tracks for a total of seven lead tracks in the throat segment (with future HSR trains and some express/intercity services using the two western dedicated lead tracks and most regional/intercity trains using the five eastern lead tracks). The rail yard would be elevated approximately 15 feet. New passenger platforms with a grand canopy covering the elevated rail yard would be constructed, with an underlying assumption that the platform infrastructure and associated vertical circulation elements (stairs, escalators, and elevators) would be modified at a later date to accommodate the

planned HSR system. The existing railroad bridges in the throat segment at Vignes Street and Cesar Chavez Avenue would also be reconstructed under the build alternative. North of Control Point Chavez, the build alternative also includes safety improvements at the Main Street public at-grade crossing on the west bank of the Los Angeles River (medians, restriping, signals, and pedestrian and vehicular gate systems) to facilitate future implementation of a quiet zone by the City of Los Angeles.

- At-Grade Passenger Concourse – The build alternative includes a new at-grade passenger concourse that would include space dedicated for passenger circulation, waiting areas, ancillary support functions (back-of-house uses, baggage handling, etc.), transit-serving retail, office/commercial uses, and open spaces and terraces. The at-grade passenger concourse would also create an opportunity for an outdoor, community-oriented space and enhanced Americans with Disabilities Act accessibility. The at-grade passenger concourse would be constructed below the elevated rail yard. Amtrak ticketing and baggage check-in services would occur at a centralized location where new carousels would be constructed at the concourse level. The at-grade passenger concourse also includes new plazas east and west of the elevated rail yard (East and West Plazas), and a grand canopy that would extend up to 70 feet above the elevated rail yard and West Plaza. New vertical circulation elements would also be constructed throughout the concourse to enhance passenger movements throughout LAUS while meeting Americans with Disabilities Act and National Fire Protection Association platform egress code requirements.
- Run-Through Tracks – The build alternative includes up to 10 new run-through tracks (including a new loop track) in the run-through segment. All infrastructure south of LAUS is the same as described above for the proposed project.

The build alternative would also require modifications to US-101 and local streets (including potential street closures and geometric modifications); railroad signal, positive train control, and communications-related improvements; modifications to the Gold Line light rail platform and tracks; modifications to the main line tracks on the west bank of the Los Angeles River; modifications to Keller Yard and BNSF West Bank Yard (First Street Yard); modifications to the Amtrak lead track; new access roadways to the railroad ROW; additional ROW; new utilities; utility relocations, replacements, and abandonments; and new drainage facilities/water quality improvements.

1.4 Purpose

The purpose of the WQAR is to:

- Provide the technical analysis to support the environmental impact evaluation pursuant to California Environmental Quality Act; and
- Provide information for future National Pollutant Discharge Elimination System (NPDES) permitting.

1.5 Approach to Water Quality Assessment

This WQAR includes an analysis of potential project-related water quality impacts, utilizing the area encompassing the maximum extent of physical disturbance associated with the proposed project and the build alternative. Figure 1-3 depicts the maximum extent of where project-related impacts would occur from the proposed project or the build alternative.

The WQAR includes a discussion of the major project components, general environmental setting of the project study area, and regulatory framework with respect to water quality. It also provides data on surface water and groundwater resources within the project study area and the water quality of these waters, describes water quality impairments and beneficial uses, identifies potential water quality impacts/benefits associated with the proposed project and the build alternative, and identifies mitigation measures that are proposed to avoid and/or minimize impacts on water quality.

This WQAR has been prepared in accordance with the *Water Quality Assessment Report Content and Recommended Format* (Caltrans 2017). This document is used to prepare water quality reports for the Standard Environmental Reference. The Standard Environmental Reference applies to all transportation projects developed under the auspices of Caltrans and all local agency highway or local streets and roads projects with funding or approvals by the Federal Highway Administration. The recommended format has been modified to meet the needs of this project. Being a multistakeholder project, the approach is for the WQAR to reflect requirements of Metro, Southern California Regional Rail Authority, CHSRA, City of Los Angeles, and Caltrans.

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Figure 1-1. Project Location and Regional Vicinity

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Figure 1-2. Project Study Area

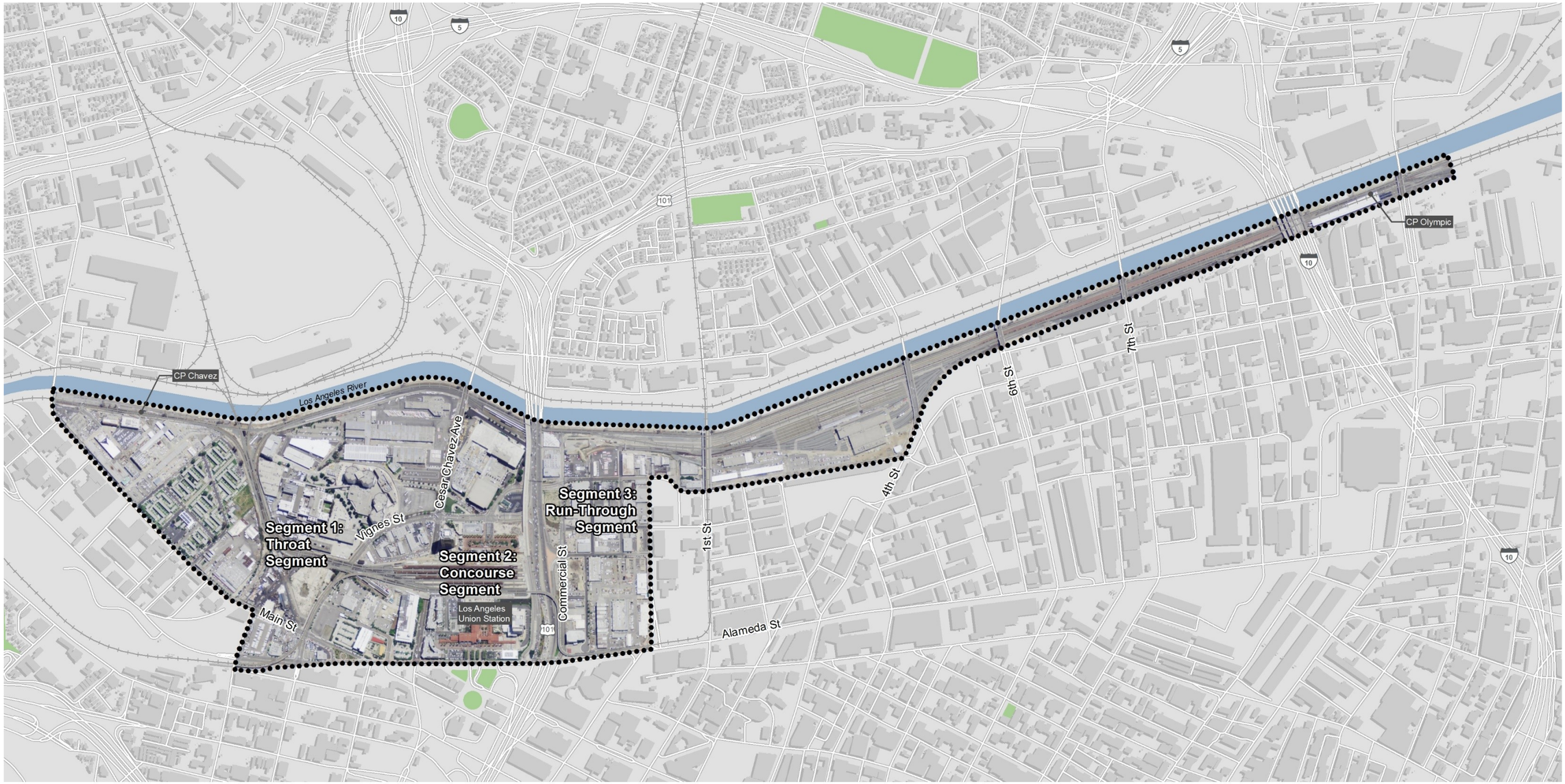

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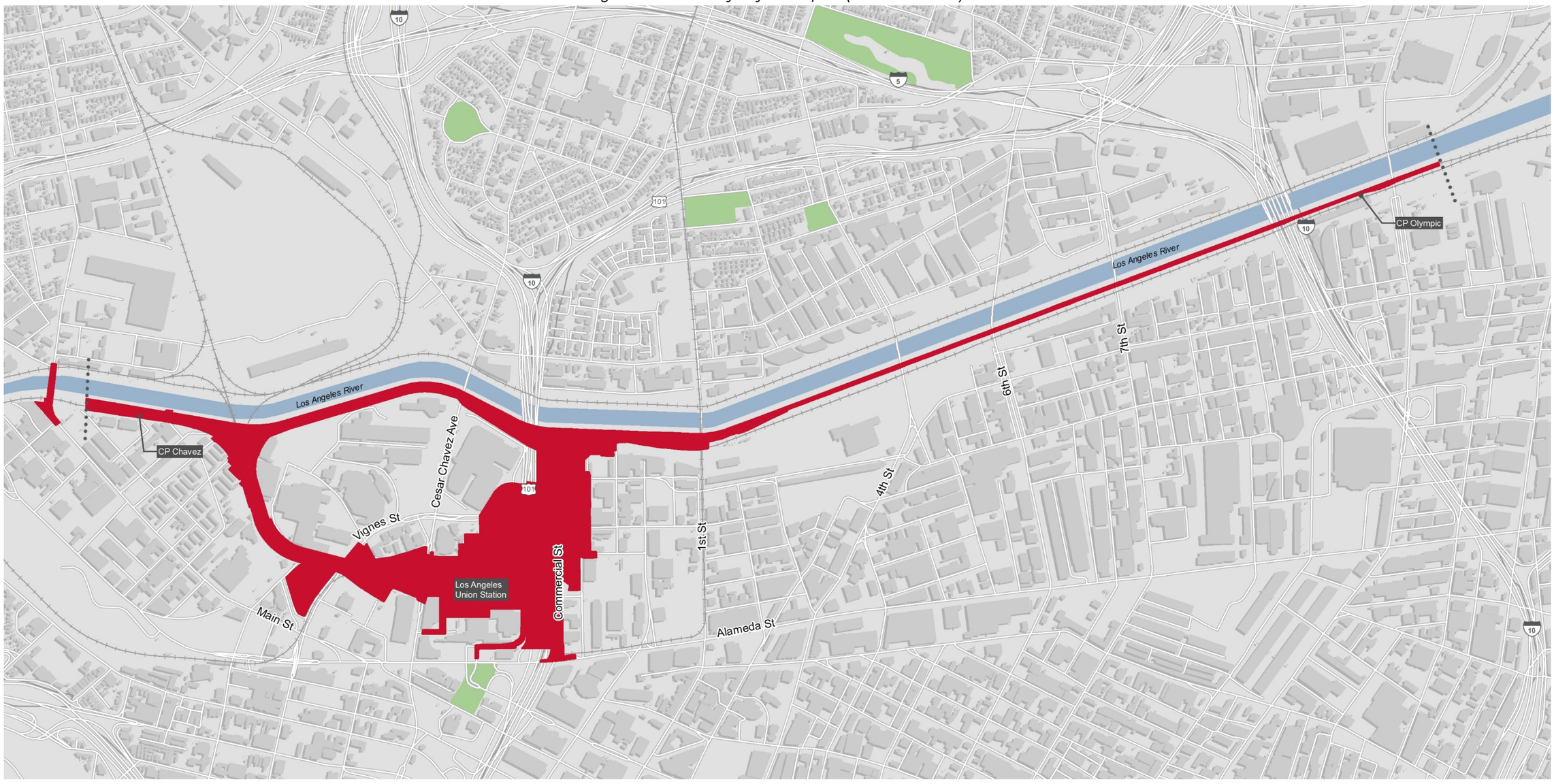
Figure 1-3. Overview of Project Footprint (Maximum Extent)



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2.0 Regulatory Setting

2.1 Federal Laws and Requirements

2.1.1 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 an NPDES permit. Currently known as the Clean Water Act (CWA), it has been amended by Congress several times. In the 1987 amendments, Congress directed dischargers of stormwater from municipal and industrial/construction point sources to comply with the NPDES permit program. Important CWA sections are as follows:

- 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. The U.S. Environmental Protection Agency (U.S. EPA) delegated to the California State Water Resources Control Board (SWRCB) the implementation and administration of the NPDES program in California. SWRCB established nine RWQCBs. SWRCB enacts and enforces the federal NPDES program, as well as all water quality programs and regulations that cross regional boundaries. The nine RWQCBs enact, administer, and enforce all programs, including NPDES permitting, within their jurisdictional boundaries. Section 402(p) requires permits for discharges of stormwater from industrial, construction, and MS4s.
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S., including wetlands. This permit program is administered by the U.S. Army Corps of Engineers.

The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

The U.S. Army Corps of Engineers issues two types of Section 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental impact. Nationwide permits are issued to authorize a variety of minor project activities with no more than minimal impacts. Based on the results of the *Link US Natural Environmental Study (Minimal Impact)* (HDR 2019a), no waters

of the U.S. are located within the project study area; therefore, Sections 401 and 404 of the CWA are not applicable to the project.

CWA Section 402(p) and the implementing regulations make a distinction between Large and Medium MS4s, which are commonly referred to as "Phase I" MS4s-and Small MS4s, referred to as "Phase II" MS4s. There are important differences in how Phase I and Phase II MS4s are regulated.

Large and Medium MS4s are called "Phase I" because they were included in the U.S. EPA's first round of MS4 regulations in 1990. Large and Medium MS4s are subject to the same permitting requirements under the CWA, although some state permitting programs may have slightly different requirements for each. Phase I MS4s are classified based on the population served in the 1990 U.S. Census.

The Phase I (Large MS4) regulations include incorporated places with populations of 250,000 or more based on the 1990 U.S. Census, or counties with unincorporated urbanized areas with populations of 250,000 or more based on the 1990 U.S. Census. The Phase I (Medium MS4) regulations include incorporated places with populations between 100,000 and 250,000 based on the 1990 U.S. Census, or counties with unincorporated urbanized areas with populations between 100,000 and 250,000 based on the 1990 U.S. Census. Nationwide, there are approximately 855 Phase I MS4s covered by 250 Individual Permits.

Small MS4s are defined as any MS4 that does not meet the definition of a Large or Medium MS4. They are often called "Phase II" MS4s because they were included in the U.S. EPA's second round of MS4 regulations in 1999. Small MS4s include smaller cities, towns, and counties. MS4s operated by other types of federal, state, or local governmental entities, such as military bases, public universities, prisons, and state highway agencies, also are classified as Small MS4s. Most of the 6,695 Phase II MS4s are covered by statewide General Permits; however, some states use individual permits (U.S. EPA 2018).

An important distinction from Phase I MS4s is that not all Small MS4s are regulated. Some Small MS4s or portions of Small MS4s are not required to obtain NPDES permit coverage. A Small MS4 must obtain an NPDES permit only in two situations: if it (1) is within a Census designated urbanized area or (2) has been designated by the permit authority as requiring a permit.

2.2 State Laws and Regulations

2.2.1 Porter-Cologne Water Quality Control Act

California's Porter-Cologne Water Quality Control 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., such as 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 Water Quality Control Act are

permitted by waste discharge requirements and may be required even when the discharge is already permitted or exempt under the CWA.

SWRCB and RWQCBs are responsible for establishing the water quality standards, as required by the CWA, and regulating discharges to protect beneficial uses of waterbodies. Details regarding water quality standards in a project area are contained in the applicable RWQCB basin plan. In California, regional boards designate beneficial uses for all waterbody segments in their jurisdictions and then set standards necessary to protect those uses. Consequently, the water quality standards developed for particular waterbody segments are based on the designated use and vary depending on such use. Waterbody segments that fail to meet standards for specific pollutants are included in a statewide list in accordance with CWA Section 303(d). If a regional board determines waters are impaired for one or more constituents and the standards cannot be met through point source or non-point source controls (NPDES permits or waste discharge requirements), the CWA requires the establishment of total maximum daily loads (TMDL). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed. SWRCB implemented the requirements of CWA Section 303(d), and it includes specific TMDLs and associated stakeholders.

2.2.2 State Requirements under Section 402 of the Clean Water Act

National Pollutant Discharge Elimination System Program

The project is located within the Lower Los Angeles River Watershed (Chavez Ravine-Los Angeles River) and is within the jurisdiction of several entities.

California Department of Transportation Municipal Separate Storm Sewer System Permit

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of stormwater discharges, including MS4s. An MS4 is defined as "any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm-water, that is designed or used for collecting or conveying storm-water." SWRCB has identified Caltrans as an owner/operator of an MS4 under federal regulations. Caltrans' MS4 permit covers all respective ROWs, properties, facilities, and activities in the state, including the portion of Caltrans ROW in the project footprint(s) for the proposed project and build alternative. SWRCB or RWQCB issues NPDES permits for 5 years, and permit requirements remain active until a new permit has been adopted.

Caltrans' MS4 Permit (Order Number [No.] 2012-0011-DWQ) was adopted September 19, 2012, and became effective July 1, 2013, as amended by Order No. 2014-0006-EXEC (effective January 17, 2014), Order No. 2014-0077-DWQ (effective May 20, 2014), and Order No. 2015-0036-EXEC (conformed and effective April 7, 2015). The permit has three basic requirements:

- Caltrans must comply with the requirements of the CGP (see below).
- Caltrans must implement a year-round program in all parts of the state to effectively control stormwater and non-stormwater discharges.
- Caltrans' stormwater discharges must meet water quality standards through implementation of permanent and temporary (construction) BMPs, to the maximum extent practicable, and other measures SWRCB determines to be necessary to meet the water quality standards.

To comply with the permit, Caltrans developed the statewide stormwater management plan (SWMP) to address stormwater pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within Caltrans for implementing stormwater management procedures and practices, as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices that Caltrans uses to reduce pollutants in stormwater and non-stormwater discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs.

The guidelines and procedures outlined in the latest SWMP will be reviewed to address project-related stormwater runoff.

The proposed project and the build alternative are subject to the Caltrans MS4 Permit for the portion of the overhead viaduct crossing US-101 within Caltrans ROW.

Construction General Permit

The CGP (Order No. 2009-009-DWQ), adopted September 2, 2009, became effective July 1, 2010. This permit has since been amended twice by Order Nos. 2010-0004-DWQ and 2012-0006-DWQ, which are currently in effect. The permit regulates stormwater discharges from construction sites that result in a disturbed soil area of 1 acre or greater and/or are smaller sites that are part of a larger common plan of development. By law, all stormwater discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least 1 acre must comply with the provisions of the CGP. Construction activity that results in soil disturbances of less than 1 acre is subject to this CGP 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 SWPPPs; implement sediment, erosion, and pollution prevention control measures; and obtain coverage under the CGP.

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

compulsory stormwater runoff pH and turbidity monitoring, as well as before 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 SWPPP. In accordance with the Caltrans standard specifications, a water pollution control plan is necessary for projects with a disturbed soil area less than 1 acre (Caltrans 2003).

Additionally, the CGP requires that all dischargers comply with certain post-construction runoff reduction and stormwater quality requirements unless they are located within an area subject to post-construction standards of an active Phase I or II MS4 permit that has an approved SWMP (such as the one related to Los Angeles County NPDES MS4 Permit, Order No. R4-2012-0175 as amended by Water Quality Order 2015-0075, NPDES Permit No. CAS004001). These post-construction requirements would normally apply to Metro and Southern California Regional Rail Authority projects within their property; however, the project is being designed to comply with the LID ordinance and standard urban stormwater mitigation plan (SUSMP) requirements (as required by the SWMP) for the City of Los Angeles (Los Angeles County NPDES MS4 Permit, Order No. R4-2012-0175), which are typically more stringent than the applicable MS4s. See Section 2.3 for additional information.

Small Municipal Separate Storm Sewer System Phase II Permit

MS4 permits were issued in two phases. Under Phase I, which started in 1990, the RWQCBs adopted NPDES stormwater permits for medium (serving between 100,000 and 250,000 people) and large (serving 250,000 or more people) municipalities. The City of Los Angeles, along with other cities in Los Angeles County, has been issued a Phase I MS4 permit as a group. See Section 2.3.1 for additional information.

On April 30, 2003, as part of Phase II, SWRCB issued a General Permit for the Discharge of Stormwater from Small MS4s (Water Quality Order No. 2003-0005-DWQ) to provide permit coverage for smaller municipalities (population less than 100,000), including non-traditional Small MS4s, which are facilities such as military bases, public campuses, and prison and hospital complexes. The Phase II Small MS4 General Permit covers Phase II permittees statewide. On February 5, 2013, the current Phase II Small MS4 General Permit (Order No. 2013-0001-DWQ) was adopted, and it became effective July 1, 2013.

One of the non-traditional Small MS4 categories included in the permit are local transportation planning agencies, such as Amtrak, Bay Area Rapid Transit, CalTrain, Golden Gate Bridge (Highway and Transportation District), Metropolitan Transit System, North County Transit District, and Valley Transportation Authority. These categories and agencies are reflected in Attachment B of the permit. Metro was not included in the permit as a non-traditional Small MS4; however, CHSRA was designated on August 22, 2014, as being included under the Phase II Small MS4 General Permit. The addition of CHSRA will be reflected in an updated copy of Attachment B to the permit, which will be posted by SWRCB. CHSRA is currently preparing the guidance documents that specify the stormwater runoff controls to reduce the discharge of pollutants and the post-construction stormwater standards. There is no time line when these guidance documents will be available for public use. It is assumed that the planned HSR system would operate on dedicated tracks south of LAUS, and this portion of the project would be under the jurisdiction of the applicable Phase II permit. For purposes of compliance with stormwater quality requirements, the

HSR tracks would be designed to comply with local MS4 requirements, as it is assumed that local requirements are more stringent than Phase II MS4 requirements.

Industrial General Permit

The Statewide General Permit for Stormwater Discharges Associated with Industrial Activities, Order 2014-0057-DWQ (IGP) implements the federally required stormwater regulations in California for stormwater associated with industrial activities discharging to waters of the U.S. The IGP regulates discharges associated with 10 federally defined categories of industrial activities. The IGP requires the implementation of BMPs, a site-specific SWPPP, and a monitoring plan. The IGP also includes criteria for demonstrating no exposure of industrial activities or materials to stormwater and no discharges to waters of the U.S.

It is assumed the BNSF West Bank Yard and Keller Yard have an active IGP-related permit. The proposed project or the build alternative would require demolition and relocation of commercial, industrial, and manufacturing-related businesses. One business is California Drop Forge (manufacturer of metal parts for the aerospace industry), located in the throat segment, which has an active IGP-related permit with SWRCB.

2.3 Regional and Local Requirements

2.3.1 Municipal National Pollutant Discharge Elimination System Permit

The City of Los Angeles is a permittee under the Phase I NPDES Permit and Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles County, except those Discharges Originating from the City of Long Beach MS4, Order No. R4-2012-0175 (NPDES No. CAS004001). The NPDES permit prohibits discharges, sets limits on pollutants being discharged into receiving waters, and requires implementation of technology-based standards.

Under the NPDES permit, the City of Los Angeles, as a permittee, is responsible for the management of storm drain systems within its jurisdiction. Cities are required to implement management programs, monitoring programs, implementation plans, and all BMPs outlined in the Municipal Stormwater Management Program and take any other actions as may be necessary to protect water quality to the maximum extent practicable. In addition, each city is required to implement a municipal stormwater management program and develop a long-term assessment strategy for effectiveness of the municipal stormwater management program.

On December 13, 2001, the Los Angeles RWQCB adopted Order No. 01-182, the NPDES Stormwater Permit for the County of Los Angeles and cities within (NPDES No. CAS004001). The permit was issued to Los Angeles County (principal permittee) and 84 cities (permittees) to reduce pollutants discharged from their MS4 to the maximum extent practicable statutory standard. The permit became effective September 2, 2002.

The permit required development and implementation of a number of stormwater management programs designed to reduce pollutants in stormwater and urban runoff. One of these programs, the Development

Planning Program focuses on preventing pollutants that could be generated from new development and redevelopment projects from reaching stormwater conveyance systems and receiving waters. The Development Planning Program is comprised of, in order of priority, an LID plan, SUSMP, and/or a site specific mitigation plan. These requirements are spelled out in the *Development Best Management Practices Handbook, Low Impact Development Manual, Part B Planning Activities 4th Edition*, dated June 2011 (LID Manual).

Under this program, the RWQCB developed requirements for the SUSMP, which requires specific development and redevelopment categories to manage stormwater runoff. In 2002, the City of Los Angeles implemented the SUSMP program requiring all categories of affected land development projects to capture or treat stormwater runoff. Category projects include:

- Single-family hillside residences
- 100,000 square feet of impervious surface area of industrial/commercial developments
- Automotive service facilities
- Retail gasoline outlets
- Restaurants
- Ten or more unit homes (includes single-family homes, multifamily homes, condominiums, and apartments)
- Parking lots with 5,000 square feet or more of surface area or 25 or more parking spaces
- Projects located in or directly adjacent to or discharging directly to an environmentally sensitive area

A relatively recent stormwater management approach aimed at achieving this goal is the use of LID, which is a stormwater management strategy that seeks to mitigate the impacts of increases in runoff and stormwater pollution as close to its source as possible. LID comprises a set of site design approaches and BMPs that promote the use of natural systems for infiltration, evapotranspiration, and use of stormwater. These LID practices can effectively remove nutrients, bacteria, and metals from stormwater while reducing the volume and intensity of stormwater flows. With respect to urban development and redevelopment projects, it can be applied on site to mimic the site's predevelopment drainage characteristics. Through the use of various infiltration techniques, LID is geared toward minimizing impervious surface area that produces large amounts of runoff and does not allow water to infiltrate into the ground. Where infiltration is infeasible, the use of bioretention, rain gardens, vegetated rooftops, and rain barrels that will store, evaporate, detain, and/or treat runoff can be used.

In November 2011, the City of Los Angeles adopted the Stormwater LID Ordinance (Ordinance #181899) to amend and expand on the existing SUSMP requirements by incorporating LID practices and principles, as well as expanding the applicable development categories. The LID Ordinance has the stated purpose of:

- Requiring the use of LID standards and practices in future developments and redevelopments to encourage the beneficial use of rainwater and urban runoff
- Reducing stormwater/urban runoff while improving water quality
- Promoting rainwater harvesting
- Reducing off-site runoff and providing increased groundwater recharge
- Reducing erosion and hydrologic impacts downstream
- Enhancing the recreational and aesthetic values in communities

The LID Ordinance requires stormwater mitigation for a larger number of development and redevelopment categories that was previously required under the SUSMP. All development and redevelopment projects that create, add, or replace 500 square feet or more of impervious area need to comply with the LID Ordinance. If applicable to the LID Ordinance, project applicants would also be required to prepare an LID plan.

On August 25, 2015, the City of Los Angeles adopted an updated Stormwater LID Ordinance (Ordinance #183833) to amend and expand on the LID requirements. Subsequently, on May 9, 2016, the City of Los Angeles, Board of Public Works, adopted an update to the LID Manual (formally retitled *Planning and Land Development Handbook for Low Impact Development, Part B Planning Activities 5th Edition,* dated May 9, 2016) and corresponding revisions to Section 64.72 of the Los Angeles Municipal Code, approved by Ordinance No. 183833. The LID Manual was made publically available via the City of Los Angeles website in October 2016. The updated LID Manual removed the requirement for a SUSMP and site mitigation plan; now, the only required LID document is the LID plan.

According to the LID Manual, project applicants for all new development and redevelopment projects who are required to prepare an LID plan fall into two categories: small-scale residential development projects (four units or less) and all other developments (residential developments of five units or more and non-residential developments). The proposed project and the build alternative would fall under the "all other developments" category. An LID plan is required to demonstrate that stormwater runoff will be infiltrated, evapotranspired, captured and used, and/or treated through high removal efficiency BMPs on site and stormwater management techniques. The on-site stormwater management techniques must be properly sized, at a minimum, to infiltrate, evapotranspire, store for use, and/or treat through a high removal efficiency biofiltration/biotreatment system, without any stormwater runoff leaving the site, to the maximum extent feasible. This documentation must demonstrate the feasibility or infeasibility of LID-focused BMPs. If partial or complete on-site compliance of any type is technically infeasible, the project and LID plan is required to maximize on-site compliance. Under this option, a mechanical/hydrodynamic

unit may be used. Any remaining runoff that cannot feasibly be managed on site would be managed off site.

Metro and the Southern California Regional Rail Authority are not permittees of the municipal NPDES permit. However, because the project requires permits from the City of Los Angeles, compliance with the LID Ordinance is required. Pursuant to 40 Code of Federal Regulations 122.26(a), the Los Angeles RWQCB has the authority to require non-cooperating entities to adhere to the requirements of the NPDES permit or issue individual discharge permits to those entities.

The *Link US Preliminary Low Impact Development Report* serves as the preliminary LID plan for the project. The preliminary LID plan applies to portions of the project study area outside of the jurisdiction of the Caltrans NPDES MS4 permit, which applies to the ROW for US-101. The project would be designed to be consistent with the guidelines and standards outlined in the City of Los Angeles LID Ordinance. Consequently, Section 2.4 of the LID Manual states that agencies, such as Metro, must prepare an LID plan for non-roadway transportation projects, rail lines, and stations and implement stormwater mitigation measures. The *Link US Preliminary Low Impact Development Report* was prepared to be consistent with City of Los Angeles LID Ordinance No. 183833 (LID Ordinance) and specifies BMPs to be implemented during the post-construction phase.

2.3.2 Enhanced Watershed Management Program for the Upper Los Angeles River Watershed

The MS4 Permit Order No. R4-2012-0175 (Permit) for Los Angeles County provides an innovative approach to permit compliance through development of enhanced watershed management programs (EWMP). Through a collaborative approach, a EWMP for the Upper Los Angeles River (ULAR) Watershed Management Area (EWMP area) was developed by the ULAR EWMP group. The ULAR EWMP group is comprised of the Cities of Los Angeles (lead coordinating agency), Alhambra, Burbank, Calabasas, Glendale, Hidden Hills, La Canada Flintridge, Montebello, Monterey Park, Pasadena, Rosemead, San Fernando, San Marino, South El Monte, South Pasadena, and Temple City, the County of Los Angeles (Unincorporated County), and the Los Angeles County Flood Control District. By electing to comply with the optional compliance pathway in the MS4 Permit, the ULAR EWMP Group has leveraged this program to facilitate a robust, comprehensive approach to stormwater management for the Los Angeles River watershed to address the priority water quality conditions in the EWMP area.

The planning area for the ULAR EWMP is the largest of all the EWMPs being developed in the Los Angeles region, representing 485 square miles of watershed (Figure 2-1) and over 50 miles of main stem Los Angeles River from its headwaters to just above the estuary. The Los Angeles River watershed has been the subject of numerous water quality planning and compliance efforts, and the EWMP leveraged those efforts and identified additional projects to address water quality issues in the ULAR.

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Figure 2-1. Upper Los Angeles River Enhanced Watershed Management Programs Area

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The vision for the EWMP development was to utilize a multipollutant approach that maximizes the retention and use of urban runoff as a resource for groundwater recharge and irrigation while creating additional benefits for the communities in the ULAR watershed. This EWMP presents distributed and regional watershed control measures to address applicable stormwater quality regulations, including LID, green streets, regional projects, and institutional control measures.

This project is within Region 4 (Los Angeles) of the RWQCB. The project is adjacent to Reach 2, consistent with the Los Angeles RWQCB Basin Plan. Major tributaries to Reach 2 include Rio Hondo Reaches 2 and 3, as well as Compton Creek.

The 2012 Los Angeles County MS4 Permit contains effluent limitations, receiving water limitations, minimum control measures, and TMDL provisions, as well as outlines the process for developing watershed management programs, including the EWMP. The MS4 Permit incorporates the TMDL wasteload allocations applicable to dry and wet weather as water quality-based effluent limits and/or receiving water limitations. Section V.A of the permit requires compliance with the water quality-based effluent limits as outlined by the respective TMDLs. The EWMP provides a compliance pathway for attaining these limitations.

A primary driver of the extent and scheduling of control measures that make up the EWMP implementation strategy are the applicable TMDLs in the Los Angeles River watershed. Section 303(d) of the CWA requires states to prepare a list of waterbodies that do not meet water quality standards and establish for each of these waterbodies load and wasteload allocations (loads refers to pollutants [i.e., a TMDL that will ensure attainment of water quality standards]). A TMDL represents an amount of pollution that can be released by anthropogenic and natural sources of a watershed into a specific waterbody without causing a decline in water quality and beneficial uses. Unlike federal law, state law requires regional boards to include an implementation plan for TMDLs, and these plans generally include compliance schedules.

Table 2-1 presents the TMDLs developed for waterbodies within the ULAR EWMP area. For more information, refer to the EWMP for the ULAR watershed, dated March 29, 2016, as approved by the Los Angeles RWQCB on April 20, 2016.

Table 2-1. Total Maximum Daily Loads Applicable to the Upper Los Angeles River Enhanced Watershed Management Programs

TMDL	Los Angeles RWQCB Resolution No.	Effective Date and/or U.S. EPA Approval Date
Los Angeles River nitrogen compounds and related effects (ammonia, nitrate, nitrite)	2003-009	03/23/2004
	2012-010 (amended)	08/07/2014
Los Angeles River trash (nonpoint source, surface runoff, urban runoff/storm drains)	2007-012	09/23/2008
Los Angeles River metals TMDL (natural and anthropogenic sources; cadmium, copper, lead, nickel, mercury, thallium, zinc)	2007-014	10/29/2008
	2010-003 (amended)	11/03/2011
Los Angeles River bacteria TMDL (E. coli)	2010-007	03/23/2012

Notes:
No.=number; RWQCB=Regional Water Quality Control Board; TMDL=total maximum daily load; U.S. EPA=United States Environmental Protection Agency

2.3.3 City of Los Angeles Municipal Code

Stormwater discharge is regulated under Chapter VI Public Works and Property, Article 4.4 – Stormwater and Urban Runoff Pollution Control of the City of Los Angeles Municipal Code. Under Article 4.4, discharge of non-stormwater is permissible only when connection to the storm drain system is made in accordance with a valid city permit, approved construction plan, or an NPDES permit and/or Notice of Intent. In addition, projects within the City of Los Angeles are required to comply with the requirements of the CGP and Municipal NPDES Permit, which includes preparation of an SWPPP and implementation of construction and post-construction BMPs.

2.3.4 General Waste Discharge Requirements for Dewatering

On June 6, 2013, the Los Angeles RWQCB adopted the General Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0095, NPDES No. CAG994004) (Dewatering Permit). This permit covers discharge of groundwater and non-stormwater construction dewatering discharges in the Los Angeles and Ventura region. For coverage under this permit, a discharger is required to submit a Notice of Intent to the Los Angeles RWQCB. Under this permit, discharges must comply with discharge specifications, receiving water limitations, and monitoring and reporting requirements detailed in the permit. The proposed project or the build alternative would be subject to the requirements of the Dewatering Permit because groundwater dewatering discharges are anticipated during construction.

2.3.5 General Waste Discharge Requirements for Dewatering from Contaminated Activities

On March 7, 2013, the Los Angeles RWQCB adopted the General Waste Discharge Requirements for Discharges of Treated Groundwater from Investigation and/or Cleanup of Volatile Organic Compounds-Contaminated Sites to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0043, NPDES No. CAG914001) (Dewatering Permit for Contaminated Activities). This permit covers discharge of groundwater and non-stormwater construction dewatering waste contaminated in the Los Angeles and Ventura region. For coverage under this permit, a discharger is required to submit a Notice of Intent to the Los Angeles RWQCB. Under this permit, discharges must comply with discharge specifications, receiving water limitations, and monitoring and reporting requirements detailed in the permit. The proposed project or the build alternative would be subject to the requirements of the Dewatering Permit for Contaminated Activities because groundwater and other non-stormwater discharge that are contaminated are anticipated to be encountered during construction. According to the *Link US Phase I Environmental Site Assessment* (HDR 2016a), the project study is known to contain contaminated soils.

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3.0 Existing Conditions

This section provides a description of the existing conditions in the project study area relative to this water quality evaluation.

3.1 General Environmental Setting

The project study area is located within the 1,608-square-mile Los Angeles-San Gabriel Hydrologic Unit (HU), one of six defined units within the Los Angeles Basin. Within this HU, the project is located within the approximate 834-square-mile Los Angeles River watershed. This watershed discharges into the Pacific Ocean through the Los Angeles/Long Beach Harbor. The project study area is located on the west side of the Los Angeles River, close to the point where US-101 crosses it. The project is located within a densely developed commercial and industrial area within the incorporated boundaries of the City of Los Angeles.

3.1.1 Population and Land Use

Land use within the project study area reflects a mixture of transportation-related land uses and other developed uses, including educational, residential, institutional, industrial, and commercial uses. Residential land uses in the project study area are limited. There are no natural features or open space areas with native habitat within the project study, including along the concrete-lined portion of the Los Angeles River.

3.1.2 Topography

The project study area is located on flat terrain in an urbanized and heavily developed area. Regionally, the topography slopes southerly and/or toward the Los Angeles River. Elevation within the project study area ranges from approximately 274 to 295 feet above mean sea level (HDR 2016b).

3.1.3 Hydrology

Regional Hydrology

This project study area lies within the Los Angeles River watershed. The eastern portion spans from the Santa Monica Mountains to the Simi Hills, and the western portion spans from the Santa Susana Mountains to the San Gabriel Mountains. The watershed encompasses, and is shaped by, the path of the Los Angeles River, which flows from its headwaters in the mountains eastward to the northern corner of Griffith Park. Here, the channel turns southward through the Glendale Narrows before it flows across the coastal plain and into San Pedro Bay near Long Beach. The Los Angeles River has evolved from an uncontrolled, meandering river providing a valuable source of water for early inhabitants to a major flood protection waterway. The Los Angeles River watershed covers more than 834 square miles.

California Department of Transportation

Based on the Caltrans Water Quality Planning Tool (Caltrans 2018), as it relates to the adjacent US-101, the associated watershed information of the project study area is included below.

CalWater Watershed

- HU: Los Angeles River
- Hydrologic Area: Los Angeles
- Hydrologic Sub-Area Name: undefined
- Hydrologic Sub-Area No.: 412.10
- Hydrologic Region: South Coast
- Planning Watershed: 4412100000

See Figure 3-1 for more information.

Watershed Boundary Dataset

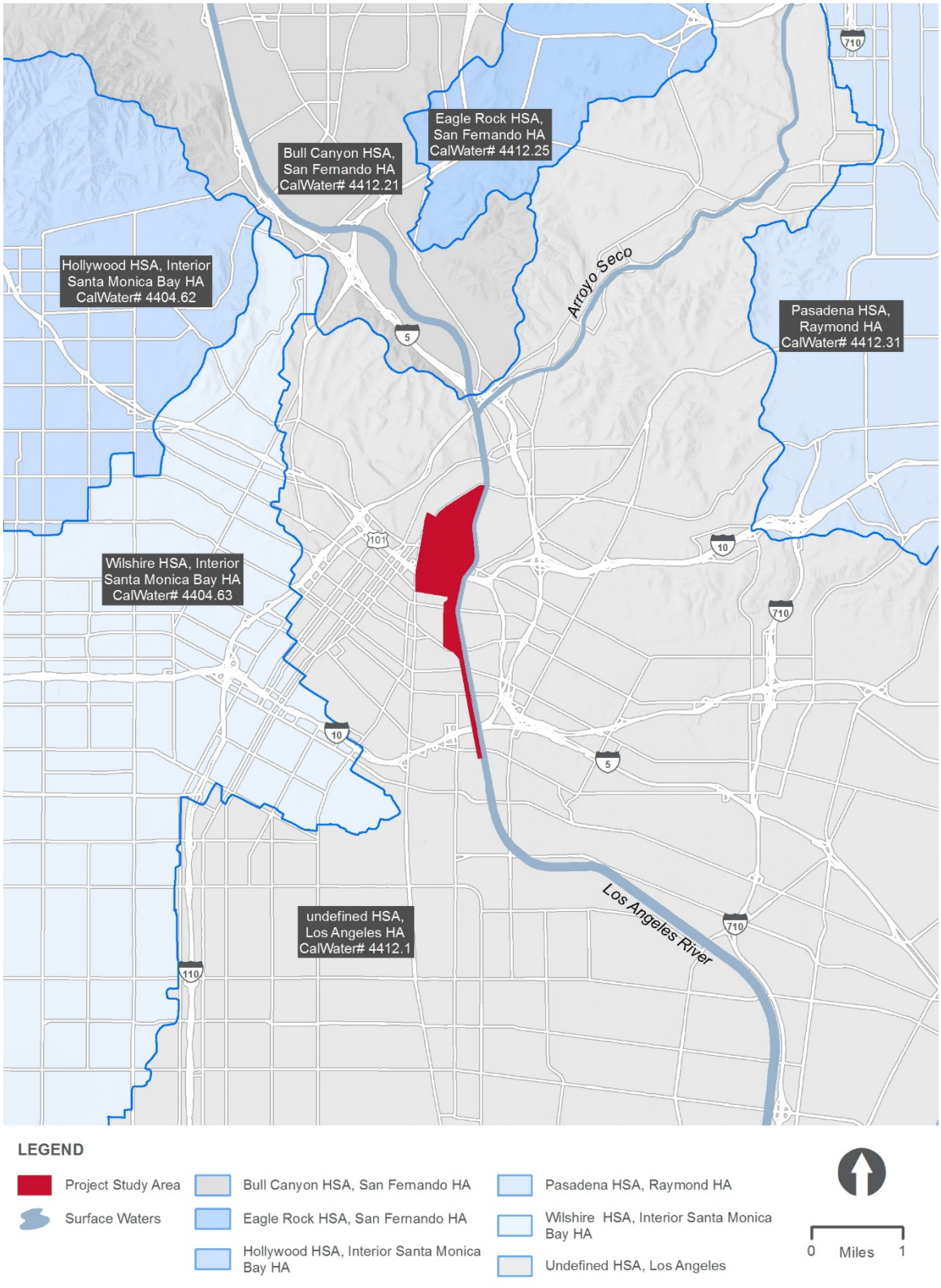
- Watershed: Lower Los Angeles River
- Sub-Watershed: Chavez Ravine-Los Angeles River
- HU Code: 180701050403

The digital watershed delineation information from Los Angeles RWQCB is not consistent with the Los Angeles RWQCB Basin Plan or the associated Overlay #1 Exhibit in Appendix 2 of that plan. This Overlay #1 Exhibit shows different watershed codes (refer to Basin Plan discussion below). When discussing issues related to Caltrans ROW, this WQAR uses watershed codes developed by CalWater.

Non-California Department of Transportation

Based on the Basin Plan (Water Quality Control Plan, Los Angeles Region), the Los Angeles River watershed is divided into hydrologic subareas that are subdivided into hydrologic areas all within a specific HU. The project is located entirely within the Central Hydrologic Subarea Split (405.15) of the Coastal Plain hydrologic areas (405.10) of the Los Angeles-San Gabriel HU (405.00). These water codes are from Overlay #1 Exhibit of Appendix 2 of the Basin Plan, which are different from CalWater. When discussing issues related to non-Caltrans ROW, this report uses watershed codes developed by the Basin Plan.

Figure 3-1. Watersheds and Surface Waters (CalWater Watersheds)



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Local Hydrology

As shown on Figure 3-1, the Los Angeles River is located immediately east of the project study area and is the primary drainage facility in the area and facilitates alluvial groundwater recharge through spreading basin turnouts. The portion of the Los Angeles River adjacent to the project study area is entirely concrete lined. This portion of the river is designated as Reach 2 in the Basin Plan (from Figueroa Street, City of Los Angeles [upstream], to Carson Street, City of Long Beach [downstream]) and as Reach 3 in the Los Angeles River Revitalization Master Plan (from Arroyo Seco [upstream] to Washington Boulevard [downstream]). As this WQAR relies heavily on the Basin Plan, from this point forward, reference is made to Reach 2 unless noted otherwise. Runoff from the project study area is discharged to various storm drain systems, some of which cross portions of the project, and eventually to Reach 2 of the Los Angeles River.

Precipitation and Climate

Local climate conditions are characterized by warm summers, mild winters, infrequent rainfall, moderate humidity, and moderate breezes during the daytime. Periods of hot weather, winter storms, and Santa Ana winds occasionally disrupt the mild climate. Precipitation generally occurs as rainfall during the major storms, with snowfall occurring at higher elevations. The average annual rainfall is 15.5 inches.

Drainage and Flood Control Improvements

Exhibit G of the City of Los Angeles General Plan identifies the project study area to be located within a dam inundation area. Drainage and flood control structures and improvements within the project study area are under the jurisdiction of the following entities: City of Los Angeles Department of Public Works, Bureau of Engineering, Caltrans, and Southern California Regional Rail Authority. Facilities within the jurisdiction of the County of Los Angeles, including Bolero Lane and Leroy Street near Mission Tower, are proposed to be protected in place and are not included as part of the project.

Floodplains

Floodplains for the project study area are shown on Panel 060137-0075D of the Federal Emergency Management Agency Flood Insurance Rate Map. This panel was revised in July 1998 and shows that the 100-year flood boundary does not extend over the west bank of the river in the project study area. The entirety of the proposed project and the build alternative is located in Zone X, Areas of Minimal Flooding.

Municipal Supply

The regional potable water supply is delivered by the Los Angeles Department of Water and Power. The supply is comprised of a mixture of local groundwater resources, recycled water from local water reclamation facilities, and imported water. Approximately half of the water demand is met through the importation of water.

Surface Waters

The Los Angeles River is highly modified, with concrete lining the majority of its length. Along the middle section of the river, it is unlined and supports a natural habitat for fish and other wildlife species. However, the majority of the river is a concrete channel that carries urban runoff, tertiary-treated effluent from several municipal wastewater treatment plants, and illegal dumping. This activity contributes to the impaired water quality in the Los Angeles River and its tributaries.

Surface Water Quality Objectives/Standards and Beneficial Uses

Beneficial uses of water are defined in the Water Quality Control Plan for the Los Angeles River Basin, Region 4 (Basin Plan) as those uses necessary for the survival or well-being of humans, plants, and wildlife. Examples of beneficial uses include drinking water supplies, swimming, industrial and agricultural water supply, and support of freshwater and marine habitats and their organisms.

As identified in Table 2-1 of the Basin Plan, the surface water beneficial uses for Reach 2 of the Los Angeles River, where the project is located, are as follows:

- MUN – Municipal
- GWR – Groundwater Recharge
- IND – Industrial
- REC1 – Water Contact Recreation
- REC2 – Non-contact Water Recreation
- WARM – Warm Freshwater Habitat
- WILD – Wildlife Habitat
- WET – Wetland Habitat

The above beneficial uses are also the same for US-101 within the project study area, as identified on the Caltrans Water Quality Planning Tool website with the exception of WET (Wetland Habitat). These uses are related to the Los Angeles River, between Figueroa Street and Los Angeles River Estuary (Willow Street), which include Reach 2.

Water quality objectives, as defined by California Water Code Section 13050(h), are the "limits or levels of water quality constituents or characteristics, which are established for the reasonable protection of beneficial uses or the prevention of nuisance within a specific area."

The stipulated surface water quality objectives for inland surface waters, which include streams, rivers, lakes, and wetlands as identified in the Basin Plan, are listed in Table 3-1.

The numeric and narrative water quality objectives for Los Angeles River (as related to US-101), which include streams, rivers, lakes, and wetlands, are included in Table 3-1. These narrative water quality

objectives include color, floating material, oil and grease, pH, radioactive substances, settleable material, suspended material, suspended solids, taste and odor, temperature, toxicity, and turbidity. This applies to the entire project, for both the Caltrans and non-Caltrans portions.

Table 3-1. Surface Water Quality Objectives

Constituent	Concentrations
Ammonia, un-ionized	Discharges for 4-day average concentration will not exceed 0.035 mg/L; 1-hour average concentration will not exceed 0.233 mg/L.
Bacteria, Coliform	In waters designated for non-water contact recreation (REC-2) and not designated for water contact recreation (REC-1), the fecal coliform concentration will not exceed a log mean of 2,000/100 ml (based on a minimum of not less than four samples for any 30-day period), nor will more than 10 percent of samples collected during any 30-day period exceed 4,000/100 ml.
Bioaccumulation	Toxic pollutants will not be present at levels that will bioaccumulate in aquatic life to levels that are harmful to aquatic life or human health.
Biochemical oxygen demand	Waters will be free of substances that result in increases in the biochemical oxygen demand that adversely affect beneficial uses.
Biostimulatory substances	Waters will not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.
Chloride	Chloride will not exceed 190 mg/L.
Chlorine (residual)	Chlorine residual in wastewater discharged to inland surface waters will not exceed 0.1 mg/L.
Color	Waters will be free of coloration that causes nuisance or adversely affects beneficial uses.
Exotic vegetation	Exotic vegetation will not be introduced around stream courses to the extent that such growth causes nuisance or adversely affects beneficial uses.
Floatables	Waste discharges will not contain floating materials, including solids, liquids, foam, or scum, that cause a nuisance or adversely affect beneficial uses.
Fluoride	Surface waters designated as MUN will not exceed 2 mg/L as a result of controllable water quality factors, depending on air temperature.
Methylene blue activated substances	Waters designated as MUN will not exceed 0.05 mg/L as a result of controllable water quality factors.
Nitrogen (Nitrate, Nitrite)	Waters will not exceed 10 mg/L nitrogen as nitrate-nitrogen plus nitrite-nitrogen, 45 mg/L as nitrate, 10 mg/L as nitrate-nitrogen, or 1 mg/L as nitrite-nitrogen.
Oil and grease	Waters will not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or objects in the water, or that cause nuisance or otherwise adversely affect beneficial uses.

Table 3-1. Surface Water Quality Objectives

Constituent	Concentrations
Oxygen (dissolved)	At a minimum (see specifics below), the mean annual dissolved oxygen concentration of all waters will be greater than 7 mg/L, and no single determination will be less than 5 mg/L, except when natural conditions cause lesser concentrations. The dissolved oxygen content of all surface waters designated as WARM will not be depressed below 5 mg/L as a result of waste discharges.
Pesticides	No individual pesticide or combination of pesticides will be present in concentrations that adversely affect beneficial uses. There will be no increase in pesticide concentrations found in bottom sediments or aquatic life.
pH	The pH of inland surface waters will not be depressed below 6.5 or raised above 8.5 as a result of waste discharges. Ambient pH levels will not be changed more than 0.5 units from natural conditions as a result of waste discharge.
Polychlorinated biphenyls	The purposeful discharge of polychlorinated biphenyls (the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260) to waters of the region, or at locations where the waste can subsequently reach waters of the region, is prohibited. Pass-through or uncontrollable discharges to waters of the region, or at locations where the waste can subsequently reach water of the region, are limited to 70 picograms/liter (30-day average) for protection of human health and 14 nanograms/liter and 30 nanograms/liter (daily average) to protect aquatic life in inland fresh waters and estuarine waters, respectively.
Radioactivity	Radioactive materials will not be present in the waters of the region in concentrations that are deleterious to human, plant, or animal life. Waters designated MUN will meet the limits specified in the California Code of Regulations, Title 22.
Solids (suspended and settleable)	Waters will not contain suspended or settleable material in amounts that cause nuisance or adversely affect beneficial uses as a result of controllable water quality factors.
Sulfate	Sulfates will not exceed 350 mg/L.
Taste and odor	Waters will not contain taste or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible aquatic resources, cause nuisance, or adversely affect beneficial uses.
Temperature	The natural receiving water temperature of all regional waters will not be altered unless it can be demonstrated to the satisfaction of the regional board that such alteration in temperature does not adversely affect beneficial uses. For waters designated WARM, water temperature will not be altered by more than 5 degrees Fahrenheit above the natural temperature. At no time will these WARM-designated waters be raised above 80 degrees Fahrenheit as a result of waste discharges.
Total dissolved solids	Total dissolved solids will not exceed 1,500 mg/L.

Table 3-1. Surface Water Quality Objectives

Constituent	Concentrations
Toxic substances	Toxic substances will not be discharged at levels that will bioaccumulate in aquatic resources to levels that are harmful to human health. The concentrations of contaminants in waters that are existing or potential sources of drinking water will not occur at levels that are harmful to human health. Concentrations of toxic pollutants in the water column, sediments, or biota will not adversely affect beneficial uses.
Turbidity	Waters will be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases in natural turbidity attributable to controllable water quality factors will not exceed the following limits: where natural turbidity is between 0 and 50 nephelometric turbidity units, increases will not exceed 20 percent. Where natural turbidity is greater than 50 nephelometric turbidity unit, increases will not exceed 10 percent.

Source: Los Angeles RWQCB 2014; Caltrans 2018

Notes:
mg/L=milligrams per liter; ml=milliliter

Groundwater Hydrology

The Coastal Plain of Los Angeles (Central) Groundwater Basin (Basin No. 4-11.04 of the South Coast Hydrologic Region) is the major groundwater basin located in the project study area. The general quality of groundwater in the project study area has been degraded because of land use, as contaminants seep into the subsurface. Commercial and industrial activities include leaking aboveground and underground storage tanks containing various and large quantities of hazardous materials that are discharging these contaminants and presenting themselves as inorganic and organic pollutants. Inadequate storage, handling, and disposal practices also contribute to pollution. Pesticides and fertilizers also degrade groundwater quality. Overloaded or improperly treated septic tanks and illegal discharges are also sources of bacteria and pollutants.

Groundwater in the project study area is generally considered drinking-water quality for inorganic constituents but is likely to contain organic contaminants from solvent and petroleum hydrocarbon pollution associated with industrial activities in the area. In the coastal area of the plain, seawater intrusion diminishes the groundwater quality with high concentrations of chloride but is under control through an artificial recharge system consisting of spreading basins and injection wells.

Based on the *Link US Preliminary Geotechnical Report* (HDR 2016b), the groundwater levels within the project study area range between depths of approximately 14 and 48 feet below ground surface (bgs). Historical groundwater depths as shallow as 13.5 feet bgs have been reported (Law/Crandall, Inc. 1994; J Byer Group, Inc. 1998), but more recent measurements indicate a steady groundwater level decline. The groundwater quality within the project study area is not specifically known, but the groundwater may contain inorganic constituents, as well as organic contaminants from solvent and petroleum hydrocarbon pollution associated with industrial activities in the area (Caltrans 2005). Developers of underground facilities, as well as temporary excavations during construction, should anticipate encountering

groundwater if greater than approximately 20 feet bgs. The *Link US Phase I Environmental Site Assessment* (HDR 2016a) includes additional information regarding potential groundwater contamination.

Groundwater Quality Objectives/Standards and Beneficial Uses

The following beneficial uses are identified in the Basin Plan for the Coastal Plain of Los Angeles (Central) Groundwater basin.

- MUN – Municipal and Domestic Supply
- AGG – Agricultural Supply
- IND – Industrial Service Supply
- PROC – Industrial Process Supply

Groundwater recharge was the only beneficial use identified for groundwater (for US-101 within the project study area) on the Caltrans Water Quality Planning Tool website. This use is related to the Los Angeles River, between Figueroa Street and Los Angeles River Estuary (Willow Street), which includes Reaches 1 and 2.

The stipulated water quality objectives for groundwater as identified in the Basin Plan are listed in Table 3-2. The narrative water quality objectives for Los Angeles River (as related to US-101) identified only chlorine and polychlorinated biphenyl in the Caltrans Water Quality Planning Tool.

Table 3-2. Groundwater Quality Objectives

Constituent	Concentrations
Bacteria	In groundwaters used for domestic or MUN supply , the concentration of coliform organisms over any 7-day period will be less than 1.1/100 ml.
Boron	Boron will not exceed 1.0 mg/L.
Chemical constituents and radioactivity	Groundwaters designated for use as domestic or MUN supply will not contain concentrations of chemical constituents and radionuclides in excess of the limits specified in California Code of Regulations, Title 22. Groundwaters will not contain concentrations of chemical constituents in amounts that adversely affect any designated beneficial use.
Chloride	Chloride will not exceed 150 mg/L.
Nitrogen (Nitrate, Nitrite)	Groundwaters will not exceed 10 mg/L nitrogen as nitrate-nitrogen plus nitrite-nitrogen, 45 mg/L as nitrate, 10 mg/L as nitrate-nitrogen, or 1 mg/L as nitrite-nitrogen.
Sulfate	Sulfates will not exceed 250 mg/L.
Taste and odor	Groundwaters will not contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.
Total dissolved solids	Total dissolved solids will not exceed 700 mg/L.

Source: Los Angeles RWQCB 2014
Notes:
ml=milliliter; mg/L=milligrams/liter

Existing Water Quality

The surface water ambient monitoring program maintains water quality stations along the Los Angeles River. However, the most recent water quality data collection occurred June 29, 2005. Table 3-3 summarizes water quality measurements collected by the surface water ambient monitoring program at Site Numbers 412CE0104 and 412LAR007 for Los Angeles River (HU Code 18070105) for selected constituents.

Table 3-3. Los Angeles River Water Quality - 2005 Results

Analyte	Unit	Los Angeles Random Site 7 Station Code 412LAR007	Los Angeles River ~ 0.8 mile below Highway 110 Station Code
Specific conductivity, total	microsiemens/centimeter	1323	945
Oxygen, dissolved, total	mg/L	21.31	12.5
Temperature	Degrees Celsius	29.81	25.1
Velocity	feet/second	—	0
Salinity, total	parts per thousand	0.65	0.4
Turbidity, total	nephelometric turbidity unit	4.7	—
Oxygen, saturation, total	percentage	284.2	—
pH	none	9.7	—
Nitrite as N, dissolved	mg/L	1.42	—
OrthoPhosphate as P, dissolved	mg/L	0.343	—
Chloride, dissolved	mg/L	107	—
Hardness as CaCO3, total	mg/L	332	—
Ammonia as N, total	mg/L	0.059	—
Nitrogen, total Kjeldahl, total	mg/L	2.86	—
Phosphorus as P, total	mg/L	0.597	—
Nitrate as N, dissolved	mg/L	2.6	—
Chlorophyll a, particulate	micrograms/liter	63.7	—
Sulfate, dissolved	mg/L	226	—

Source: California Environmental Data Exchange Network 2018
Notes:
mg/L= milligrams per liter

Regional Water Quality

Pollutants from dense clusters of residential, industrial, and other urban activities in the Los Angeles Basin have impaired water quality in the immediate project vicinity. Added to this complex mixture of pollutant sources (in particular, pollutants associated with urban and stormwater runoff) is the high number (in the

thousands) of point source industrial, construction, and municipal permits issued north and south of the project (Los Angeles River Watershed, Watershed Management Initiative, December 2001).

Section 303(d) List of Impaired Waters

Within the Central Hydrologic Subarea Split of the Coastal Plain hydrologic areas of the Los Angeles-San Gabriel HU, the Los Angeles River is the receiving waterbody listed as an impaired waterbody on the 2014/2016 CWA Section 303(d) list (California SWRCB 2014) and the 2012 CWA Section 303(d) list (according to the Caltrans Water Quality Planning Tool [Caltrans 2018]). The reason for the difference in the POCs between the two lists is attributable to the difference of the list approval date. Once the Caltrans Water Quality Planning Tool is updated to reflect the 2014/2016 CWA Section 303(d) list, both POCs should match. A summary of the hydrologic information, 303(d) listed waterbodies and their associated POCs, TMDLs, and targeted design constituents are shown in Table 3-4.

Table 3-4. 2014/2016 and 2012 Clean Water Act Section 303(d) Listed Waterbodies and Pollutants of Concern

Jurisdiction	HU	Hydrologic Area	Hydrologic Subarea #	Waterbody	POC
Los Angeles RWQCB[1]	Los Angeles-San Gabriel	Coastal Plain	Central Hydrologic Subarea Split	Los Angeles River, Reach [2]	Ammonia[3], Indicator Bacteria[3], Copper[3], Nutrients (Algae)[3], Oil, Trash3
Los Angeles RWQCB (Caltrans)[2]	Los Angeles River[4]	Los Angeles[4]	412.10[4]	Los Angeles River, Reach [2]	Ammonia[3], Coliform Bacteria, Cooper[3], Lead[3], Nutrients (Algae)[3], Oil, Trash[3]

Notes:
[1] 2014/2016 Section 303(d) Approved List.
[2] Caltrans 2018
[3] Pollutants of concern with a U.S. EPA-approved TMDL.
4 Based on CalWater Watershed Data.

Caltrans=California Department of Transportation; HU= Hydrologic Unit; POC=pollutant of concern; RWQCB=Regional Water Quality Control Board; TMSL=total maximum daily load; U.S. EPA=United States Environmental Protection Agency

A targeted design constituent is a pollutant that has been identified during Caltrans runoff characterization studies to be discharging with a load or concentration that commonly exceeds allowable standards and is considered treatable by currently available Caltrans-approved treatment BMPs. It is a requirement of the Caltrans NPDES Permit to provide treatment of the Caltrans-identified targeted design constituents.

Areas of Special Biological Significance

Areas of special biological significance are a subset of state water quality protection areas and require special protection as determined by SWRCB pursuant to the California Ocean Plan. The project study area is not located within an area of special biological significance.

3.1.4 Geology/Soils

Geology

The project study area is located within the Los Angeles Basin near the boundary of the Transverse Ranges Province and the northern Peninsular Ranges Geomorphic Province. The mountain ranges include the Santa Monica and San Gabriel Mountains located to the northwest of the project study area and the Palos Verdes Hills toward the southwest. The Transverse Ranges are characterized by an east-to-west trending complex group of mountain ranges and valleys. The Transverse Ranges are comprised predominantly of sedimentary rocks, Mesozoic granitic rocks, and ancient Precambrian rocks of all types. The northern Peninsular Ranges are characterized by a series of northwest-to-southwest trending mountains and faults. These mountain ranges are composed of metamorphosed sedimentary and volcanic rocks of Jurassic age that have been intruded by mid-Cretaceous plutonic rocks of the Southern California batholith and rimmed by Cenozoic sedimentary rocks (Gastil and Krummenacher 1981; Schoellhamer et al. 1981; Metro 1981).

The project study area is located west of the Los Angeles River on a gently sloping alluvial surface. In general, the project study area is underlain by varying amounts of artificial fill and Holocene- and Pleistocene-age alluvium deposits consisting of silty sands, sands, and silts with varying amounts of gravel and cobbles. Beneath the alluvium layers, Miocene Puente marine sedimentary formations are encountered within the project study area.

Soils

Based on existing geotechnical data, geologic maps, reports, and other pertinent information, the project study area is underlain by varying amounts of artificial fill and younger alluvium deposits ranging from loose to medium dense materials such as silty sands/sandy silts, silt, and sands with varying amounts of gravel and cobbles. The artificial fill varies in composition but is generally known to contain construction debris, as well as imported natural earth materials. The compaction of this layer is uncertain, and, therefore, this layer of fill is categorized as "uncertified fill." In Los Angeles County, in general, uncertified fill may not be used to support loads from structures, and the removal and recompaction of this layer should be anticipated for construction.

The artificial fill layer varies from approximately 5 to 15 feet in thickness but may extend to depths as great as approximately 30 feet bgs in some locations. In Segment 2 of the project study area, the artificial fill ranges from approximately 20 to 30 feet bgs. The younger alluvium deposit thickness within the project limits ranges from approximately 40 to 70 feet; however, for the concourse area, young alluvium deposit thickness ranges from approximately 65 to 75 feet (HDR 2016a).

According to the *Link US Phase I Environmental Site Assessment* (HDR 2016a), the project study area is expected to have variable potential for contamination because of legacy site use and historical development. These uses have experienced releases of contaminants to soil and groundwater. Field results and desktop research indicate chemicals are present in the soil surface, as well as methane and volatile gases. It is assumed that the entire project study area is underlain with contaminated soils.

Soil Erosion Potential

Due to the paucity of unpaved soils within the immediate project area, the erosion potential under natural conditions is low. According to the National Resources Conservation Service soil survey, the soil erodibility factor within the project limits is approximately 0.32. The estimates are based primarily on a percentage of silt, sand, and organic matter; soil structure; and saturated hydraulic conductivity. The higher the value, the more susceptible the soil is to sheet and rill erosion by water.

3.1.5 Biological Communities

The Los Angeles area supports a variety of plant communities and wildlife species. Native vegetation includes grasslands, coastal sage scrub, chaparral, oak woodland, riparian, pinyon juniper, and timber conifer. The project study area, however, is highly developed with essentially no remaining native vegetation. There are no natural communities present within the project study area that would support native and sensitive plant and wildlife species. Non-native, ornamental, and weedy plant species are present in landscaped areas and vacant lots.

Aquatic Habitat

Reach 2 of the Los Angeles River (the portion adjacent to the project study area) includes concrete-lined supports with no functional aquatic habitat.

Special-Status Species

There are no special-status species present within the project study area.

Stream/Riparian Habitats

There are no stream or riparian habitats present within the project study area.

Wetlands

There are no jurisdictional wetlands within the project study area.

Fish Passage

There are no fish passages present within the project study area.

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4.0 Environmental Impacts

4.1 Introduction

This section discusses the potential environmental impacts related to water quality upon implementation of the proposed project or the build alternative and identifies mitigation measures that would avoid or reduce potential impacts during construction and throughout operation.

Based on the *Phase I Environmental Site Assessment*, the majority of the soil where physical disturbance would occur is contaminated and not suitable for infiltration (Tier 1). Therefore, unlined landscaping improvements, including irrigation, are not feasible for the project. Tier 2 (capture and use) and Tier 3 (bioretention) are viable approaches to meet LID requirements and are incorporated into the design of the proposed project, as summarized below.

- In Segment 1: Throat Segment, a structural stormwater vault would address the area north of Vignes Street; a capture and use BMP (cistern) would address the rest of this segment, including a portion of the concourse area (Segment 2: Concourse Segment). For the build alternative, modification of local city streets (Bolero Lane, Bloom Street, and Leroy Street) would occur, and the drainage pattern would remain the same as the existing condition. Implementation of the City of Los Angeles Green Street Standards would be applied at this location, similar to the BMPs proposed in Segment 3: Run-Through Segment.
- In Segment 2: Concourse Segment, capture and use BMP (cisterns) are proposed. The extent of BMPs in the concourse area would be refined in final design. For the build alternative with an at-grade passenger concourse, the cistern concept would remain the same as the proposed project.
- In Segment 3: Run-Through Segment, south of US-101, bioretention BMPs are proposed for the proposed project and the build alternative. Bioretention BMPs would be applied on reconstructed public streets south of US-101 (i.e., Commercial Street, Center Street, and Ducommun Street). City of Los Angeles Green Street Standard Plans may be used and modified with bioretention features and impermeable liners to convey the underdrains to a nearby storm drain system. This approach would require concurrence from the City of Los Angeles. A structural BMP (Contech Jellyfish Filter) would address the area south of Ducommun Street, where the tracks sit on the cellular concrete.

4.2 Potential Impacts on Water Quality

4.2.1 Anticipated Changes to the Physical/Chemical Characteristics of the Aquatic Environment

Substrate

California Department of Transportation

During construction, there would be minor contact with the substrate at the columns of the US-101 viaduct. Although exposure to the substrate to accommodate the column foundations is limited and not considered substantial, impacts could be significant if not properly managed. Mitigation Measure HWQ-2 (Section 5.0) is proposed to reduce this potential impact to a level less than significant.

During operation, the proposed project or the build alternative would not result in an increase of impervious surfaces within Caltrans ROW (no net new impervious area). The substrate would be subject to any infiltration that could impact the substrate. Therefore, the substrate would not experience any change. Impacts are considered less than significant.

Non-California Department of Transportation Right-of-Way

During construction, albeit minor, there would be contact with the substrate at various locations and depths. Impacts would be significant if not properly managed. The SWPPP would identify construction BMPs to be implemented to address this activity within the substrate. Mitigation Measure HWQ-2 (Section 5.0) is proposed to reduce this potential impact to a level less than significant.

During operation, the proposed project or the build alternative would result in an increase of impervious surfaces within non-Caltrans ROW. This increase in impervious surface has the added benefit of not exposing more substrate. Impacts are considered less than significant.

Currents, Circulation, or Drainage Patterns

California Department of Transportation

The proposed project or the build alternative are not located in a coastal area that would impact ocean currents or circulation. Implementation of the proposed project or the build alternative would not result in an increase in impervious surface within Caltrans ROW. Because the US-101 overhead viaduct is a non-Caltrans structure proposed within Caltrans ROW and would act as a roof to a small portion of the highway, the runoff generated from the non-Caltrans structure would offset the reduced runoff along the highway (impervious surface of the US-101 overhead viaduct is 0.46 acre). Therefore, the runoff associated with the US-101 overhead viaduct would not exceed the capacity of the tributary Caltrans system below (WKE 2016). The proposed project or the build alternative is designed to preserve existing drainage patterns and time of concentration to the extent practicable associated with the tributary US-101 storm drain system.

By preserving existing drainage system routing, changes to hydrology would be minimized, and impacts are considered less than significant.

Non-California Department of Transportation

The proposed project or the build alternative is not located in a coastal area that would impact currents or circulation. Implementation of the proposed project or the build alternative would increase impervious surfaces in the project study area by 3.5 acres. The total disturbed area during construction would be approximately 110.50 acres. A breakdown of these areas per jurisdiction is provided in the *Link US Preliminary Low Impact Development Report* (HDR 2019b). An overall increase in storm runoff is anticipated to result from increased impervious surface area, which would increase the volume of flow and capacity of some on-site drainage systems. This is considered a significant impact. Where net increases in runoff would occur, BMPs are proposed to attenuate the flow prior to entering the drainage conveyance system. For the proposed project or the build alternative, this would be addressed through the incorporation of cisterns into the design of proposed infrastructure to capture the volume so as not to overtax the existing storm drain systems. The cisterns would be designed to control peak flows to match existing conditions. If the build alternative were implemented, a similar BMP approach would be implemented. The proposed project or the build alternative would be designed to preserve existing drainage patterns and time of concentration to the extent practicable to minimize changes to existing drainage patterns for drainage courses that pass through the project site. By preserving existing drainage system routing, changes to hydrology would be minimized, and impacts are considered less than significant.

Suspended Particulates (Turbidity)

California Department of Transportation

Construction activities within Caltrans ROW would disturb only minor amounts of soil from the foundations of the US-101 overhead viaduct columns. Generation of suspended particles and sediment during construction is expected to be minor, although could be significant if not properly managed. Generation of suspended particles may be conveyed in runoff along the storm drain system and ultimately to the Los Angeles River in which the turbid runoff may impact river habitat or river maintenance thereof. During construction, the contractor would be required to comply with the requirements of the CGP (Mitigation Measure HWQ-2 in Section 5.0). Under this permit, an SWPPP would be required to be prepared and implemented throughout construction. The SWPPP would identify construction BMPs to be implemented to address suspended solids and turbidity. Construction BMPs would include, but not be limited to, erosion control and sediment control BMPs designed to minimize erosion and retain sediment on site. Mitigation Measure HWQ-2 (Section 5.0) is proposed to reduce this potential impact to a level less than significant. During operation, increase in sediment load is not expected along the US-101 and associated overhead viaduct because this impervious surfaces would not be subject to erosion. Only during a maintenance activity that disturbs the underlying soil would there be suspended particles and turbidity, but this is expected to be minor. Periodic maintenance of the proposed drain inlet(s) along the US-101 overhead viaduct would be required to ensure that turbid runoff does not discharge into the existing drainage system along US 101. Because Caltrans, Metro, and CHSRA have jurisdiction over the areas of

runoff from US-101, each agency would retain partial responsibility for treatment of the associated turbid runoff based on the quantity of flow. In the absence of an MOU between the three parties, water quality impacts could be significant. Mitigation Measure HWQ-1 (Section 5.0) is proposed to reduce this potential impact to a level less than significant.

Non-California Department of Transportation

Construction activities would disturb soil and increase the potential for soil erosion and suspended particles to be generated as a result of construction vehicles operating on a roadway and rail cars operating on the tracks. This is considered a significant impact.

During construction, the contractor would be required to comply with the requirements of the CGP for work outside Caltrans ROW (Mitigation Measure HWQ-2 in Section 5.0). Mitigation Measure HWQ-2 requires implementation of construction BMPs including, but not limited to, erosion control and sediment control BMPs designed to minimize erosion and retain sediment on site. Mitigation Measure HWQ-2 (Section 5.0) is proposed to reduce this potential impact to a level less than significant.

During operation, increased impervious surfaces associated with cellular concrete, impermeable liners for all soil-contaminated areas, platforms, and access roads increase the volume and velocity of runoff during a storm event, which transports pollutants to receiving waters and may lead to downstream erosion and increases in suspended particles and sediment. Maintenance activities may also generate suspended particles and sediment. An increase in suspended particles and sediment would directly increase the turbidity that could result in a significant impact. Mitigation Measures HWQ-6 and HWQ-7 (Section 5.0) are proposed to reduce this potential impact to a level less than significant.

Oil, Grease, and Chemical Pollutants

Heavy metals, pesticides, petroleum hydrocarbons (oil and grease), and organic compounds can be toxic to aquatic life. Some of these compounds can bioaccumulate over several years, resulting in health problems for the affected organism. POCs during construction include petroleum products and chemicals. Chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste may be released and transported via storm runoff into receiving waters. During operation, oil, grease, and toxic organic compounds are POCs. These pollutants can be generated from general maintenance activities, as well as rail cars operating on the facility.

California Department of Transportation

Construction activities within Caltrans ROW would require use of chemical liquid products, petroleum products (e.g., paints, solvents, and fuels) and generate concrete-related waste. Generation of oil, grease, and chemical pollutants during construction is expected to be minor, although impacts would be significant if not properly managed.

During construction, the contractor would be required to comply with the requirements of the CGP (Mitigation Measure HWQ-2 in Section 5.0). Mitigation Measure HWQ-2 requires implementation of

construction BMPs including, but not limited to, non-stormwater management and waste management BMPs designed to minimize oil, grease, and chemical pollutants on site. Mitigation Measure HWQ-2 (Section 5.0) is proposed to reduce this potential impact to a level less than significant.

During operation, minor amounts of oil and grease would originate from train cars during operation, which could discharge oil, grease, and other chemical pollutants into existing drainage systems. This is considered a significant impact. Post-construction BMPs (Mitigation Measure HWQ-5 in Section 5.0) are required to treat the runoff prior to discharge to the local storm drain system through capture and use, bioretention, and structural BMPs. Mitigation Measures HWQ-2, HWQ-3, HWQ-4, and HWQ-5 are proposed to reduce impacts to a level less than significant.

Non-California Department of Transportation

During construction, chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste may be released and transported via storm runoff into receiving waters. This is considered a significant impact. During construction, the contractor would be required to comply with the requirements of the CGP (Mitigation Measure HWQ-2 in Section 5.0). Under this permit, the contractor would be required to prepare an SWPPP and implement construction BMPs including, but not limited to, good housekeeping BMPs to prevent spills, leaks, and discharge of construction oil, grease, and chemical pollutants into receiving waters. Mitigation Measure HWQ-2 (Section 5.0) is proposed to reduce this potential impact to a level less than significant.

During operation, generation of oil, grease, and chemical pollutants in runoff during a storm event may result in the transport of pollutants to receiving waters and lead to a downstream impairment. Maintenance activities may also generate oil, grease, and chemical pollutants. This is considered a significant impact. The proposed project or the build alternative includes capture and use BMPs, bioretention BMPs, and structural BMPs that would provide permanent stormwater treatment. Mitigation Measure HWQ-7 (Section 5.0) is proposed to memorialize the post-construction BMPs in accordance with the City of Los Angeles *Planning and Land Development Handbook for Low Impact Development*. Similarly, Mitigation Measure HWQ-6 would require CHSRA to implement post-construction BMPs in accordance with the Phase II MS4 permit. Mitigation Measures HWQ-7 and HWQ-6 are proposed to reduce this potential impact to a level less than significant.

Also, during operation, the project would result in acquisition of parcels with current manufacturing and industrial processes permitted by the IGP. These processes include treating stormwater discharges that include pollutants. Upon implementation of the proposed project or the build alternative, significant impacts would occur if these processes are not continued because industrial stormwater may not be treated and could negatively impact the storm drain system. Mitigation Measure HWQ-8 (Section 5.0) is proposed to reduce potential impacts to a level less than significant.

Temperature, Oxygen Depletion, and Other Parameters

This section applies to both Caltrans and non-Caltrans ROW.

Temperature is not typically considered a POC during construction or operation of a rail facility. However, water detained on a construction site has the potential to reach ambient air temperature, which could cause an increase in surface water temperature if discharged during a storm event. Non-stormwater discharges, such as groundwater dewatering, could also change surface water temperatures. In addition, during operation, stormwater falling on or flowing over warm pavement can increase the temperature of runoff.

Nutrients are typically composed of phosphorus and/or nitrogen, and elevated levels of these nutrients in surface waters could cause algal blooms and excessive vegetative growth. As nutrients are absorbed, the vegetative growth decomposes, depleting oxygen in the process and reducing dissolved oxygen levels. Dissolved oxygen is critical for the support of aquatic life. The ammonium form of nitrogen commonly found in wastewater discharges converts to nitrite and nitrate in the presence of oxygen and further depletes the dissolved oxygen levels in water. Nutrients are not a POC during construction and are not expected because proposed landscaping as part of the project is expected to be minimal. Therefore, nutrients should not be expected during operations.

Trash and debris can interfere with aquatic life respiration and can be harmful or hazardous to aquatic animals that mistakenly ingest floating debris. During construction, trash and debris are potential pollutants from construction activities. During operation, trash and debris are POCs from maintenance activities and rail cars operating on the rail facility. This is considered a significant impact.

During construction, the contractor would be required comply with the requirements of the CGP (Mitigation Measure HWQ-2 in Section 5.0). Under this permit, the contractor would be required to prepare an SWPPP and implement construction BMPs including, but not limited to, good housekeeping BMPs to prevent spills, leaks, and discharge of construction debris and waste into receiving waters. The SWPPP and project specifications would also include provisions for keeping the project site clean of debris to the extent possible and keeping all food-related trash items enclosed in sealed containers with regular removal from the project site. Mitigation Measure HWQ-2 is proposed to reduce impacts to a level less than significant.

During operation, generation of trash and debris in runoff during a storm event may result in the transport of pollutants to receiving waters. The proposed project or the build alternative includes capture and use BMPs, bioretention BMPs, and structural BMPs that would capture trash as part of their treatment. Mitigation Measure HWQ-7 (Section 5.0) is proposed to memorialize the post-construction BMPs in accordance with the City of Los Angeles *Planning and Land Development Handbook for Low Impact Development*. Mitigation Measure HWQ-7 is proposed to reduce potential impacts to a level less than significant.

Flood Control Functions

This section applies to both Caltrans and non-Caltrans ROW.

As discussed above, a comprehensive drainage system upgrade would be implemented, including longitudinal drainage systems and a combination of inlets and/or grated line drains to intercept stormwater runoff that is ultimately conveyed to the Los Angeles River. As detailed in the *Preliminary Drainage Technical Memorandum* (HDR 2015) and *Expanded Preliminary Drainage Technical Memorandum* (HDR 2016c) prepared for the project, the capacity of the storm drain systems were analyzed to compare with the existing and proposed condition.

To minimize the impact on the existing drainage systems, cisterns were determined necessary at locations where the project stormwater runoff were anticipated to exceed the existing conveyance facility's capacity. In addition, new and, in some cases, larger diameter drainage systems would be necessary at various locations based on tributary flow rates and length of pipe needed to connect into an existing drainage system. Potential impacts on flood control facilities are considered less than significant.

Storm, Wave, and Erosion Buffers

This section applies to both Caltrans and non-Caltrans ROW.

Storm, wave, and erosion buffers do not apply because these types of coastal erosion features are not within the project study area. Therefore, no impact related to storm, wave, and erosion buffers would occur.

Erosion and Accretion Patterns

This section applies to both Caltrans and non-Caltrans ROW.

During construction, excavated soil would be exposed, and there would be increased potential for soil erosion compared with existing conditions. This is considered a significant impact. The contactor would be required to implement standard erosion control practices as part of the SWPPP to reduce potential impacts during construction. Mitigation Measure HWQ-2 (Section 5.0) is proposed to reduce impacts to a level less than significant.

During operation, increases in impervious area would decrease infiltration and cause an increase in the volume of runoff during a storm event, which can lead to changes in downstream erosion and accretion patterns. However, this would be minimized during operations by capturing the increased volume in cisterns and controlling the release of runoff at a predevelopment level. Mitigation Measure HWQ-7 is proposed to reduce potential impacts to a level less than significant.

Aquifer Recharge/Groundwater

This section applies to both Caltrans and non-Caltrans ROW.

During construction, it is assumed that groundwater dewatering may be required. These groundwater dewatering activities are considered temporary, and water would only be extracted from the upper aquifer,

which is not currently used for potable uses. If groundwater dewatering is not appropriately managed and disposed of (including discharge back to the groundwater), a significant impact on the groundwater quality could occur. Mitigation Measures HWQ-3 and HWQ-4 are proposed to reduce impacts to a level less than significant.

Operation of the project would not require groundwater extraction. Therefore, the project would not substantially deplete groundwater supplies or substantially interfere with groundwater recharge. Also, there are no groundwater recharge facilities in the project study area. Impacts would be less than significant.

Baseflow

This section applies to both Caltrans and non-Caltrans ROW.

Baseflow is streamflow that results from precipitation that infiltrates into the soil and eventually moves through the soil to the stream channel. Given that the project study area is already largely comprised of impervious surfaces, the proposed project or the build alternative would not substantially reduce the current level of baseflow that naturally occurs in the project study area. Therefore, no impacts related to baseflow would occur.

4.2.2 Anticipated Changes to the Biological Characteristics of the Aquatic Environment

Given the urbanized nature of the project study area, changes to the biological characteristics of the aquatic environment are not anticipated. Impacts associated with special aquatic sites, habitat for fish and other aquatic organisms, wildlife habitat, endangered or threatened species, and invasive species would be less than significant.

4.2.3 Anticipated Changes to the Human Use Characteristics of the Aquatic Environment

Existing and Potential Water Supplies/Water Conservation

Due to the presence of contaminated soils, the proposed project or the build alternative would be designed to avoid infiltration to the underlying groundwater table. Landscaping pockets are proposed as bioretention areas in limited areas. These limited areas would use irrigation water secondary to harvested water from capture and use BMPs. Landscaped areas would be vegetated with drought-tolerant plants that do not require consistent and substantial levels of irrigation. There are no other demands for harvested water. Therefore, impacts related to water supply/conservation would be less than significant.

Recreational or Commercial Fisheries

The receiving waters in the project study area are not used for commercial fishing. Implementation of the proposed project or build alternative would not impact commercial fishing. No impact related to recreational or commercial fisheries would occur.

Other Water-Related Recreation

The receiving waters in the project study area are not used for recreation. Implementation of the proposed project or build alternative would not impact other water-related recreation. No impact related to other water-related recreation would occur.

4.2.4 Short-Term Impacts during Construction

Physical/Chemical Characteristics of the Aquatic Environment

POCs during construction include sediments, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. During construction, excavated soil would be exposed, and there would be increased potential for soil erosion. In addition, excavated soils would be contaminated, and the contractor would be required to follow protocol consistent with the *Link US Phase I Environmental Site Assessment* (HDR 2016a) or forthcoming Phase II Environmental Site Assessment for disposition of the soils. In addition, chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste may be spilled or leaked and have the potential to be transported via stormwater runoff into receiving waters. Construction of the safety improvements at the Main Street at-grade public crossing may require some minor grading, excavation, and other site preparation activities. If not properly managed, sediments, petroleum products, and concrete-related waste may be spilled or leaked and have the potential to be transported via stormwater into the Los Angeles River.

Due to the depth to groundwater, groundwater dewatering is anticipated during project construction. Other non-stormwater dewatering discharges are not anticipated during construction.

Under the CGP, the contractor would be required to prepare an SWPPP and implement construction BMPs. Construction BMPs would include, but not be limited to, erosion and sediment control BMPs designed to minimize erosion and retain sediment on site and good housekeeping BMPs to prevent spills, leaks, and discharge of construction debris and waste into receiving waters.

The requirements of the CGP are based on the project risk level. The overall risk level is based on two factors: receiving water risk and sediment risk. Runoff from the project site would not discharge to a Section 303(d) listed waterbody impaired for sediment or discharge to a waterbody with designated beneficial uses of SPAWN, COLD, and MIGRATORY; therefore, the receiving water risk is low.

The project combined risk level is 1.

California Department of Transportation

During construction, the total disturbed area would be approximately 0.46 acre.

The construction risk level is 1.

The mitigation measures described in Section 5.0 are proposed to reduce short-term, project-related impacts during construction to a level less than significant.

Non-California Department of Transportation

During construction, the total disturbed area would be approximately 100.4 acres.

The construction risk level is 1.

The mitigation measures described in Section 5.0 are proposed to reduce short-term, project-related impacts during construction to a level less than significant.

Biological Characteristics of the Aquatic Environment

Because there are no biological characteristics of the aquatic environment, no short-term water quality impacts would occur.

Human Use Characteristics of the Aquatic Environment

Because there are no human use characteristics of the aquatic environment, no short-term water quality impacts would occur.

4.2.5 Long-Term Impacts during Operation and Maintenance

Physical/Chemical Characteristics of the Aquatic Environment

Primary POCs are pollutants that are expected or have potential to result in project runoff and which also have been identified as causing impairment of receiving waters on the most recent Section 303(d) list or have an established TMDL. POCs during project operation include suspended solids/sediments, nutrients, pesticides, heavy metals, oil and grease, toxic organic compounds, and trash and debris. These pollutants can be generated from maintenance activities, as well as from locomotives operating at LAUS.

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During operation, minor amounts of oil and grease would originate from train cars during operation, which could discharge oil, grease, and other chemical pollutants into the existing drainage system along US-101. Post-construction BMPs (Mitigation Measure HWQ-5 in Section 5.0) are required to reduce this potential impact to a level less than significant. Because Caltrans, Metro, and CHSRA have jurisdiction over the areas of runoff from the US-101, including the proposed viaduct structure, each agency is anticipated to retain partial responsibility for long-term maintenance of BMPs. Provisions for management of oil, grease, and chemical pollutants would apply to this MOU as addressed by Mitigation Measure HWQ-1. Similarly, provisions for management of oil, grease, and chemical pollutants would apply within the Caltrans ROW in the form of post-construction BMPs. Mitigation Measures HWQ-5 and HWQ-1 are proposed to reduce impacts to a level less than significant.

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As discussed above, the approach to addressing post-project water quality is to treat the runoff prior to discharge to the local storm drain system through capture and use, bioretention, and structural BMPs.

Implementation of the proposed project or build alternative would increase impervious surfaces by 3.5 acres (conservative estimate). Although this impervious surface area may be reduced depending on the outcome of incorporating a green roof in the concourse building, which would not be determined until final design, an overall increase in stormwater volume from the proposed project or build alternative is unavoidable.

With incorporation of proposed design features and mitigation measures identified in Section 5.0, long-term, project-related impacts during operations would be reduced to a level less than significant.

Biological Characteristics of the Aquatic Environment

As indicated above, upon implementation of the proposed mitigation measures outlined in Section 5.0, there would be no long-term water quality impacts on the biological characteristics of the aquatic environment.

Human Use Characteristics of the Aquatic Environment

Although the receiving waters in the vicinity of the project study area have designated beneficial uses, they are not anticipated to be impacted during project operations upon implementation of the mitigation measures described in Section 5.0. Therefore, no long-term water quality impacts on human use characteristics would occur.

4.3 Impact Assessment Methodology

This report does not analyze common and unique potential impacts for the proposed project and build alternative independent of one another, including construction (short-term impacts) and operation/maintenance (long-term impacts). This report includes an evaluation of the proposed infrastructure within Caltrans ROW and outside of Caltrans ROW, utilizing the area encompassing the maximum extent of physical disturbance associated with the proposed project and build alternative. This is a conservative impact assessment because it covers the largest area.

4.3.1 Cumulative Impacts

Cumulative development in the project study area is a continuation of the existing urban pattern of development that has already resulted in extensive modifications to watercourses in the area. The watercourses in the area have been channelized, and drainage systems have been put into place to respond to the urbanization and associated addition of impervious surface area that has occurred in this area. The projects being considered for cumulative impacts analysis related to hydrology and water quality include all planned development discharging to the Los Angeles-San Gabriel River HU. Because cumulative hydrology and water quality impacts are caused by build out of properties that increase impervious surface and pollutant loads, cumulative development is considered to be the build out of the Los Angeles-San Gabriel River HU over an extended period, resulting in development of all available parcels planned for development.

Each project must comply with NPDES permitting requirements and include BMPs to avoid impacts on water quality and local hydrology in compliance with local ordinances and plans adopted to comply with the MS4 Permit, LID Ordinances, and other applicable regulatory permits. Each project must consider impaired receiving waters and annual TMDL loads for receiving waters. The TMDL program is designed to identify all constituents that adversely impact the beneficial uses of waterbodies and subsequently identify appropriate reductions in pollutant loads or concentrations from all sources so the receiving waters can maintain/attain the beneficial uses in the Basin Plan. By complying with TMDLs, the project contribution to overall water quality improvement in the watershed in context of the regulatory program is designed to account for cumulative impacts.

The proposed project or build alternative would include BMPs that would reduce the pollutant concentrations associated with runoff from the proposed structures, platforms, and rail tracks. In addition, the proposed cisterns would capture increased discharge attributed to increased impervious surfaces so as not to overtax the existing local storm drain systems. The main reason for the increase in impervious surfaces is to prevent infiltration of runoff so that legacy hazardous contaminants in the underlying soil are not mobilized (HDR 2016a). Increasing the impervious surface has the benefits of protecting the groundwater basin by not facilitating infiltration, which would migrate legacy chemicals, and preventing further degradation of the groundwater resources.

Regional programs and BMPs, such as TMDL programs, the drainage area management plan/local implementation plan, and the MS4 permit program have been designed in anticipation of future urbanization within the region. The regional control measures contemplate cumulative impacts of proposed development. The proposed project or build alternative would be required to comply with applicable stormwater regulations. Compliance with these regional programs and the CGP constitutes compliance with programs intended to address cumulative water quality impacts. Therefore, the contribution to cumulative water quality impacts would not be considerable.

5.0 Mitigation Measures

The following mitigation measures are proposed to reduce or avoid impacts related to water quality:

HWQ-1 Long-Term MOU: An MOU shall be executed prior to completion of the final engineering design and before approval of the corresponding plans, specifications, and estimate phase of the project. The MOU shall clarify and addresses overlapping, multiagency MS4-related technical, financial, legal, and other responsibilities for the design, construction, and operational phases of the project. Agencies involved in the MOU shall include, but not be limited to, Caltrans, CHSRA, and Metro. The MOU shall address, but not be limited to, the stormwater runoff quality to be conveyed and accepted among the affected parties.

HWQ-2 Prepare and Implement an SWPPP: During construction, Caltrans, Metro, and CHSRA shall comply with the provisions of the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002), and any subsequent amendments (Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ), as they relate to project construction activities. Construction activities shall not commence until a waste discharger identification number is received from the Stormwater Multiple Application and Report Tracking System. The contractor shall implement all required aspects of the SWPPP during project construction. Caltrans, Metro, and CHSRA shall comply with the Risk Level 1 sampling and reporting requirements of the CGP. A rain event action plan shall be prepared and implemented by a qualified SWPPP developer within 48 hours prior to a rain event of 50 percent or greater probability of precipitation according to the National Oceanic and Atmospheric Administration. A Notice of Termination shall be submitted to SWRCB within 90 days of completion of construction and stabilization of the site.

HWQ-3 Comply with Local Dewatering Requirements: The contractor shall comply with the provisions of the General Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0095, NPDES Permit No. CAG994004), effective July 6, 2013 (known as the Dewatering Permit), as they relate to discharge of non-stormwater dewatering wastes. The two options to discharge shall be to the local storm drain system and/or to the sanitary sewer system, and the contractor shall obtain a permit from the RWQCB and/or the City of Los Angeles, respectively.

HWQ-4 Comply with Local Dewatering Requirements for Contaminated Sites: The contractor shall comply with the provisions of the General Waste Discharge Requirements for Discharges of Treated Groundwater from Investigation and/or Cleanup of Volatile Organic Compounds-Contaminated Sites to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0043, NPDES Permit No. CAG914001), effective April 7, 2013 (known as the Dewatering Permit for contaminated sites), for discharge of

non-stormwater dewatering wastes from contaminated sites affected during construction. The two options to discharge shall be to the local storm drain system and/or to the sanitary sewer system, and the contractor shall require a permit from the RWQCB and/or the City of Los Angeles, respectively.

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HWQ-5 Final Water Quality BMP Selection and Maintenance Agreement: Metro shall comply with the provisions of the Caltrans Statewide NPDES Permit (Order No. 2012-0011-DWQ, NPDES No. CAS000003), effective July 1, 2013 (known as the Caltrans MS4 permit). This post-construction requirement would only apply to the US-101 overhead viaduct improvements. Metro shall prepare a stormwater data report for the plans, specifications, and estimate phase that will address post-construction BMPs for the US-101 overhead viaduct in accordance with the Caltrans *Project Planning and Design Guide* (latest edition).

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HWQ-6 Final Water Quality BMP Selection and Maintenance Agreement: For the portion of the project outside Caltrans ROW that accommodates the planned HSR system, Metro shall comply with the NPDES General Permit for Waste Discharge Requirements for Stormwater Discharges from Small MS4 (Order No. 2013-0001-DWQ, NPDES No. CAS000004), effective July 1, 2013 (known as the Phase II permit). This post-construction requirement only applies to CHSRA facilities.

HWQ-7 Final Water Quality BMP Selection and Maintenance Agreement: Metro shall comply with the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles County, Except Those Discharges Originating from the City of Long Beach MS4 (Order No. 2012-0175, NPDES No. CAS004001), effective December 28, 2012 (known as the Phase I Permit). This post-construction requirement shall apply to the entire project except for those portions under the jurisdiction of the Caltrans MS4 Permit and CHSRA's Phase II Permit. Metro shall prepare a final LID report in accordance with the City of Los Angeles *Planning and Land Development Handbook for Low Impact Development* (LID Manual), May 9, 2016. This document shall identify the required BMPs to be in place prior to project operation and maintenance.

HWQ-8 Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses: Metro shall comply with the NPDES General Permit for Stormwater Discharges Associated with Industrial Activities (IGP; Order No. 2014-0057-DWQ, NPDES No. CAS000001) for demolished, relocated, or new industrial-related properties impacted by the project. This shall include preparation of industrial SWPPP(s), as applicable.

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