East San Fernando Valley Transit Corridor

Final Environmental Impact Statement/ Final Environmental Impact Report

Addendum to the

WATER RESOURCES TECHNICAL REPORT

December 2019

KOA CORPORATION
PLANNING & ENGINEERING

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Memorandum

Date: June 26, 2020

Subject: Addendum to the Water Resources Technical Report for East San Fernando Valley Transit Corridor

Project Description:

The Federal Transit Administration (FTA) and Los Angeles County Metropolitan Transportation Authority (Metro) have initiated a Final Environmental Impact Statement (FEIS)/Final Environmental Impact Report (FEIR) for the East San Fernando Valley Transit Corridor Project (Project). The FEIS/FEIR is being prepared with the FTA as the Lead Agency under the National Environmental Policy Act (NEPA) and Metro as the Lead Agency under the California Environmental Quality Act (CEQA).

In response to comments received on the Draft EIS/EIR (DEIS/DEIR), on June 28, 2018 the Metro Board of Directors formally identified a modified version of Alternative 4 (identified as “Alternative 4 Modified: At-Grade LRT” in the FEIS/FEIR) as the Locally Preferred Alternative (LPA). Factors that were considered by Metro in identifying Alternative 4 Modified: At-Grade LRT as the LPA include: the greater capacity of LRT compared to the BRT alternatives, the LPA could be constructed in less time and at reduced cost compared to the DEIS/DEIR Alternative 4, fewer construction impacts compared to DEIS/DEIR Alternative 4, and strong community support for a rail alternative. Additionally, Metro determined the LPA best fulfilled the project’s purpose and need.

The LPA consists of a 9.2-mile, at- grade LRT with 14 stations. Under the LPA, the LRT would be powered by electrified overhead lines and would travel 2.5 miles along the Metro-owned right-of-way used by the Antelope Valley Metrolink line and Union Pacific Railroad from the Sylmar/San Fernando Metrolink Station south to Van Nuys Boulevard. As the LPA approaches Van Nuys Boulevard it would transition to and operate in the median of Van Nuys Boulevard for approximately 6.7 miles south to the Van Nuys Metro Orange Line Station. The 9.2-mile route of the LPA is illustrated in Figure 2-1 of the FEIS/FEIR. Additional details regarding the LPA’s characteristics, components, and facilities are discussed within Section 2.2 of the FEIS/FEIR.

Methodology:

A review of the above-referenced project has been conducted in order to identify any additional potential impacts to safety and security in the project study area as a result of the LPA. The project review was done according to CEQA/NEPA guidelines, as well as the most current FTA and Metro guidelines and policies.

Result:

ICF has evaluated the impacts of the LPA and has determined they are consistent with the findings in the Water Resources Technical Report prepared for the DEIS/DEIR. Please refer to Section 4.13 Water Resources/Hydrology and Water Quality of the FEIS/FEIR for an updated discussion of existing conditions and LPA impacts, as well as proposed mitigation measures. Please also see section 4.13.3.3, for the NEPA and CEQA impact findings.

Water Resources Technical Report

for the East San Fernando Valley Transit Corridor

August 2015

Prepared by the
U.S. Department of Transportation
Federal Transit Administration

and the Los Angeles County
Metropolitan Transportation Agency

Metro®

Contents

Page

Tables and Figures

Acronyms and Abbreviations

AA	Alternatives Analysis
ADP	Area Drainage Plan
Basin Plan	Water Quality Control Plan for the Los Angeles Region
BAT	best available technology
BCT	best conventional pollutant control technology
BMPs	best management practices
BOD	biological oxygen demand
BRT	bus rapid transit
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CPA	Community Plan Area
CTR	California Toxics Rule
CWA	Clean Water Act
DEIR	Draft Environmental Impact Report
DEIS	Draft Environmental Impact Statement
DOT	U.S. Department of Transportation
EC	electrical conductivity
EPA	U.S. Environmental Protection Agency
ESAs	Environmentally Sensitive Areas
FEMA	Federal Emergency Management Agency
FIRMs	Flood Insurance Rate Maps
FTA	Federal Transit Administration
I	Interstate
LACDPW	Los Angeles County Department of Public Works
LACFCD	Los Angeles County Flood Control District
LADWP	Los Angeles Department of Water and Power
LID	low-impact development
LRT	light rail transit
LRTP	Long-Range Transportation Plan
MBAS	methylene blue active substances
MDP	Master Drainage Plan
MEP	maximum extent practicable
Metro	Los Angeles County Metropolitan Transportation Authority
MS4	municipal separate storm sewer systems

MSF	maintenance and storage facility
MWD	Metropolitan Water District
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NTR	National Toxics Rule
OCS	overhead contact system
PCE	Perchloroethylene
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
SCAG	Southern California Association of Governments
SFHA	Special Flood Hazard Area
SR	State Route
SUSMP	Standard Urban Stormwater Mitigation Plan
SWP	State Water Project
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TCE	Trichloroethylene
TDS	total dissolved solids
TMDL	total maximum daily load
TPSS	traction power substations
TSM	Transportation System Management
U.S.C.	United States Code
ULARA	Upper Los Angeles River Area
USACE	U.S. Army Corps of Engineers
VOCs	volatile organic compounds
WDRs	waste discharge requirements

Chapter 1
Introduction

1.1 Study Background

What Is the East San Fernando Valley Transit Corridor?

The Federal Transit Administration (FTA) and Los Angeles County Metropolitan Transportation Authority (Metro) have initiated a Draft Environmental Impact Statement (DEIS)/Environmental Impact Report (DEIR) for the East San Fernando Valley Transit Corridor Project. The DEIS/DEIR is being prepared with the FTA as the Lead Agency under the National Environmental Policy Act (NEPA) and Metro as the Lead Agency under the California Environmental Quality Act (CEQA).

The DEIS/DEIR and related engineering are being undertaken by Metro, in close coordination with the Cities of Los Angeles and San Fernando. The DEIS/DEIR will be a combined document complying with the most recent state and federal environmental laws. The project's public/community outreach component is being undertaken as an integrated parallel effort to the DEIS/DEIR.

Prior to the initiation of the DEIS/DEIR, an Alternatives Analysis (AA) was received by the Metro Board in January 2013 to study the East San Fernando Valley Transit Corridor in order to define, screen, and recommend alternatives for future study.

This study enabled Metro, the City of Los Angeles, and the City of San Fernando to evaluate a range of new public transit service alternatives that can accommodate future population growth and transit demand, while being compatible with existing land uses and future development opportunities. The study considered the Sepulveda Pass Corridor, which is another Measure R project, and the proposed California High Speed Rail Project. Both of these projects may be directly served by a future transit project in the project study area. The Sepulveda Pass Corridor could eventually link the West Los Angeles area to the eastern San Fernando Valley and the California High Speed Rail Project via the project corridor. As part of the January 2013 Alternatives Analysis, most of Sepulveda Boulevard was eliminated as an alignment option, as well as the alignment extending to Lakeveiw Terrace. As a result of the Alternatives Analysis, modal recommendations were for Bus Rapid Transit (BRT) and Light Rail Transit (LRT).

As a result of the alternatives screening process and feedback received during the public scoping period, a curb-running BRT, median-running BRT, median-running low-floor LRT/tram, and a median-running LRT were identified as the four build alternatives, along with the Transportation Systems Management (TSM) and No-Build Alternatives, to be carried forward for analysis in this DEIS/DEIR.

1.1.1 Study Area

Where Is the Study Area Located?

The East San Fernando Valley Transit Corridor Project study area is located in the San Fernando Valley in Los Angeles County. Generally, the project study area extends from the City of San Fernando and the Sylmar/San Fernando Metrolink Station in the north to the Van Nuys Metro Orange Line Station within the City of Los Angeles in the south. However, the project study area used for the environmental issue described in this report could vary from this general project study area, depending on the needs of the analysis. For the purposes of the analysis contained in this report, the project study area coincides with the general project study area.

The eastern San Fernando Valley includes the two major north-south arterial roadways of Sepulveda and Van Nuys Boulevards, spanning approximately 10 to 12 miles and the major north/west arterial roadway of San Fernando Road.

Several freeways traverse or border the eastern San Fernando Valley. These include the Ventura Freeway (U.S. 101), the San Diego Freeway (Interstate [I] 405), the Golden State Freeway (I-5), the Ronald Reagan Freeway (State Route [SR] 118), and the Foothill Freeway (I-210). The Hollywood Freeway (SR-170) is located east of the project study area. In addition to Metro Local and Metro Rapid bus service, the Metro Orange Line (Orange Line) BRT service, the Metrolink Ventura Line commuter rail service, Amtrak inter-city rail service, and the Metrolink Antelope Valley Line commuter rail service are the major transit corridors that provide interregional trips in the project study area.

Land uses in the project study area include neighborhood and regional commercial land uses, as well as government and residential land uses. Specifically, land uses in the project study area include government services at the Van Nuys Civic Center, retail shopping along the project corridor, and medium- to high-density residential uses throughout the project study area. Notable land uses in the eastern San Fernando Valley include: The Village at Sherman Oaks, Panorama Mall, Whiteman Airport, Van Nuys Airport, Mission Community Hospital, Kaiser Permanente Hospital, Van Nuys Auto Row, and several schools, youth centers, and recreational centers.

1.1.2 Alternatives Considered

What Alternatives Are under Consideration?

The following six alternatives, including four build alternatives, a TSM Alternative, and the No-Build Alternative, are being evaluated as part of this study:

- No-Build Alternative;
- TSM Alternative;
- Build Alternative 1 – Curb-Running BRT Alternative;
- Build Alternative 2 – Median-Running BRT Alternative;
- Build Alternative 3 – Low-Floor LRT/Tram Alternative; and
- Build Alternative 4 –LRT Alternative.

All build alternatives would operate over 9.2 miles, either in a dedicated bus lane or guideway (6.7 miles) and/or in mixed-flow traffic lanes (2.5 miles), from the Sylmar/San Fernando Metrolink station to the north to the Van Nuys Metro Orange Line station to the south, with the exception of Build Alternative 4 which includes a 2.5-mile segment within Metro-owned railroad right-of-way adjacent to San Fernando Road and Truman Street and a 2.5-mile underground segment beneath portions of Panorama City and Van Nuys.

1.1.2.1 No-Build Alternative

The No-Build Alternative represents projected conditions in 2040 without implementation of the project. No new transportation infrastructure would be built within the project study area, aside from projects that are currently under construction or funded for construction and operation by 2040.

These projects include highway and transit projects funded by Measure R and specified in the current constrained element of the Metro 2009 Long-Range Transportation Plan (LRTP) and the 2012 Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Existing infrastructure and future planned and funded projects assumed under the No-Build Alternative include:

- Existing Freeways – I-5, I-105, SR-118, and U.S. 101;
- Existing Transitway – Metro Orange Line;
- Existing Bus Service – Metro Rapid and Metro Local Shuttle;
- Los Angeles Department of Transportation Commuter Express, and DASH;
- Existing and Planned Bicycle Projects – Bicycle facilities on Van Nuys Boulevard and connecting east/west facilities; and
- Other Planned Projects – Various freeway and arterial roadway upgrades, expansions to the Metro Rapid bus system, upgrades to the Metrolink system, and the proposed California High Speed Rail project.

This alternative establishes a baseline for comparison to other alternatives in terms of potential environmental effects, including adverse and beneficial environmental effects.

1.1.2.2 TSM Alternative

The TSM Alternative enhances the No-Build Alternative and emphasizes transportation systems upgrades, which may include relatively low-cost transit service improvements. It represents efficient and feasible improvements to transit service, such as increased bus frequencies and minor modifications to the roadway network. Additional TSM Alternative transit improvements that may be considered include, but are not limited to, traffic signalization improvements, bus stop amenities/improvements, and bus schedule restructuring (Figure 1-1).

The TSM Alternative considers the existing bus network, enhanced operating hours, and increased bus frequencies for Metro Rapid Line 761 and Metro Local Line 233. Under this alternative, Metro Rapid Line 761 and Metro Local Line 233 bus routes would retain existing stop locations. This alternative would add 20 additional buses to Metro Local Line 233 and Metro Rapid Line 761 bus routes. These buses would be similar to existing Metro 60-foot articulated buses, and each bus would have the capacity to serve up to 75 passengers (57 seats x 1.30 passenger loading standard). Buses would be equipped with transit signal priority equipment to allow for improved operations and on-time performance.

The existing Metro Division 15 maintenance and storage facility (MSF) located in Sun Valley would be able to accommodate the 20 additional buses with the implementation of the TSM Alternative. Operational changes would include reduced headway (elapsed time between buses) times for Metro Rapid Line 761 and Metro Local Line 233, as follows:

Figure 1-1: TSM Alternative

Source: STV, 2014.

- Metro Rapid Line 761 would operate with headways reduced from 10 minutes to 8 minutes during peak hours (7 a.m. to 9 a.m. and 4 p.m. to 7 p.m. on weekdays) and from 17.5 minutes to 12 minutes during off-peak hours.
- Metro Local Line 233 would operate with headways reduced from 12 minutes to 8 minutes during peak hours and from 20 minutes to 16 minutes during off-peak hours.

1.1.2.3 Build Alternative 1 – Curb-Running BRT Alternative

Under the Curb-Running BRT Alternative, the BRT alignment would incorporate 6.7 miles of existing curb lanes (i.e., lanes closest to the curb) along Van Nuys Boulevard between San Fernando Road and the Metro Orange Line. This alternative would be similar to the Metro Wilshire BRT project and would operate similarly. The lanes would be dedicated curb-running bus lanes for Metro Rapid Line 761 and Metro Local Line 233, and for other transit lines that operate on short segments of Van Nuys Boulevard. In addition, this alternative would incorporate 2.5 miles of mixed-flow lanes, where buses would operate in the curb lane along San Fernando Road and Truman Street between Van Nuys Boulevard and Hubbard Avenue for Metro Line 761. Metro Line 233 would continue north on Van Nuys Boulevard to Lakeview Terrace. These improvements would result in an improved Metro Rapid Line 761 (hereafter referred to as 761X) and an improved Metro Local Line 233 (hereafter referred to as 233X). The route of the Curb-Running BRT Alternative is illustrated in Figure 1-2.

From the Sylmar/San Fernando Metrolink station:

- Metro Rapid Line 761X would operate within roadway travel lanes on Truman Street and San Fernando Road.
- At Van Nuys Boulevard, Metro Rapid Line 761X would turn southwest and travel south within a curb-running dedicated bus lane along Van Nuys Boulevard.
- The alternative would continue to be curb running along Van Nuys Boulevard until reaching the Metro Orange Line Van Nuys station where Metro Rapid Line 761X service would be integrated into mixed-flow traffic.
- Metro Line 761X would then continue south to Westwood as under existing conditions, though it should be noted that in December 2014 the Metro Rapid Line 761 will be re-routed to travel from Van Nuys Boulevard to Ventura Boulevard, and then to Reseda Boulevard, while a new Metro Rapid Line 788 would travel from Van Nuys Boulevard through the Sepulveda Pass to Westwood as part of a Metro demonstration project.

Metro Local Line 233X would operate similar to how it currently operates between the intersections of Van Nuys and Glenoaks Boulevards to the north and Van Nuys and Ventura Boulevards to the south. However, Metro Local Line 233X would operate with improvements over existing service because it would utilize the BRT lanes where its route overlaps with the BRT alignment along Van Nuys Boulevard.

Transit service would not be confined to only the dedicated curb lanes. Buses would still have the option to operate within the remaining mixed-flow lanes to bypass right-turning vehicles, a bicyclist, or another bus at a bus stop.

The Curb-Running BRT Alternative would operate in dedicated bus lanes, sharing the lanes with bicycles and right turning vehicles. However, on San Fernando Road and Truman Street, no dedicated bus lanes would be provided. The Curb-Running BRT Alternative would include 18 bus stops.

Figure 1-2: Build Alternative 1 – Curb-Running BRT Alternative

Source: KOA and ICF International, 2014.

1.1.2.4 Build Alternative 2 – Median-Running BRT Alternative

The Median-Running BRT Alternative consists of approximately 6.7 miles of dedicated median-running bus lanes between San Fernando Road and the Metro Orange Line, and would have operational standards similar to the Metro Orange Line. The remaining 2.5 miles would operate in mixed-flow traffic between the Sylmar/San Fernando Metrolink Station and San Fernando Road/Van Nuys Boulevard. The Median-Running BRT Alternative is illustrated in Figure 1-3.

Similar to the Curb-Running BRT Alternative, the Median-Running BRT (Metro Rapid Line 761X) would operate as follows from the Sylmar/San Fernando Metrolink station:

- Metro Rapid Line 761X would operate within mixed-flow lanes on Truman Street and San Fernando Road.
- At Van Nuys Boulevard, the route would turn southwest and travel south within the median of Van Nuys Boulevard in a new dedicated guideway.
- Upon reaching the Van Nuys Metro Orange Line Station, the dedicated guideway would end and the Metro Rapid Line 761X service would then be integrated into mixed-flow traffic.
- The route would then continue south to Westwood, similar to the existing route. Similar to Build Alternative 1, it should be noted that in December 2014 the Metro Rapid Line 761 will be re-routed to travel from Van Nuys Boulevard to Ventura Boulevard, and then to Reseda Boulevard, while a new Metro Rapid Line 788 would travel from Van Nuys Boulevard through the Sepulveda Pass to Westwood as part of a Metro demonstration project.

Metro Local Line 233 would operate similar to existing conditions between the intersections of Van Nuys and Glenoaks Boulevards to the north and Van Nuys and Ventura Boulevards to the south. Metro Rapid bus stops that currently serve the 794 and 734 lines on the northern part of the alignment along Truman Street and San Fernando Road would be upgraded and have design enhancements that would be Americans with Disabilities Act (ADA) compliant. These stops would also serve the redirected 761X line:

1. Sylmar/San Fernando Metrolink Station
2. Hubbard Station
3. Maclay Station
4. Paxton Station
5. Van Nuys/San Fernando Station

Along the Van Nuys Boulevard segment, bus stop platforms would be constructed in the median. Seventeen new median bus stops would be included.

Figure 1-3: Build Alternative 2 – Median-Running BRT Alternative

Source: KOA and ICF International, 2014.

1.1.2.5 Build Alternative 3 – Low-Floor LRT/Tram Alternative

The Low-Floor LRT/Tram Alternative would operate along a 9.2-mile route from the Sylmar/San Fernando Metrolink station to the north, to the Van Nuys Metro Orange Line station to the south. The Low-Floor LRT/Tram Alternative would operate in a median dedicated guideway for approximately 6.7 miles along Van Nuys Boulevard between San Fernando Road and the Van Nuys Metro Orange Line station. The low-floor LRT/tram alternative would operate in mixed-flow traffic lanes on San Fernando Road between the intersection of San Fernando Road/Van Nuys Boulevard and just north of Wolfskill Street. Between Wolfskill Street and the Sylmar/San Fernando Metrolink station, the low-floor LRT/tram would operate in a median dedicated guideway. It would include 28 stations. The route of the Low-Floor LRT/Tram Alternative is illustrated in Figure 1-4.

The Low-Floor LRT/Tram Alternative would operate along the following route:

- From the Sylmar/San Fernando Metrolink station, the low-floor LRT/tram would operate within a median dedicated guideway on San Fernando Road;
- At Wolfskill Street, the low-floor LRT/tram would operate within mixed-flow travel lanes on San Fernando Road to Van Nuys Boulevard;
- At Van Nuys Boulevard, the low-floor LRT/tram would turn southwest and travel south within the median of Van Nuys Boulevard in a new dedicated guideway; and
- The low-floor LRT/tram would continue to operate in the median along Van Nuys Boulevard until reaching its terminus at the Van Nuys Metro Orange Line Station.

Based on Metro's Operations Plan for the East San Fernando Valley Transit Corridor Project, the Low-Floor LRT/Tram Alternative would assume a similar travel speed as the Median-Running BRT Alternative, with speed improvements of 18 percent during peak hours/peak direction and 15 percent during off-peak hours.

The Low-Floor LRT/Tram Alternative would operate using low-floor articulated vehicles that would be electrically powered by overhead wires. This alternative would include supporting facilities, such as an overhead contact system (OCS), traction power substations (TPSS), signaling, and a maintenance and storage facility (MSF).

Because the Low-Floor LRT/Tram Alternative would fulfill the current functions of the existing Metro Rapid Line 761 and Metro Local Line 233, these bus routes would be modified to maintain service only to areas outside of the project corridor. Thus, Metro Rapid Line 761 (referred to as 761S with reduced service) would operate only between the Metro Orange Line and Westwood, and Metro Local Line 233 (referred to as 233S with reduced service) would operate only between San Fernando Road and Glenoaks Boulevard. It should be noted that in December 2014 the Metro Rapid Line 761 will be re-routed to travel from Van Nuys Boulevard to Ventura Boulevard, and then to Reseda Boulevard, while a new Metro Rapid Line 788 would travel from Van Nuys Boulevard through the Sepulveda Pass to Westwood as part of a Metro demonstration project.

Stations for the Low-Floor LRT/Tram Alternative would be constructed at various intervals along the entire route. There are portions of the route where stations are closer together and other portions where they are located further apart. Twenty-eight stations are proposed with the Low-Floor LRT/Tram Alternative. The 28 proposed low-floor LRT/tram stations would be ADA compliant.

Figure 1-4: Build Alternative 3 – Low-Floor LRT/Tram Alternative

Source: KOA and ICF International, 2014.

1.1.2.6 Build Alternative 4 – LRT Alternative

Similar to the Low-Floor LRT/Tram Alternative, the LRT would be powered by overhead electrical wires (Figure 1-5). Under Build Alternative 4, the LRT would travel in a dedicated guideway from the Sylmar/San Fernando Metrolink station along San Fernando Road south to Van Nuys Boulevard, from San Fernando Road to the Van Nuys Metro Orange Line Station, over a distance of approximately 9.2 miles. The LRT Alternative includes a segment in exclusive right-of-way through the Antelope Valley Metrolink railroad corridor, a segment with semi-exclusive right-of-way in the middle of Van Nuys Boulevard, and an underground segment beneath Van Nuys Boulevard from just north of Parthenia Street to Hart Street.

The LRT Alternative would be similar to other street-running LRT lines that currently operate in the Los Angeles area, such as the Metro Blue Line, Metro Gold Line, and Metro Exposition Line. The LRT would travel along the median for most of the route, with a subway of approximately 2.5 miles in length between Vanowen Street and Nordhoff Street. On the surface-running segment, the LRT Alternative would operate at prevailing traffic speeds and would be controlled by standard traffic signals.

Stations would be constructed at approximately 1-mile intervals along the entire route. There would be 14 stations, three of which would be underground near Sherman Way, the Van Nuys Metrolink station, and Roscoe Boulevard. Entry to the three underground stations would be provided from an entry plaza and portal. The entry portals would provide access to stairs, escalators, and elevators leading to an underground LRT station mezzanine level, which, in turn, would be connected via additional stairs, escalators, and elevators to the underground LRT station platforms

Similar to the Low-Floor LRT/Tram Alternative, the LRT Alternative would require a number of additional elements to support vehicle operations, including an OCS, TPSS, communications and signaling buildings, and an MSF.

Figure 1-5: Build Alternative 4 – LRT Alternative

Metro

Source: KOA and ICF International, 2014.

Chapter 2
Regulatory Framework/Methodology

2.1 Regulatory Framework

2.1.1 Federal Regulations

2.1.1.1 Clean Water Act

The federal Clean Water Act (CWA) of 1977 (33 U.S. Code Section 1251 et seq.), which amended the Federal Water Pollution Control Act of 1972, established the basic structure for regulating discharges of pollutants into the waters of the United States (not including groundwater). The CWA delegates authority to the U.S. Environmental Protection Agency (EPA) to implement pollution control programs. Under the CWA, it is unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a National Pollutant Discharge Elimination System (NPDES) permit is obtained and implemented within compliance. In addition, the CWA requires the states to adopt water quality standards for receiving water bodies and to have those standards approved by EPA. Water quality standards consist of designated beneficial uses for a particular receiving water body (e.g., wildlife habitat, agricultural supply, fishing), along with water quality criteria necessary to support those uses.

Section 303: Impaired Water Bodies (303(d) List) and Total Maximum Daily Loads

Under Section 303(d) of the CWA, the State Water Resources Control Board (SWRCB) is required to develop a list of impaired water bodies that do not meet water quality standards (promulgated under the National Toxics Rule [NTR] or the California Toxics Rule [CTR]) after the minimum technology-based effluent limitations have been implemented for point sources. Lists are to be priority ranked for development of a total maximum daily load (TMDL). A TMDL is a calculation of the total maximum amount of a pollutant that a water body can receive on a daily basis and still safely meet water quality standards. The California Regional Water Quality Control Boards (RWQCBs) and EPA are responsible for establishing TMDL waste-load allocations and incorporating improved load allocations into water quality control plans, NPDES permits, and waste discharge requirements, described further below under Section 2.1.2, *State Regulations*. Section 305(b) of the CWA requires that states assess the status of water quality conditions within the state in a report to be submitted every 2 years.

Section 402: National Pollutant Discharge Elimination System Permits

Section 402(p) of the CWA was amended in 1987 to require EPA to establish regulations for permitting of municipal and industrial (including active construction sites) stormwater discharges under the NPDES permit program. EPA published final regulations for industrial and municipal stormwater discharges on November 16, 1990. The NPDES program requires all industrial facilities and municipalities of a certain size that discharge pollutants into waters of the United States to obtain a permit. Stormwater discharges in California are commonly regulated through general and individual NPDES permits, which are adopted by the SWRCB or RWQCBs and are administered by the RWQCBs. Water quality criteria in NPDES permits for discharges to receiving waters are based on criteria specified in the NTR, the CTR, and Water Quality Control Plans (Basin Plans), discussed below under Section 2.1.2, *State Regulations*. EPA requires NPDES permits to be revised to incorporate waste-load allocations for TMDLs when the TMDLs are approved (40 Code of Federal Regulations [CFR] 122).

Because construction activities associated with the project would result in the disturbance of more than 1 acre, compliance with the statewide NPDES stormwater general permit for construction activity would be required.

2.1.1.2 Executive Order 11988

Executive Order 11988 (Floodplain Management) links the need to protect lives and property with the need to restore and preserve natural and beneficial floodplain values. Specifically, Federal agencies are directed to avoid conducting, allowing, or supporting actions on the base floodplain unless the agency finds that the base floodplain is the only practicable alternative location. Similarly, U.S. Department of Transportation (DOT) Order 5650.2, which implements Executive Order 11988 (Floodplain Management) and was issued pursuant to the National Environmental Policy Act of 1969, the National Flood Insurance Act of 1968, and the Flood Disaster Protection Act of 1973, prescribes policies and procedures for ensuring that proper consideration is given to the avoidance and mitigation of adverse floodplain impacts in agency actions, planning programs, and budget requests.

2.1.1.3 Floodplain Development

Federal Emergency Management Agency (FEMA) is responsible for determining flood elevations and floodplain boundaries based on U.S. Army Corps of Engineers (USACE) studies and approved agency studies. FEMA is also responsible for distributing the Flood Insurance Rate Maps (FIRMs), which are used in the National Flood Insurance Program (NFIP). These maps identify the locations of Special Flood Hazard Areas (SFHAs), including the 100-year flood zone.

FEMA allows nonresidential development in SFHAs; however, construction activities are restricted, depending on the potential for flooding within each area. Federal regulations governing development in a SFHA are set forth in Title 44, Part 60 of the CFR, which enables FEMA to require municipalities that participate in the National Flood Insurance Program (NFIP) to adopt certain flood hazard reduction standards for construction and development in 100-year floodplains. In addition, the Flood Disaster Protection Act of 1973 and the National Flood Insurance Reform Act of 1994 mandate the purchase of flood insurance as a condition of Federal or Federally related financial assistance for acquisition and/or construction of buildings in SFHAs of any community.

2.1.1.4 Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act (33 United States Code [U.S.C.] 401 et seq.), administered by USACE, requires permits in navigable waters of the U.S. for all structures such as riprap, dredging, and other activities. Navigable waters are defined as those subject to the ebb and flow of the tide and susceptible to use in their natural condition or by reasonable improvements as means of interstate transport or foreign commerce. USACE grants or denies permits based on the effects of navigation. Most activities covered under this act are also covered under Section 404 of the CWA.

2.1.1.5 Flood Disaster Protection Act

The purpose of the Flood Disaster Protection Act (42 U.S.C. 4001–4128; DOT Order 5650.2, 23 C.F.R. 650 Subpart A; and 23 C.F.R. 771) is to identify flood-prone areas and provide insurance. The act requires purchase of insurance for buildings in special flood-hazard areas. The act is applicable to any federally assisted acquisition or construction project in an area identified as having special flood hazards. Projects should avoid construction in, or develop a design to be consistent with, FEMA-identified flood-hazard areas.

2.1.2 State Regulations

Responsibility for the protection of water quality in California rests with the SWRCB and nine RWQCBs. The SWRCB establishes statewide policies and regulations for the implementation of water quality control programs mandated by federal and state water quality statutes and regulations. The RWQCBs develop and implement Water Quality Control Plans (Basin Plans) that consider regional beneficial uses, water quality characteristics, and water quality problems. The RWQCBs implement a number of federal and state laws, the most important of which are the state Porter-Cologne Water Quality Control Act and the Federal CWA. All projects resulting in discharges, whether to land or water, are subject to Section 13263 of the California Water Code and are required to obtain approval of Waste Discharge Requirements (WDRs) by the RWQCB. WDRs for discharges to surface waters meet requirements for National Pollution Discharge Elimination System (NPDES) permits, which are further described below. Land and groundwater-related WDRs (i.e., non-NPDES WDRs) regulate discharges of privately or publicly treated domestic wastewater, and process and wash-down wastewater.

2.1.2.1 Porter-Cologne Water Quality Act of 1969

The Porter-Cologne Water Quality Control Act (Water Code Section 13000 et seq.), codified as Division 7 (Water Quality) of the State Water Code, established the responsibilities and authorities of the SWRCB and the nine RWQCBs. According to Section 13001 of the Porter-Cologne Water Quality Control Act, these RWQCBs are to be "... the principal state agencies with primary responsibility for the coordination and control of water quality." The RWQCBs issue NPDES permits for discharges into surface waters. Section 13050 directs each RWQCB to "...formulate and adopt water quality control plans (Basin Plans) for all areas within the region."

The RWQCBs implement the Basin Plans by issuing and enforcing waste discharge regulations to individuals, communities, or businesses whose discharges can affect water quality. These regulations can be either Waste Discharge Requirements for discharges onto land, or NPDES permits for discharges into surface water. Effective July 1, 2010, all dischargers are required to obtain coverage under the Construction General Permit Order 2009-0009-DWQ, adopted on September 2, 2009 by SWRCB. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The RWQCBs are responsible for administering the permits.

For this project, the Los Angeles RWQCB is the responsible agency. The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan. The Los Angeles RWQCB protects water quality within the Los Angeles River, and Pacoima Channel.

2.1.2.2 National Pollutant Discharge Elimination System

The NPDES permit system was established in the CWA to regulate point source discharges (a municipal or industrial discharge at a specific location or pipe) to surface waters of the U.S. Nonpoint source pollution often enters the receiving water in the form of overland flow, which is surface runoff that is not delivered by pipelines or other discrete conveyances. As defined in the federal regulations, nonpoint sources are generally exempt from federal NPDES permit program requirements. Two exceptions that are regulated under the NPDES program are: (1) diffuse source discharges caused by general construction activities of over one acre; and (2) stormwater discharges in municipal stormwater systems as a separate system in which runoff is carried through a developed conveyance system to specific discharge locations. These are apparent nonpoint source discharges, but because the diffuse source pollution is conveyed in a confined, discrete conveyance system that discharges at a specific location or locations to surface water, for regulatory purposes, they are considered point source dischargers.

For point source discharges, each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge. However, because municipal stormwater and construction stormwater sources are diffuse and vary with site characteristics, effluent limitations are not practical. Therefore, because the actual source is diffuse and spread out over a large area, instead of effluent limits, the reduction of pollutants in urban stormwater discharge is regulated through the use of structural and nonstructural best management practices (BMPs) to the maximum extent practicable (MEP).

For these diffuse source discharges, the NPDES program establishes a comprehensive stormwater quality program to manage urban stormwater and minimize pollution of the environment to the maximum extent practicable. The NPDES program consists of (1) characterizing receiving water quality, (2) identifying harmful constituents, (3) targeting potential sources of pollutants, and (4) implementing a Comprehensive Stormwater Management Program. Each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits, while Section 307 of the CWA describes the factors that the EPA must consider in setting effluent limits for priority pollutants. Typical BMPs used to manage runoff water quality during operational activities include controlling roadway and parking lot contaminants by installing oil and grease separators at storm drain inlets, cleaning parking lots on a regular basis, incorporating peak-flow reduction and infiltration features (such as grass swales, infiltration trenches, and grass filter strips) into landscaping, and implementing educational programs.

2.1.2.3 Construction General Permit

Pursuant to CWA Section 402(p) and as related to the goals of the Porter-Cologne Water Quality Control Act, the SWRCB has issued a statewide NPDES General Permit for Stormwater Discharges Associated with Construction Activity (Order No. 2009-0009-DWQ, NPDES No. CAR000002) (Construction General Permit), adopted September 2, 2009. Every construction project that disturbs 1 or more acres of land surface or that is part of a common plan of development or sale that disturbs more than 1 acre of land surface would require coverage under this Construction General Permit. To obtain coverage under this Construction General Permit, the landowner or other applicable entity must file Permit Registration Documents prior to the commencement of construction activity, which include a Notice of Intent (NOI) and Stormwater Pollution Prevention Plan (SWPPP), and mail the appropriate permit fee to the SWRCB. Required elements of a SWPPP include (1) site description addressing the elements and characteristics specific to the site; (2) descriptions of BMPs for erosion and sediment controls; (3) BMPs for construction waste handling and disposal; (4) implementation of approved local plans; (5) proposed post-construction controls, including a description of local post-construction erosion and sediment control requirements; and (6) non-stormwater management. The SWPPP must include BMPs that address source control, and, if necessary, include BMPs that address specific pollutant control.

Examples of typical construction BMPs in completed SWPPPs include scheduling or limiting activities to certain times of year; prohibiting certain construction practices; implementing equipment maintenance schedules and procedures; implementing a monitoring program; other management practices to prevent or reduce pollution, such as using temporary mulching, seeding, or other suitable stabilization measures to protect uncovered soils; storing materials and equipment to ensure that spills or leaks cannot enter the storm drain system or surface water; developing and implementing a spill prevention and cleanup plan; installing traps, filters, or other devices at drop inlets to prevent contaminants from entering storm drains; and using barriers, such as straw bales or plastic, to minimize the amount of uncontrolled runoff that could enter drains or surface water.

Construction of the project would disturb more than one acre, and therefore it would be subject to Construction General Permit requirements.

2.1.2.4 Industrial General Permit

The SWRCB and RWQCBs regulate all specified industrial activities under the WDRs for Discharges of Stormwater Associated with Industrial Activities Excluding Construction Activities (Industrial General Permit, SWRCB Order No. 97-03-DQ, NPDES General Permit No. CAS000001). On April 1, 2014, the State Water Board adopted the new statewide Industrial General Permit (WQO No. 2014-0057-DWQ), which becomes effective on July 1, 2015 and supersedes the existing Industrial General Permit (97-03-DWQ). The Industrial General Permit requires the implementation of management measures that will achieve the performance standard of best available technology economically achievable (BAT) and best conventional pollutant control technology (BCT). The Industrial General Permit also requires the development of a SWPPP and a monitoring plan. Through the SWPPP, sources of pollutants are to be identified and the means to manage the sources to reduce stormwater pollution are described. Any Industrial General Permit noncompliance constitutes a violation of the CWA and the Porter-Cologne Water Quality Control Act and is grounds for (a) enforcement action, (b) Industrial General Permit termination, revocation and reissuance, or modification, or (c) denial of an Industrial General Permit renewal application. The proposed project is a Category 8 industrial discharger because of the associated maintenance facilities (Category 8 includes transportation facilities that conduct any type of vehicle maintenance such as fueling, cleaning, repairing, and others), and therefore, is subject to conditions of the Industrial General Permit.

The existing Metro maintenance and storage facility (MSF) is covered under the existing Industrial General Permit and will submit an application for coverage under the new Industrial General Permit by the time it becomes effective in July 1, 2015. A new MSF would require obtainment of a new Industrial General Permit and preparation and implementation of a new site-specific SWPPP. The requirements of the new Industrial General Permit are more extensive than those of the existing Industrial General Permit, and therefore the existing Industrial SWPPP will be updated and implemented to reflect these changes.

2.1.2.5 Municipal Stormwater Permit

CWA Section 402 mandates programmatic permits for municipalities to address stormwater discharges, which are regulated under the NPDES General Permit for Municipal Separate Storm Sewer Systems (MS4) (MS4 Permit). Phase I MS4 regulations cover municipalities with populations greater than 100,000, certain industrial processes, or construction activities disturbing an area of 5 acres or more. Phase II (Small MS4) regulations require that stormwater management plans be developed by municipalities with populations smaller than 100,000 and construction activities disturbing 1 or more acres of land area.

MS4 Permits require that Cities and counties develop and implement programs and measures to reduce the discharge of pollutants in stormwater discharges to the maximum extent possible, including management practices, control techniques, system design and engineering methods, and other measures as appropriate. As part of permit compliance, these permit holders have created stormwater management plans for their respective locations. Each permittee must implement a Stormwater Management Program that addresses six minimum control measures associated with construction and operational activities, including (1) public education and outreach, (2) public participation/ involvement, (3) illicit discharge detection and elimination, (4) construction site stormwater runoff control for sites greater than 1 acre, (5) post-construction stormwater management in new development and redevelopment, and (6) pollution prevention/good housekeeping for municipal operations. These control measures will typically be addressed by developing BMPs. These plans outline the requirements for municipal operations, industrial and commercial businesses, construction sites, and planning and land development. These requirements may include multiple measures to control pollutants in stormwater discharge. During implementation of specific projects under the program, project applicants will be required to follow the guidance contained in the stormwater management plans as defined by the permit holder in that location.

The project study area is located in Los Angeles County and would be regulated under the Los Angeles County MS4 Permit. The permit allows permittees to develop Watershed Management Programs to implement requirements of the Order on a watershed scale through customized strategies, control measures, and BMPs.

2.1.3 Regional Regulations

2.1.3.1 Water Quality Control Plan for the Los Angeles Region

The Los Angeles RWQCB (Region 4) has prepared the Water Quality Control Plan for the Los Angeles Region (Basin Plan) in accordance with state and federal law. The Basin Plan sets forth the regulatory water quality standards for surface waters and groundwater within its region. The applicable water quality standards address both the designated beneficial use for each water body and the water quality objectives to meet designated beneficial uses. Where multiple designated beneficial uses exist, water quality standards must protect the most sensitive use. Water quality objectives are typically numeric; although narrative criteria, based upon bio-monitoring methods, may be employed where numerical objectives cannot be established or where they are needed to supplement numerical objectives.

2.1.3.2 General Waste Discharge Requirements for Low-Threat Discharges to Surface Waters

Low-threat discharges are currently regulated by the Los Angeles RWQCB under a regional general permit, 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 (General Dewatering Permit) (Order No. R4-2013-0095, NPDES No. CAG994004). An NOI and Report of Waste Discharge must be submitted to the Los Angeles RWQCB to comply with this General Dewatering Permit. Effluent limitations for all discharges are specified for Total Suspended Solids, Turbidity, Biological Oxygen Demand (BOD), Oil and Grease, Settleable Solids, Sulfides, Phenols, Residual Chlorine, and Methylene Blue Active Substances (MBAS). There are several other effluent limitations for specific compounds.

2.1.3.3 County of Los Angeles Municipal Stormwater NPDES Permit (MS4 Permit)

The Los Angeles RWQCB issued Waste Discharge Requirements for Municipal Stormwater and Urban Runoff Discharges within the County of Los Angeles, and the Incorporated Cities Therein, Except the City of Long Beach (Los Angeles County MS4 Permit) (Order No. R4-2012-0175, NPDES Permit No. CAS00401) on November 8, 2012, and became effective December 28, 2012 (Los Angeles RWQCB 2007). In addition to the Los Angeles County Flood Control District (LACFCD) and the County of Los Angeles, the Permit is also issued to 84 municipalities within the county. The MS4 Permit requires that discharges from the MS4s shall not cause or contribute to exceedances of receiving water quality standards (designated beneficial uses and water quality objectives) for surface waters or groundwaters.

In addition to the County of Los Angeles, the City of San Fernando and City of Los Angeles are co-permittees (WDID #4B190206001 and #4B190188001, respectively) of the Los Angeles County MS4 Permit. More information on the City stormwater programs is provided in Section 2.1.4, below.

2.1.3.4 Los Angeles County Stormwater Program

The County of Los Angeles Department of Public Works Watershed Management Division is the agency assigned as the Principal Permittee under the Los Angeles County MS4 Permit. The County's Watershed Management Division was established in August 2000 to address the flood risk management, water quality, water conservation, open space, and recreational needs of the LACFCD. The County provides stormwater resources, such as a Low-Impact Development (LID) Manual, that explains how a site designer/engineer could use a wide array of simple cost-effective techniques that focus on site-level hydrologic control to meet Low Impact Development regulations. The LID manual describes those techniques, provides examples and descriptions of how they work, and contains BMP fact sheets. The County website also provides a HydroCalc Calculator that allows the site designer/engineer to calculate runoff rates and volumes from the water quality storm. In addition, the County implements a Stormwater Public Education Program to educate the public about what they can do to prevent pollution and keep local waterways clean. The County also has Stormwater and Runoff Pollution Control Program tracks industrial and commercial businesses in the unincorporated county area to determine compliance with the provisions of the MS4 Permit issued by the Los Angeles RWQCB.

Under the Program, development would have to comply with the Los Angeles County Master Drainage Plan (MDP) and the Standard Urban Stormwater Mitigation Plan (SUSMP).

Master Drainage Plan for the Los Angeles County

The County of Los Angeles Department of Public Works has developed MDPs that address many individual watershed areas within the District's jurisdiction. The MDPs include proposed drainage facilities to protect upstream and downstream properties from serious flooding. Conceptual designs and project cost estimates are included in most plans. Some MDPs are the basis for Area Drainage Plans (ADPs), which are funding mechanisms established to pay for major drainage facilities within some MDPs. The ADPs impose fees that must be paid by land developers.

Standard Urban Stormwater Mitigation Plan

The SUSMP requires that all projects that fall into one of nine categories incorporate appropriate SUSMP requirements into the project plans. All permittees (including the City of Los Angeles and City of San Fernando) are required to approve project plans as part of the development approval process before issuing a building or grading permit for projects in the nine mentioned categories. A project would be subject to SUSMP requirements if it includes development and/or redevelopment of parking lots that would be 5,000 square feet or larger or would have 25 or more parking spaces, vehicle or equipment maintenance areas, including washing and repair, and commercial or industrial waste handling or storage. For the purpose of redevelopment, it means land-disturbing activity that results in the creation, addition, or replacement of 5,000 square feet or more of impervious surface area on an already developed site. Redevelopment includes, but is not limited to the expansion of a building footprint, addition or replacement of a structure, replacement of impervious surface area that is not part of a routine maintenance activity, and land disturbing activities related to structural or impervious surfaces. Redevelopment does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility, nor does it include emergency construction activities required to immediately protect public health and safety. Where development results in an increase of less than fifty percent of the impervious surfaces of a previously existing development, and the existing development was no subject to these SUSMPs, the design standards apply only to the addition, and not to the entire development.

The SUSMP and Site-Specific Stormwater Mitigation Plans must be incorporated into project plans. Numerical design criteria for volumetric or flow-based treatment controls are included in Section 5.50.040. Prior to receiving a Final Inspection or Occupancy Permit, whichever is applicable, verification that construction of all stormwater pollution control BMPs and structural and/or treatment control BMPs identified on the approved project plans have been completed is required through a signed certification statement.

The proposed project would be subject to SUSMP requirements because it would include development and/or redevelopment of parking lots that would be 5,000 square feet or larger or would have 25 or more parking spaces, vehicle or equipment maintenance areas, including washing and repair, and commercial or industrial waste handling or storage.

2.1.3.5 Stormwater and Runoff Pollution Control Ordinance of the County of Los Angeles

The County prohibits illicit discharges, the installation or use of illicit connections, the littering and other discharge of polluting or damaging substances, and discharges from industrial or commercial activities. It requires stormwater and runoff pollution mitigation for construction activities, a permit for industrial, commercial, and public facilities. It also requires notification of uncontrolled discharges to the County and other public agencies, as well as the submittal of a detailed report to the County within 10 days of discovery of the discharge. The ordinance also specifies runoff management requirements, such as good housekeeping practices, and construction/industrial/commercial BMPs.

2.1.3.6 Los Angeles County Flood Control Act

The Los Angeles County Flood Control Act of 1915 established the Los Angeles County Flood Control District and empowered it to provide flood protection, water conservation, recreation and aesthetic enhancement within its boundaries. Currently, the Flood Control District has an operation agreement with the County of Los Angeles Department of Public Works for planning and operation activities (County of Los Angeles Department of Public Works 2014).

2.1.4 Local Regulations

2.1.4.1 Metro Water Action Plan

One of the key elements of the Los Angeles County Metropolitan Transportation Authority's (Metro) sustainability program is the development and implementation of a Water Action Plan that will reduce water consumption in a cost effective manner. The Plan analyzes recent trends and current water consumption at selected Metro divisions to better understand the relationship between current equipment, practices and total water use. The primary objectives of the plan are to:

- Obtain water usage data from current equipment and operational practices representative of water use throughout Metro's Maintenance divisions;
- Identify reasonable, cost-effective water conserving strategies that can be replicated system-wide; and
- Provide appropriate economic analysis of the costs and benefits for water conservation strategies including substitution of non-potable water supplies.

2.1.4.2 City of San Fernando Stormwater Program

The City of San Fernando incorporates requirements of the County of Los Angeles SUSMP guidelines and the municipal NPDES Permit; the City of San Fernando is a co-permittee to the County of Los Angeles Municipal Separate Storm Sewer System Permit (NPDES No. CAS004001, Board Order No. 01-182). In 1996, the Regional Water Quality Control Board, Los Angeles Region, adopted a NPDES Permit for Los Angele County and the incorporated Cities (with the exception of the City of Long Beach). In 2001, the RWQCB adopted a second NPDES Permit for the county and the incorporated Cities (with the exception of the City of Long Beach). These actions included the City of San Fernando.

The proposed project would be considered a Planning Priority Project and Significant Development/Redevelopment Project according to local guidelines because it would create or replace more than 100,000 square feet of impervious industrial or commercial surfaces and/or 5,000 square feet (with at least 25 spaces) of surface parking.

2.1.4.3 City of Los Angeles Stormwater Program

The Los Angeles Stormwater Program's mission is to protect beneficial uses of receiving waters while complying with all flood control and pollution abatement regulations. The program, which includes education and outreach, engineering programs related to cleaning up urban runoff and maintaining the storm drain system, and monitoring of waters within the City's four local watersheds (Los Angeles River, Ballona Creek, Dominguez Channel, and Santa Monica Bay), works with stakeholders to enforce TMDLs within the City's four watersheds to ensure compliance with the MS4 permit.

2.1.4.4 City of Los Angeles Municipal Code

Stormwater and urban runoff pollution control are regulated under Chapter 6, Division 4, and Article 4.4 of the Municipal Code. Section 64.70.02 describes pollutant discharge controls including prohibition of non-stormwater to storm drains or receiving waters; spill controls; the requirement to prevent, control, and reduce stormwater pollutants, including construction BMPs; and controlling pollutants from parking lots through rainy season debris removal. Section 64.72 describes the required stormwater pollution control measures for development planning and construction activities (Ord. No. 173,494). The provisions of this section set forth requirements for construction activities and facility operations of development and redevelopment projects to comply with the requirements of the SUSMP as defined by the "Development Best Management Practices Handbook" adopted by the Board of Public Works (Ord. No. 178,132). Municipal Code requirements are discussed in more detail under the pertinent impact analysis.

The Los Angeles Specific Plan for Management of Flood Hazards (Ordinance 172081)

The Flood Hazard Specific Plan (Ordinance No. 172081, effective July 3, 1998) qualifies the City of Los Angeles to be in the Regular Status classification of the NFIP. This plan qualifies property owners for greater coverage limits and generally lower flood insurance premium rates. This Information Bulletin, as required by Section 6.D of the Specific Plan, establishes standards necessary to carry out the provisions and intent of the Specific Plan.

The Flood Hazard Specific Plan requires specific construction limitations based on the location of the development in the Special Hazard Areas (Ordinance 172081, Section 5). Developments located in more than one Special Hazard Area (i.e. floodway, floodprone, and mudflow) shall comply with the requirements for the most restrictive Special Hazard Area in which the development is located.

City of Los Angeles Stormwater Ordinance

In 1998 the City of Los Angeles passed a stormwater ordinance (Los Angeles Municipal Code 64.70) that prohibits the entry of illicit discharges into the municipal storm drain system and gives the City local legal authority to enforce the NPDES Permit and take corrective actions with serious offenders. Any commercial, industrial, or construction business found discharging waste or waste water into the storm drain system may be subject to legal penalties.

City of Los Angeles Low-Impact Development Ordinance

The City of Los Angeles Low-Impact Development ordinance became effective in May 2012. The main purpose of this law is to ensure that development and redevelopment projects mitigate runoff in a manner that captures rainwater at its source, while utilizing natural resources. Project applicants are required to prepare and implement a stormwater mitigation plan when their projects fall into any of these categories:

- Single-family hillside residential developments;
- Housing developments of 10 or more dwelling units (including single family tract developments);
- Industrial /Commercial developments with one acre or more of impervious surface area;
- Automotive service facilities;
- Retail gasoline outlets;
- Restaurants;[1]
- Parking lots of 5,000 square feet or more of surface area or with 25 or more parking spaces; and
- Projects with 2,500 square feet or more of impervious area that are located in, adjacent to, or draining directly to designated Environmentally Sensitive Areas (ESAs).

Project applicants will be required to incorporate stormwater mitigation measures into their design plans and submit the plans to the City for review and approval.

[1] Developments of less than 5,000 square feet in these categories are only subject to the prescriptive method described in the *City of Los Angeles Best Management Practices Handbook*. Part B, third edition.

2.2 Methodology

The impact section will address the adverse effects of the project and alternatives based on an analysis of the components of water resources described in the existing conditions section. The analysis shall determine the potential effects of each alternative on water resources in the project corridor. It is appropriate to determine if the project contributes to a new or existing deficiency in stormwater conveyance capacity downstream. Activities include:

- Identify and describe construction and operation activities that could affect surface water runoff and drainage;
- Identify and describe impacts related to surface runoff from impervious surface;
- Identify and describe floodplains and groundwater resources;
- Identify and describe required permits; and
- Ensure that project stormwater drainage and water quality requirements are met during construction and operation.

2.3 Significance Thresholds

Significance thresholds are used to determine whether a project may have a significant environmental effect. The significance thresholds, as defined by federal and state regulations and guidelines, are discussed below.

2.3.1 Federal

NEPA does not include specific significance thresholds. According to the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA, the determination of significance under NEPA is based on context and intensity. The State CEQA thresholds (described below) encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. Therefore, the CEQA thresholds listed below also apply to NEPA for the project and its alternatives.

2.3.2 State

CEQA does not describe specific significance thresholds. According to the Governor's Office of Planning and Research (OPR), significance thresholds for a given environmental effect are the discretion of the Lead Agency and are the levels at which the Lead Agency finds the effects of the project to be significant (OPR, 1994).

2.3.2.1 State CEQA Guidelines

The State CEQA Guidelines define a significant effect on the environment as: "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance" (State CEQA Guidelines, Section 15382).

The State CEQA Guidelines do not describe specific significance thresholds. However, the guidelines list a variety of potentially significant effects.

As outlined in the State CEQA Guidelines, a project may have a significant effect on existing hydrology and water quality if the project would:

- Violate any water quality standards or waste discharge requirements.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or offsite.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite.
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
- Otherwise substantially degrade water quality.
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows.
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.
- Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow.[2]

2.3.2.2 L.A. CEQA Thresholds Guide

According to the *L.A.CEQA Thresholds Guide,* a project would normally have a significant impact on surface water hydrology if it would:

- Cause flooding during the projected 50-year developed storm event, which would have the potential to harm people or damage property or sensitive biological resources;
- Substantially reduce or increase the amount of surface water in a water body;
- Result in a permanent, adverse change to the movement of surface water sufficient to produce a substantial change in the current or direction of water flow; or
- A project would normally have a significant impact on surface water quality if discharges associated with the project would create pollution, contamination or nuisance as defined in Section 13050 of the California Water Code (CWC) or that cause regulatory standards to be violated, as defined in the applicable NPDES stormwater permit or Basin Plan (i.e., beneficial uses, 303(d)-listed impairments, and water quality objectives) for the receiving water body.

[2] Due to the low risk of seiche, tsunami, or mudflow in the Project area, these impacts are not addressed in the Environmental Consequences/Environmental Impacts section below.

Chapter 3
Affected Environment/Existing Conditions

3.1 Watersheds and Drainage

The following sections describe existing surface water hydrology, groundwater hydrology, water quality, and flooding conditions in the project vicinity (regional) and project study area (local).

3.1.1 Surface Hydrology

3.1.1.1 Setting

Precipitation in the San Fernando Valley is characterized by intermittent rain during winter months and negligible rain during summer months; 85 percent of the annual precipitation occurs from November to March. Although precipitation normally occurs as rainfall, winter snow is common in the higher elevations of the San Gabriel Mountains. As is typical of many semi-arid regions, the Los Angeles area experiences a wide variation in monthly and seasonal precipitation totals.

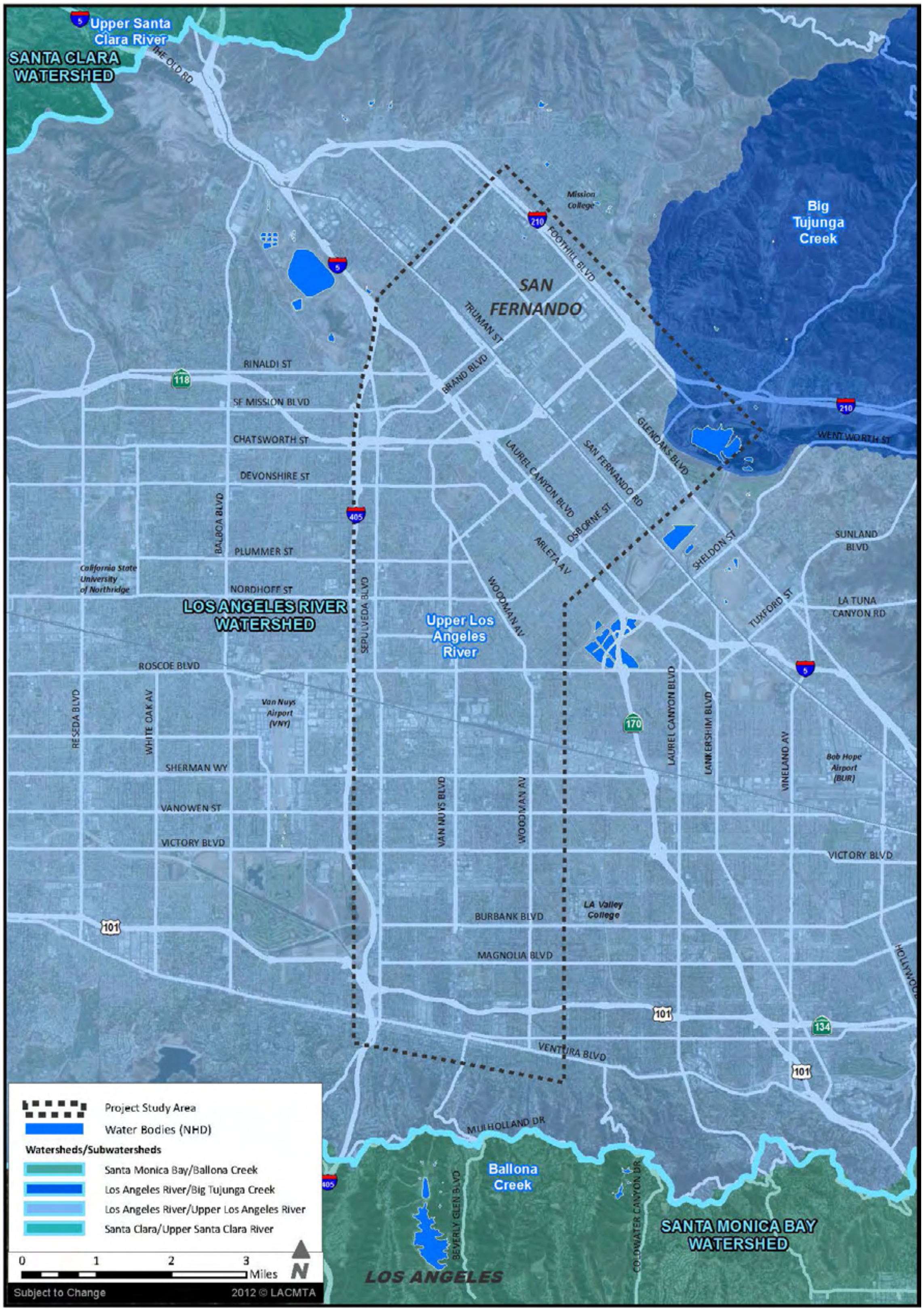
Precipitation may flow into surface reservoirs and groundwater basins or run off to the ocean. Short-term water storage is in surface reservoirs and long-term storage is in groundwater basins. The amount of infiltration to groundwater basins is dependent upon the slope, the soil type, and the intensity and duration of rainfall. Because most of the greater Los Angeles area is either paved or developed, a great deal of runoff occurs. Flood control structures have been constructed to channel runoff through inhabited areas to minimize flooding and to aid in recharging groundwater storage units.

3.1.2 Regional Surface Hydrology

The project site is located within the north western area of the Los Angeles River Watershed (Upper Los Angeles River Watershed) in the San Fernando Valley. The project is located primarily within the Los Angeles subwatershed within the upper Los Angeles River Watershed. Surface water in the San Fernando Valley drains out of the Valley through the Los Angeles River, which flows in the East-West direction and crosses the project corridor at the south end.

The Los Angeles River Watershed (HUC12-I80701050206) covers a land area of approximately 834 square miles. The eastern portion spans from the Santa Monica Mountains to the Simi Hills and in the west 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. A small area in the northern portion of the project area is located within the Big Tujunga Creek subwatershed in the Hansen Flood Control Basin area as well. Watersheds and subwatersheds within the project vicinity are shown in Figure 3-1.

Figure 3-1: Watersheds and Subwatersheds within the Project Vicinity



Source: ICF International, 2015.

The Los Angeles River flows from the southwest side of the San Fernando Valley through the Los Angeles Coastal Plain to San Pedro Bay. It is located approximately 0.5 mile north of the Metro Orange Line right-of-way at the west end of the Metro Orange Line corridor, crosses the Metro Orange Line corridor 0.5 mile west of the Balboa Station, and is 1.5 miles south of the Metro Orange Line right-of-way at the east end of the Metro Orange Line corridor. The Los Angeles River, has been channelized, and lined with concrete along most of its course for flood control purposes. Within the Sepulveda Flood Control Basin, the floor of the channel is unlined, allowing percolation of water from the channel into the ground.

Numerous tributaries, most of which have intermittent flow, discharge into the Los Angeles River. These include the Arroyo Calabasas, Bell Creek, Aliso Wash, Browns Canyon Wash, Chatsworth Creek, Pacoima Wash, Tujunga Wash, and Verdugo Wash. These washes and creeks are primarily concrete-lined within the urban areas. Flows in the Los Angeles River system are highly variable. Dry season flows are comprised chiefly of excess irrigation water applied in urban areas, controlled release of reservoirs, and municipal and industrial wastewater including effluent from the Tillman and Los Angeles-Glendale sewage treatment plants. During the wet season, flows in the Los Angeles River are augmented by stormwater runoff that varies with storm duration, intensity, and frequency.

The Los Angeles Department of Public Works is tasked with finding ways to restore or revitalize the channels within the watershed and, thereby, provide significant opportunities for recreation use and aesthetic improvements along the waterways in the Los Angeles metropolitan area while protecting the Los Angeles Basin from major flooding.

3.1.3 Local Surface Water Hydrology

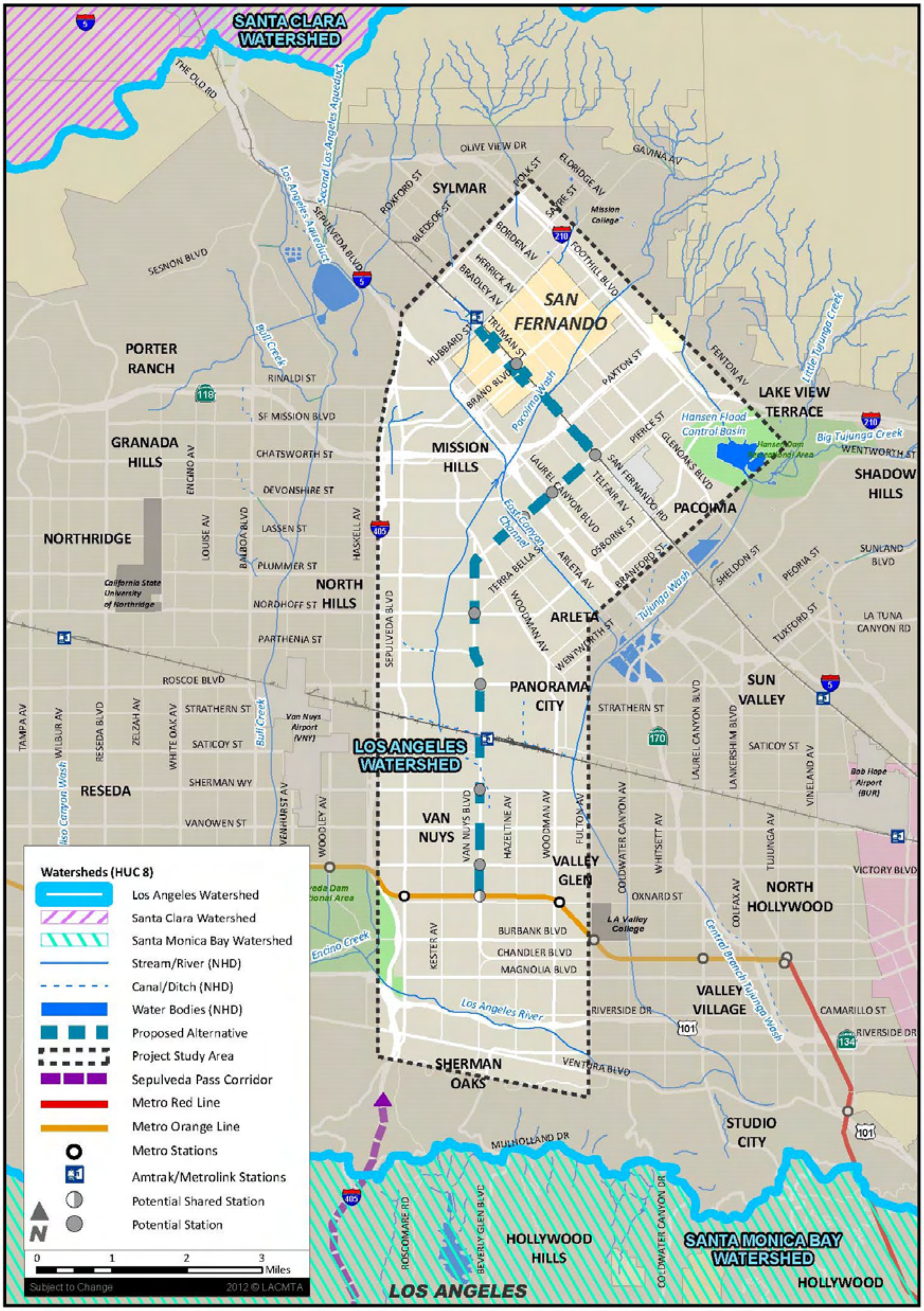
The project area is highly urbanized with few natural areas or drainage features. Hydrological features within the project study area are shown in Figure 3-2.

There are four major waterways crossing the project corridor. The crossings are located as follows:

1. Pacoima Wash at San Fernando Road;
2. Pacoima Wash at Van Nuys Boulevard;
3. Pacoima Channel at Van Nuys Boulevard; and
4. Pacoima South Channel at Van Nuys Boulevard.

Other major surface water resources in the vicinity of the project corridor are Caballero Creek, Bull Creek, and the Tujunga Wash. Caballero Creek drains an area of approximately 10 square miles, most of which lies within the Santa Monica Mountains. The creek flows only intermittently. It crosses the Metro Orange Line Corridor as a box culvert approximately 0.4 mile east of the Reseda Station and joins the Los Angeles River 1 mile to the north. Bull Creek drains an area of approximately 150 square miles, including large areas within the San Gabriel and Santa Susana Mountains. Bull Creek is regulated by the Upper Van Norman Dam and Lake, which is located approximately 7 miles north of the Metro Orange Line. It crosses the Metro Orange Line as a concrete lined channel 0.2 miles east of the Balboa Station and joins the Los Angeles River 0.6 mile to the south within the Sepulveda Basin. The Tujunga Wash drains an area of approximately 150 square miles, including large areas within the San Gabriel Mountains. The Tujunga Wash is regulated by the Hansen Dam and Flood Control Basin, which is located approximately 5 miles north of the

Figure 3-2: Hydrological Features within the Project Vicinity



Source: ICF International, 2015.

Metro Orange Line. In the vicinity of the Metro Orange Line it flows through two branches; the main concrete-lined flood control channel crosses the project corridor 0.9 miles west of the Laurel Canyon Station, and the Central Branch of the Tujunga Wash crosses the Metro Orange Line corridor 0.4 miles west of the North Hollywood Station as a box culvert. Both branches flow into the Los Angeles River 2 miles to the southeast of the crossings in Studio City.

Drainage within the project area is primarily dependent on a network of existing storm drains and drainage channels. The Pacoima Wash, which is a tributary of the Los Angeles River, begins in the north and flows southerly and crosses the project corridor at San Fernando Road. Beginning from the north on San Fernando Road, the flow is easterly and discharges into Pacoima Wash, then easterly from Pacoima Wash to Van Nuys Boulevard, then southerly on Van Nuys Boulevard and discharges into the I-5 drainage system, then southerly from I-5 and discharges into the Pacoima Channel, then southerly on Van Nuys Boulevard from the Pacoima Channel and discharges into the South Channel of the Pacoima Wash at the Metrolink railroad tracks, then southerly on Van Nuys Boulevard from the Metrolink railroad tracks and discharges into the Los Angeles River, and then surface flow continues southerly on Van Nuys Boulevard from the Los Angeles River and is conveyed northerly in a closed system in Van Nuys Boulevard back to the Los Angeles River. Additionally, surface flows that are not intercepted at intersections on Van Nuys Boulevard, continue to flow in the easterly direction on the cross streets.

The project is located within City of Los Angeles and City of San Fernando street rights-of-way along Van Nuys Boulevard and San Fernando Road and within the Metro right-of-way adjacent to the Metrolink tracks from Van Nuys Boulevard to the Sylmar/San Fernando Metrolink station.

A major storm drain line runs through the Van Nuys Boulevard corridor and San Fernando Road Corridor within the project study area. The typical tributary area captured by these main storm drain lines are within two City blocks of the corridor. Storm drain pipe sizes range from 42 to 72 inches. Maintenance and jurisdiction of these facilities varies between the City of Los Angeles and County of Los Angeles. The Pacoima Wash Control Channel crosses the project corridor along San Fernando Road approximately 0.5 mile west of SR-118. The crossing is a single-span bridge. The channel is a trapezoidal concrete lined channel with a 12-foot bottom width and 1.5:1 side slopes with a depth of 16 feet.

The project alignment crosses the Pacoima Wash Diversion Channel 600 feet west of Arleta Avenue. The channel is a trapezoidal concrete lined channel. The depth of the channel is 20.4 feet. The bottom width is 30 feet with 2.25:1 side slopes.

The project crosses the South Channel of the Pacoima Wash along Van Nuys Boulevard at the under crossing of the Metrolink right-of-way near the Van Nuys Metrolink Station. The South Channel is north of the Metrolink right-of-way and transitions to the south of the Metrolink right-of-way on the east side of Van Nuys Boulevard.

The project crosses the Pacoima Wash Channel along Van Nuys Boulevard at mid-block between Covello Street and Valero Street. At this location, the open channel transitions to a box culvert that proceeds west underneath Van Nuys Boulevard, approximately to the intersection of Sepulveda Boulevard.

3.1.4 Surface Water Quality

The project area is highly urbanized which generally captures contaminants from roads, vehicles and household wastes. Urbanized impervious surfaces are known for concentrating and redirecting flows that carry such contaminants into local waterways. In more recent years, municipalities have been implementing BMPs to help protect water quality. Stormwater runoff from the first storm of the season tends to contain high levels of contaminants; contaminant levels decrease in the stormwater runoff as the number of storms increases. Beneficial uses within the project vicinity are shown in Table 3-1.

Table 3-1: Designated Beneficial Uses for Surface Water Bodies within the Project Vicinity

Water Body	Designated Beneficial Uses
Los Angeles River Reach 5 (Sepulveda Dam to Balboa Blvd.)	Municipal and Domestic,[a] Industrial Service Supply,[a] groundwater recharge, contact and non-contact recreation, warm freshwater habitat, wildlife habitat, wetland habitat.

[a] Potential beneficial use.

Source: Los Angeles Regional Water Quality Control Board. 1994.

In accordance with the federal CWA and state Porter-Cologne Water Quality Control Act, TMDLs have been developed and incorporated into the Basin Plan for some pollutants identified on the 303(d) list as causing contamination in project sites receiving waters. For other pollutants listed on the 303(d) list (e.g., Section 303[d] of the Clean Water Act), TMDLs are scheduled for development, undergoing development, or in the process of review by the SWRCB.

CWA Section 303(d) List of Impaired Waters within the project vicinity are listed in Table 3-2. The Pacoima Wash and Pacoima Diversion Channel are not listed as being impaired for anything on the 303(d) List.

Table 3-2: 303(d)-Listed Impairments for Water Bodies within the Project Vicinity

Reach	303(d)-listed Impairments	Source	TMDL Completion Date
Los Angeles River Reach 5 (within Sepulveda Basin)	Ammonia	Nonpoint Source, Point Source	2004
	Copper	Unknown	2005
	Lead	Unknown	2005
	Nutrients (Algae)	Nonpoint Source, Point Source	2004
	Oil	Nonpoint Source, Point Source	Est. 2019
	Trash	Nonpoint Source, Surface Runoff, Urban Runoff/Storm Sewers	2008

Source: 2010 Integrated Report (Clean Water Act Section 303(d) List)

3.1.5 Groundwater Hydrology

3.1.5.1 Groundwater Supply and Recharge

The study area is located within the San Fernando Valley Groundwater Basin (Department of Water Resources Groundwater Basin Number: 4-12), which is part of the South Coast Hydrologic Region. The San Fernando Basin is the largest of the four basins in the Upper Los Angeles River Area (ULARA). The basin consists of 112,000 acres and comprises 91.2 percent of the total valley fill in

ULARA. It is bounded on the east and northeast by the San Rafael Hills, Verdugo Mountains, and San Gabriel Mountains; on the north by the San Gabriel Mountains and the eroded south limb of the Little Tujunga Syncline which separates it from the Sylmar Basin; on the northwest and west by the Santa Susana Mountains and Simi Hills; and on the south by the Santa Monica Mountains.

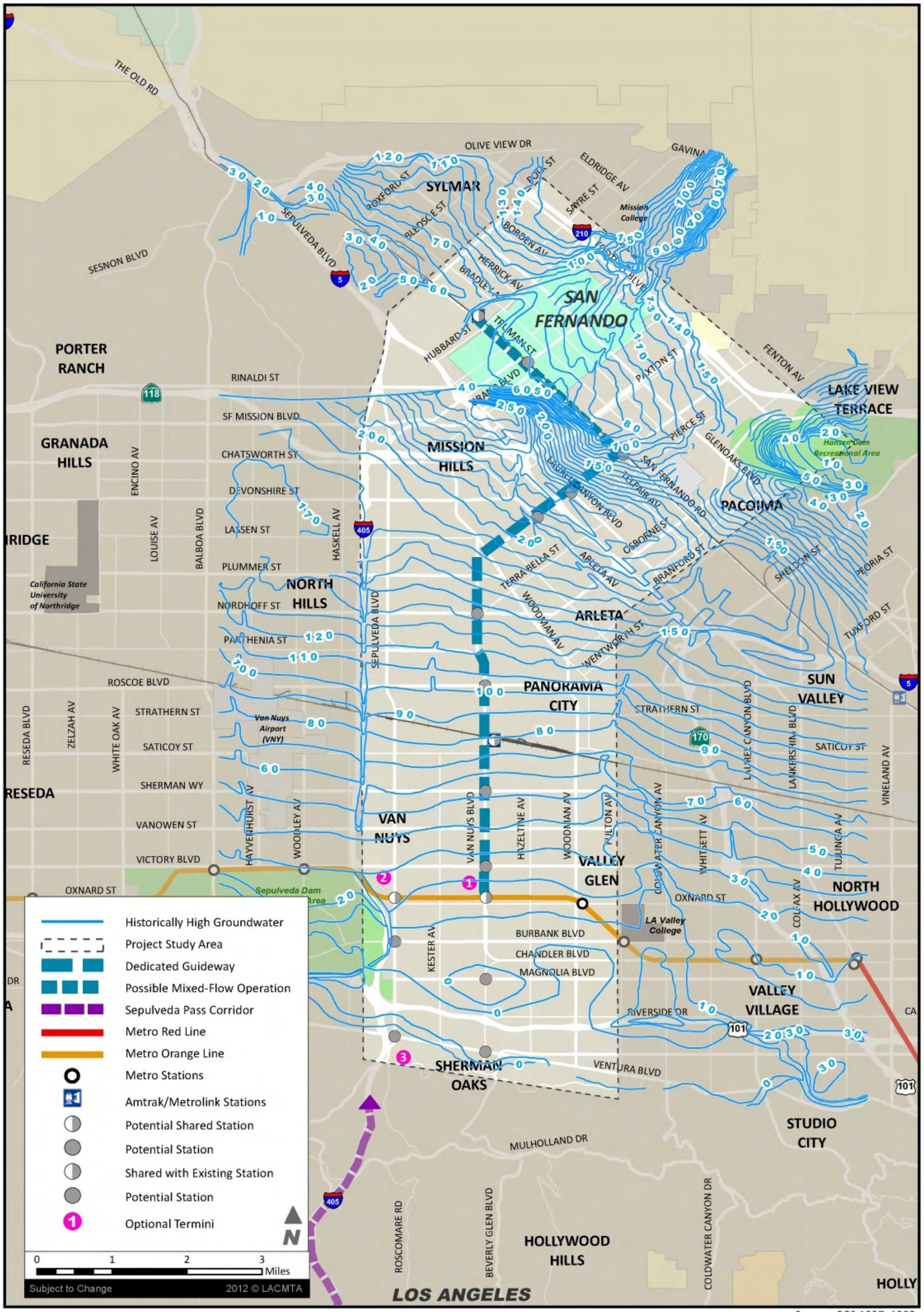
The City of Los Angeles Department of Water and Power (LADWP) provides customers with water from three sources: local groundwater and water imported through the State Water Project (SWP), and Metropolitan Water District of Southern California, which transports water from the California Aqueduct and Colorado River Aqueduct. In areas where local groundwater is available, LACWD owns and operates groundwater production wells that are used to pump the water from the groundwater basin to the surface. The groundwater is then disinfected and pumped into the distribution system. All of the groundwater pumped by the City of San Fernando is extracted from the Sylmar Basin. However, groundwater has been found to be contaminated in the San Fernando Groundwater Basin, as described below. The City of Los Angeles has plans to clean up half the San Fernando Valley groundwater wells now contaminated by postwar industrial pollution, in hopes that it can be used for water supply in the future.

Groundwater basins are underlain by one or more layers of permeable soil, which can store water. Fresh water permeates soils to varying degrees, depending on the composition of the soil. Coarsely grained, sandy, or gravelly strata comprise individual aquifers. These water-bearing deposits are readily capable of absorbing, storing, transmitting, and yielding water to wells. Fine-grained sediments, such as silts and clays, are interblended with the aquifers and form aquicludes that limit the transmission of water out of the aquifer.

The elevation of groundwater within a basin varies with the amount of water being pumped out of the basin and the amount of recharge returning water to the basin. The basin is adjudicated, and therefore pumping of groundwater is controlled by the ULARA Watermaster in order to prevent groundwater levels from declining. Despite this, groundwater levels in the San Fernando Basin have undergone a general decline during recent years. Probable causes of this decline include increased urbanization and runoff leaving the basin, reduced artificial recharge, and continued groundwater extractions by the three major pumping parties in the basin - the Cities of Los Angeles, Burbank, and Glendale. The ULARA Watermaster continues to monitor this situation, and efforts to reverse this trend are underway. The long-term solution will require the close cooperation of the three major pumping parties (Upper Los Angeles River Area Watermaster 2013).

Groundwater flow in the San Fernando Valley is generally eastward, parallel to the course of the Los Angeles River. The highly non-uniform character of the soils in the San Fernando Valley results in local “perched” aquifers that are not connected to deeper groundwater. A geotechnical survey conducted for the proposed project found that groundwater depths in the vicinity of the project varied from 15 to more than 100 feet below the ground surface during the dry season, with depth to groundwater generally increasing from west to east. Groundwater levels are shallow at the southern end of the project area near the Los Angeles River and become deeper at the northern end of the project area near the foothills, as shown in Figure 3-3. This study did not differentiate between perched aquifers and the deeper, more continuous aquifers. Historically, perched groundwater has sometimes been found within 10 feet of the surface. (Upper Los Angeles River Area Watermaster 2013).

Figure 3-3: Historically High Groundwater Levels within the Project Vicinity



Source: Diaz•Yourman & Associates, 2015.

Groundwater basins may be recharged naturally through percolation of precipitation or artificially with imported or reclaimed water. Artificial recharge with imported water is practiced as a means of offsetting declining groundwater levels and providing storage for use in times of drought. Los Angeles, Burbank, and Glendale each have a right to store groundwater in San Fernando Basin by artificial spreading or by in-lieu activities, and to extract equivalent amounts. (Upper Los Angeles River Area Watermaster 2013).

There are five active spreading facilities located in the SFB (Plate 1). The County of Los Angeles Department of Public Works operates the Branford, Hansen, Lopez, and Pacoima spreading grounds, whereas the LADPW, in cooperation with the City of Los Angeles, operates the Tujunga spreading grounds. These spreading facilities are used for spreading native and imported water, when available. Projects are under way to deepen and improve the capacity of these spreading basins, and the County of Los Angeles Department of Public Works and the LADWP are also working to identify ways to maximize spreading, including possible changes to the operations at each spreading basin (Upper Los Angeles River Area Watermaster 2013).

3.1.5.2 Groundwater Quality

The groundwater quality in the basin is characterized as having a calcium sulfate-bicarbonate water type in the western part of the basin and calcium bicarbonate in the eastern part of the basin. Groundwater impairments based on a number of investigations have determined there is volatile organic compounds (VOCs) contamination in the basin. Such VOCs include trichloroethylene (TCE), and perchloroethylene (PCE). In addition, petroleum compounds, chloroform, nitrate, sulfate and heavy metals are all other impairments in the basin.

The beneficial uses of the groundwater in the San Fernando Basin are shown in Table 3-3.

Table 3-3. Designated Beneficial Uses Groundwater in the Project Vicinity

Water Body	Designated Beneficial Uses
San Fernando Basin	Municipal and Domestic Supply, Industrial supply, and Agriculture

Source: Los Angeles Regional Water Quality Control Board. 1994.

Groundwater in the ULARA Basins has significant contamination issues. A number of the groundwater production wells are located with the bounds of a Superfund area. Elevated concentrations of VOCs, such as TCE and PCE, as well as other contaminants, such as hexavalent chromium have prompted the City of Los Angeles to discontinue pumping at numerous production wells (MWD, 2007). Emerging contaminants, such as 1,4 dioxane, have also been found in concentrations high enough to necessitate the alteration of groundwater pumping operations.

In addition, perchlorate, a constituent of regional concern has been detected in 2 wells above the notification level of 6 µg/L, one in the Sylmar Basin and one in the eastern end of the San Fernando Basin (MWD 2007). In these areas of contamination, wells have been removed from service or the groundwater is being blended or treated to meet state drinking water standards as discussed below. In the San Fernando Basin, the estimated capacity of all the wells that have been removed from service due to elevated contamination levels is approximately 200 cfs or 396 AF/day (MWD 2007). In addition to the contaminants in the San Fernando groundwater basin, one well was removed from service in the Sylmar basin due to elevated TCE levels.

Continuing efforts to expand groundwater extraction capability, improve groundwater source quality, and treat extracted groundwater are underway in the basin. EPA, the Department of Toxic Substances Control, and the Los Angeles RWQCB are working with the Cities of Los Angeles, Glendale, and Burbank to identify and resolve San Fernando Basin contamination concerns. The LADWP is currently undertaking a comprehensive study of the San Fernando Basin to fully characterize the extent and composition of known and emerging contaminants.

3.1.6 Flooding

A few small areas within the project study area were identified as being within the FEMA 100-year flood zone (Zone A); one of which crosses the proposed project alignment, as shown in Figure 3-4. However, the FEMA maps indicate that the 100-year storm event is fully contained within the County flood channels and drainage facilities. The following areas within the project study area are FEMA-designated Flood Zone A:

- A portion of the Pacoima Wash Channel that begins just west of the proposed project alignment and then crosses it just north of Sherman Way.
- A portion of the Pacoima Wash in the north of the project study area near Foothill Boulevard.
- An unnamed drainage ditch near the Metrolink Railroad Tracks just east of the proposed project alignment.
- A portion of the Tujunga Wash Control Channel east of the proposed project alignment.
- A small portion of the Los Angeles River near Sepulveda Dam. The part of the Metro Orange Line that is within the Sepulveda Flood Control Basin lies above the maximum design flood elevation everywhere except for a 1000-foot stretch immediately west of the Woodley Station.
- The Hansen Flood Control Basin in the northeast of the project study area.

Historic flooding in Los Angeles County records show that since 1811, the Los Angeles River has flooded 30 times, on average once every 6.1 years. But averages are deceiving, for the Los Angeles Basin goes through periods of drought and then periods of above average rainfall. Between 1889 and 1891 the river flooded every year, and from 1941 to 1945, the river flooded five times. Conversely, from 1896 to 1914, a period of 18 years, and again from 1944 to 1969, a period of 25 years, the river did not have serious floods.

3.1.6.1 Dams and Levees

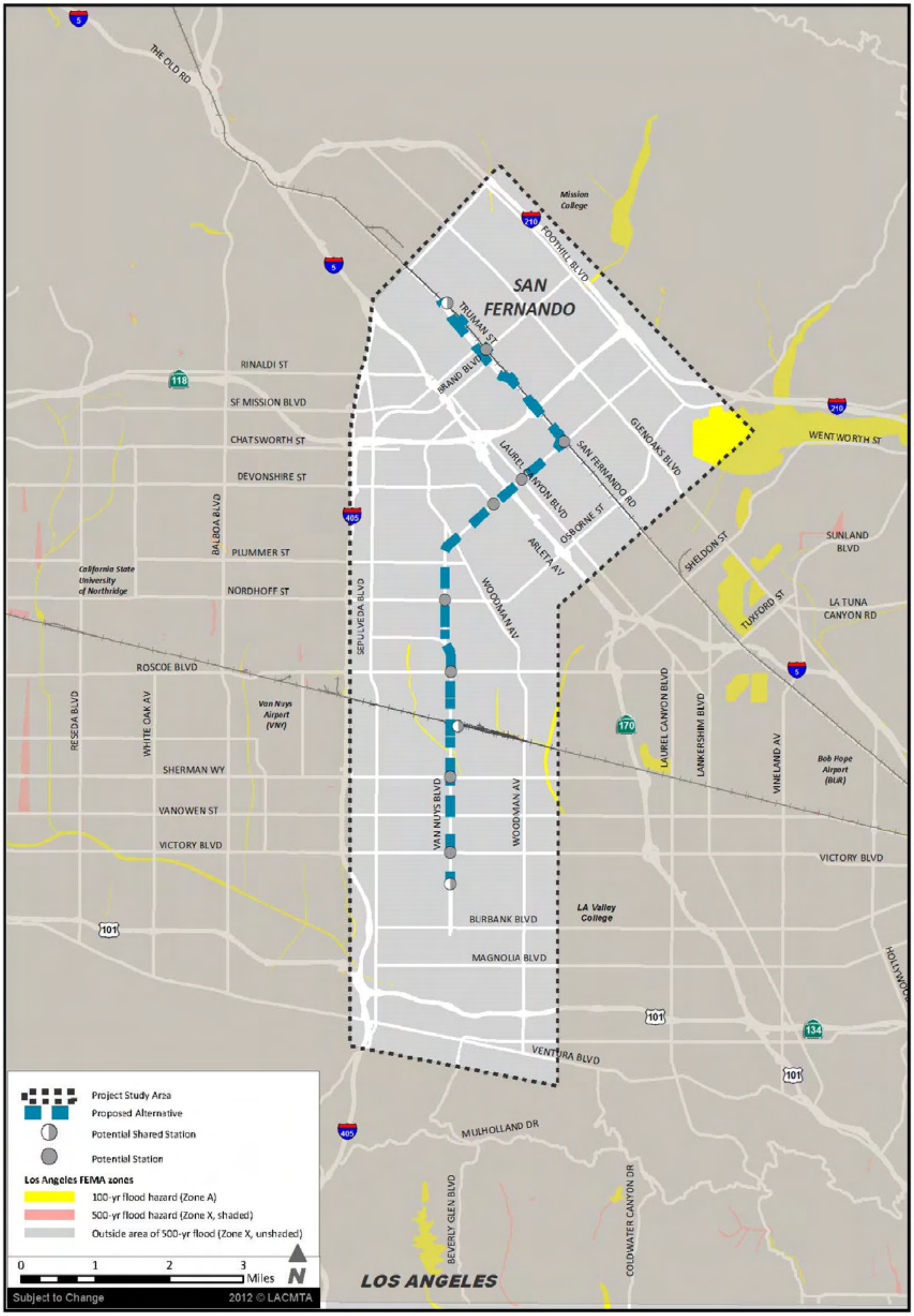
There are reservoirs and associated dams located within the project vicinity. Although the likelihood is low, dams within the project vicinity may be at risk of failure should a major earthquake or other catastrophic event occur. If they fail, it could cause flooding within the project study area. As shown in Figure 3-5, the City of Los Angeles Safety Element (1996) summarizes inundation potential from dam failures and water storage facility failures.

There are eight reservoirs located upstream and downstream of the project and they are as follows:

1. Chatsworth Reservoir;
2. Sepulveda Flood Control Basin;*
3. Upper Van Norman Lake;
4. Lower Van Norman Reservoir;

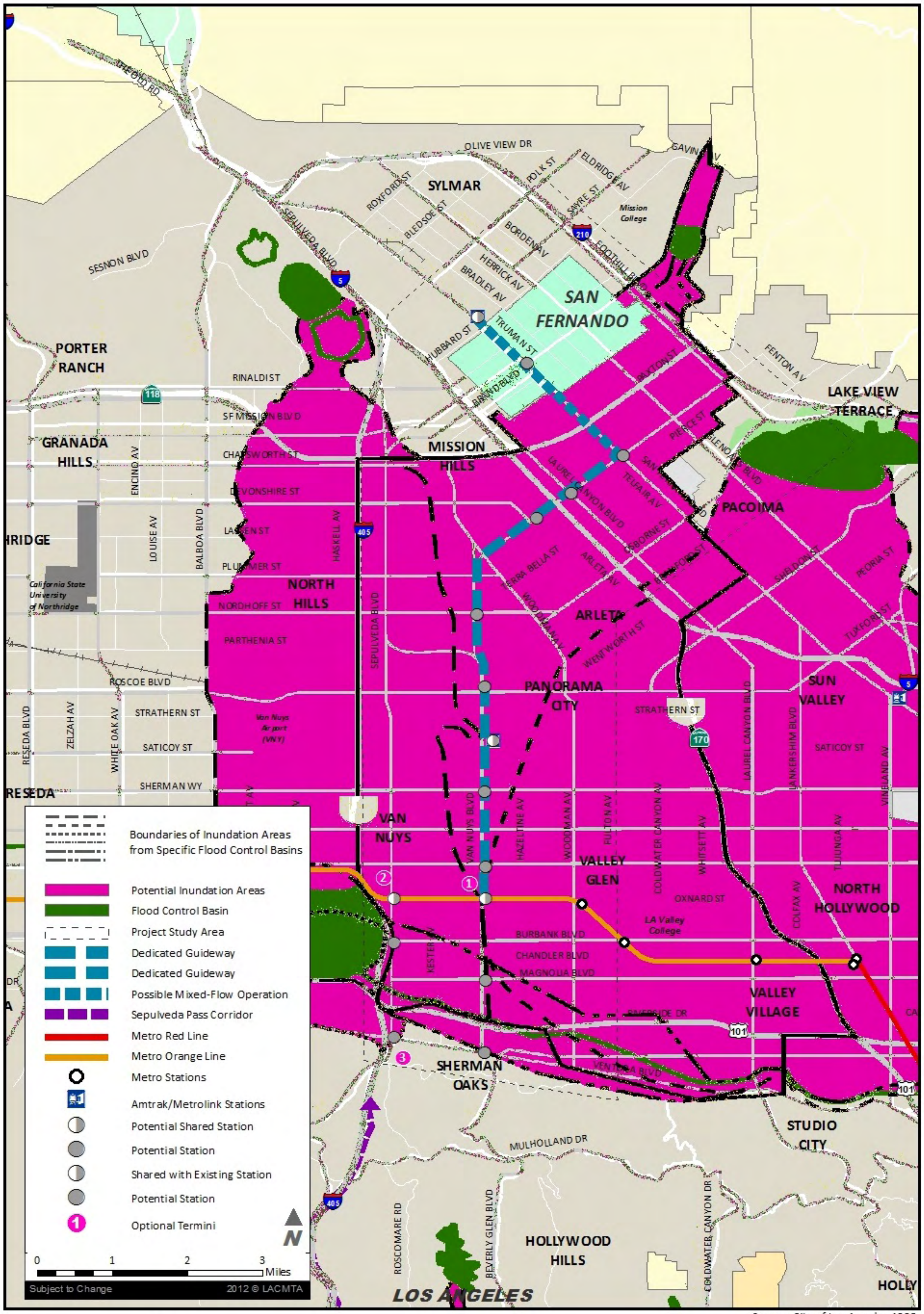
*Located within 2 miles of the project area.

Figure 3-4: FEMA Flood Zones within the Project Vicinity



Source: ICF International, 2015.

Figure 3-5: Inundation Areas within the Project Vicinity



Source: City of Los Angeles 1996.

Source: Diaz•Yourman & Associates, 2015.

5. Los Angeles Reservoir;
6. Pacoima Spreading Grounds;
7. Hansen Flood Control Basin; and
8. Encino Reservoir.

Figure 3-2 shows nearby reservoirs. The maintenance of these reservoirs is shared between County of Los Angeles Department of Public Works and USACE. Only portions of the Sepulveda and Hansen Flood Control Basins are located within the project study area.

The Los Angeles River is partially located within the Sepulveda Dam and the Flood Control Basin. Both are owned and maintained by the USACE, who constructed the facilities in 1941 following the Flood Control Act of 1936. The Sepulveda Dam is an earth filled structure consisting of an earth embankment with a concrete spillway near the center. The dam is 15,444 feet long and has a maximum height of 57 feet above the streambed. The basin has a storage capacity of 17,425 acre feet at the crest of the raised spillway, which is located at an elevation of 710 feet above sea level. During a maximum design flood (greater magnitude the 100-year flood event), the basin can hold 17,563 acre feet of water, cresting at an elevation of 717 feet.

The Hansen Dam and Flood Control Basin was constructed in 1940 and lies within the Tujunga Wash system. The dam is an earth-filled structure with a maximum height above streambed is 97 feet. The Dam has a storage capacity of 33,348 acre-feet at spillway crest (elevation 1060 feet) based on the November 2004 topographic survey. The Dam embankment extends in a general east and west direction at right angles to Tujunga Wash. All of the major inflow and impoundment events in project history have resulted from winter storms. Inflow rates drop rapidly between storms, and inflow during the dry summer season is usually less than 10 cfs. Floodwaters are released quickly (a matter of days) in order to regain storage space to capture future flood inflows. (USACE 2011).

According to a query of the USACE National Levee Database, there are no levees located within the project study area (USACE 2015). There are no levees associated with either Tujunga or Pacoima Wash. The Los Angeles River appears to be bordered by levees in certain locations, but the nearest levees are located south of the project study area where it is likely outside of the levee failure inundation area.

3.1.6.2 Seiches, Tsunamis, and Mudflows

Seiches are large waves generated in enclosed bodies of water, such as lakes, induced by ground shaking. Tsunamis are large waves generated at sea by significant disturbance of the ocean flow, causing the water column above the point of disturbance to displace rapidly. Tsunamis are predominantly caused by shallow underwater earthquakes and landslides. Mudflows result from the down-slope movement of soil and/or rock under the influence of gravity, and are also often caused by earthquakes. The Hansen Flood Control Basin is the only reservoir located completely within the project study area. However, it is fairly small and only fills up during a wet winter season, and therefore, wave action is minimal and seiches would likely not be large enough to present a flood risk. The project study area is located approximately 9 miles from the Santa Monica Bay, and therefore it is outside of tsunami potential inundation area, and, due to the relatively flat terrain, is not prone to mudflows.

Chapter 4
Environmental Consequences/ Environmental Impacts

This chapter analyzes the proposed project's operational, construction, and cumulative impacts on water quality, surface waters, and hydrology.

4.1 Operational Impacts

4.1.1 No-Build Alternative

The No-Build Alternative would result in no project-related improvements and as a consequence it would not result in any operational impacts to water resources and water quality.

4.1.2 TSM Alternative

The TSM Alternative would include relatively low-cost transit service improvements such as increased bus frequencies, bus schedule restructuring, traffic signal improvements, and bus stop amenities/improvements. The TSM Alternative operational improvements could result in increases in bus vehicle miles traveled, which could increase pollutants such as fallout from air pollution (e.g. nitrous oxides, HC/VOC, lead, particulates), heavy metals from brake pads, oils, greases, and other vehicle lubricants in surface water runoff from roadway surfaces. However, given that the bus vehicle miles traveled are not expected to substantially increase and given the possibility that operational improvements may increase bus patronage with a corresponding decrease in passenger car vehicle miles traveled, the pollutant impacts/effects on water quality are expected to be less than significant under CEQA and minor adverse under NEPA.

This alternative could require increased bus maintenance including washing of buses; however, the increase in water usage would be relatively minor and would not substantially deplete groundwater supplies. Additionally, no or very minimal increases in impervious surfaces could occur under this alternative due to construction of bus stop amenities/improvements; therefore, the TSM Alternative would not substantially interfere with groundwater recharge.

The TSM Alternative would result in very minor physical improvements and thus would not alter drainage patterns in the study area and would have no or negligible impacts on the amount of surface water runoff.

No structures would be constructed under this alternative that would be located within a designated 100-year floodplain and consequently it would not would impede or redirect floodwater flows or cause flooding during a 50-year storm event. The project alignment is located in a potential inundation area that could be affected or flooded due to dam failures. However, this alternative may include only minor improvements to existing bus facilities and would not include significant new structures that could put property or persons at risk as a result of a dam or water storage facility failure.

The project corridor is not located in area that would be subject to inundation hazards due to tsunami or mudflow. The potential for a catastrophic seiche event at the Hanson Flood Control Basin reservoir is low.

4.1.3 Build Alternative 1 – Curb-Running BRT Alternative

4.1.3.1 Water Quality

Operational impacts on water quality due to the Curb-Running BRT Alternative would be similar to existing conditions because the project would result in a negligible change in impervious area and there would be no major sources of new pollutants. Because the project area is currently a transportation corridor, the water runoff from roadway surfaces would contain the same types of pollutants as expected under existing conditions. However, enhanced bus frequencies could result in small increases in potential pollutants from bus operations. Typical water quality pollutants associated with transportation corridors include: fallout from air pollution (e.g. nitrous oxides, HC/VOC, lead, particulates), heavy metals from brake pads, oils, greases, and other vehicle lubricants.

As per the County's SUSMP requirements as part of the stormwater program, because the project would replace 5,000 square feet or more of impervious surface area on an already developed site, SUSMP and Site-Specific Stormwater Mitigation Plans must be incorporated into project plans. Compliance with these regulations would require the inclusion of post-construction stormwater measures and LID measures designed to minimize runoff flows and water quality degradation.

The Curb-Running BRT Alternative would be accommodated by the existing Metro Division 15 MSF and therefore would not require the creation of a new MSF. The existing MSF collects and treats stormwater in compliance with its existing Industrial General Permit and associated Industrial SWPPP and would continue to do so under this alternative. Metro will submit an application for coverage under the new Industrial General Permit by the time it becomes effective in July 1, 2015, and update their existing SWPPP to reflect changes in permit requirements.

With compliance with the County's stormwater program, City of San Fernando and City of Los Angeles stormwater requirements, and the Industrial General Permit, impacts and effects on water quality during project operation would be less than significant under CEQA and minor adverse under NEPA. No mitigation is required.

4.1.3.2 Groundwater Supplies and Recharge

For all of the alternatives, including the Curb-Running BRT Alternative, the existing area that would be occupied by the proposed project facilities is mostly impervious and does not contribute substantially to groundwater recharge. The Curb-Running BRT Alternative would result in a negligible change to impervious surface area, and therefore, would not substantially interfere with groundwater recharge. Operational impacts or effects would be less than significant under CEQA and minor adverse under NEPA.

4.1.3.3 Stormwater and Drainage

The Curb-Running BRT Alternative would not substantially alter the existing drainage pattern and no stream or river would be altered. Currently, stormwater drains to a major storm drain line that runs through the Van Nuys Boulevard corridor and San Fernando Road Corridor and crosses the Pacoima Wash Channel and Pacoima Wash Control Channel. Under the Curb-Running BRT Alternative, stormwater would continue to drain into the existing storm drain line and according to SUSMP requirements, the drainage design would limit the design water surface elevations and velocities to no greater than the existing conditions or to what can be handled by the existing conditions within the project area. Therefore, drainage would remain similar to existing conditions and no substantial erosion, siltation, or flooding would occur on- or offsite as a result of the Curb-Running BRT Alternative. Impacts would be less than significant under CEQA and effects under NEPA would be minor adverse.

4.1.3.4 Flooding and Flood Hazards

As shown in Figure 3-4, a few small areas within the project study area were identified as being within the FEMA 100-year flood zone (Zone A). However, these areas are fully contained within the County flood channels and drainage facilities. Therefore, the project study area is not highly prone to flooding during a 100-year storm event. In addition, operation of the BRT Alternatives would not place structures that would impede or redirect flood flows as mapped on any flood hazard delineation map.

The project study area is located within 100-year flood risk hazard areas. However, operation of the Curb-Running BRT Alternative would not place structures that would impede or redirect flood flows and the proposed project would not increase the present risk of dam failure. There would be no substantial increase in impervious area and overall drainage patterns would remain the same; therefore, flood capacities would not be affected. Furthermore, because the project is in a highly urbanized area, it is not expected that the Curb-Running BRT Alternative would indirectly result in substantial increases in population or employment densities within the project study area. Therefore, flood impacts or effects would be less than significant under CEQA and minor adverse under NEPA.

There are no levees located within the project study area, and therefore no associated flood impacts with levee failure would occur. The project study area, however, is located in an inundation zone area, as shown on Figure 3-5, which would be caused by a dam failure. The maintenance of the dams and associated reservoirs within the project vicinity is shared between the County of Los Angeles Department of Public Works and USACE. Portions of the Sepulveda and Hansen Flood Control Basins (and the associated dams) are located in the project study area, and therefore there is risk of dam failure. However, the project itself would not increase the present risk of dam failure and new structures for human occupancy would be limited to new and relocated bus stops. Therefore, the Curb-Running BRT Alternative would not result in significant new structures that could put property or persons at risk as a result of a dam or water storage facility failure

Also, as noted above, the Curb-Running BRT Alternative would not substantially increase the amount of impervious area and overall drainage patterns would remain the same; therefore flood capacities would not be affected. Therefore, the impacts or effects would be less than significant under CEQA and minor adverse under NEPA.

4.1.3.5 Seiche, Tsunami, and Mudflow Hazards

The project study area is outside of tsunami potential inundation areas and, due to the relatively flat terrain, is not prone to mudflows. The potential for a catastrophic seiche event at the Hanson Flood Control Basin reservoir is low. Therefore, impacts/effects would be less than significant under CEQA and minor adverse under NEPA.

4.1.3.6 Surface Water Use and Flows

The Curb-Running BRT Alternative would not create or utilize substantial volumes of surface water during project operations and no surface water body would be altered. As discussed previously, the Curb-Running BRT Alternative would not substantially change the overall impervious area; therefore, stormwater volumes are not anticipated to change. In addition, with the exception of possible minor increases in water to maintain new buses, a substantial increase in consumptive use of water from nearby reservoirs is not expected. Therefore, the Curb-Running BRT Alternative would not appreciably reduce or increase the amount of surface water in surrounding water bodies nor would it result in a substantial adverse change in the current or direction of water flows. Therefore, impacts or effects would be less than significant under CEQA and minor adverse under NEPA.

4.1.4 Build Alternative 2 – Median-Running BRT Alternative

Impacts under this alternative would be similar to those described above for the Curb-Running BRT Alternative.

4.1.5 Build Alternative 3 – Low-Floor LRT/Tram Alternative

4.1.5.1 Water Quality

Operational impacts on water quality for the Low-Floor LRT/Tram Alternative would be similar to existing conditions because the project would result in very minor increases in the amount of impervious area.

Unlike the BRT Alternatives, the LRT alternatives, including the Low-Floor LRT/Tram Alternative, would require the construction of a new MSF. Although the MSF would not substantially increase the amount of impervious area, maintenance facilities are subject to the conditions of the Industrial General Permit because any type of vehicle maintenance, such as fueling, cleaning, repairing, and others has the potential to degrade water quality. The most common pollutant source from maintenance areas is spills/leaks of fuel and other liquids. Additionally, pollutants in train wash water are likely to include surfactants, suspended solids, oil and grease, asbestos (from brake pads), heavy metals, and lead.

The Industrial General Permit requires the implementation of management measures that will achieve the performance standard of best available technology economically achievable (BAT) and best conventional pollutant control technology (BCT). The Industrial General Permit also requires the development of a SWPPP and a monitoring plan. Through the Industrial SWPPP, sources of pollutants are to be identified and the means to manage the sources to reduce stormwater pollution are described.

As per the County's SUSMP requirements as part of the stormwater program, because the project would create or replace 5,000 square feet or more of impervious surface area on an already developed site, SUSMP and Site-Specific Stormwater Mitigation Plans must be incorporated into project plans. Compliance with these regulations would require the inclusion of post-construction stormwater measures and LID measures designed to minimize runoff flows and water quality degradation.

With compliance with the County's stormwater program, City of San Fernando and City of Los Angeles stormwater requirements, and the Industrial General Permit, impacts/effects on water quality during project operation would be less than significant under CEQA and minor adverse under NEPA.

4.1.5.2 Groundwater Supplies and Recharge

Operational impacts on groundwater for LRT alternatives, including the Low-Floor LRT/Tram Alternative, would be similar to those stated above for the BRT alternatives. The Low-Floor LRT/Tram Alternative would not result in substantially more impervious surface area than the BRT alternatives because the existing area that would be developed is currently mostly impervious. Therefore, groundwater recharge would not be substantially affected and impacts/effects would be less than significant under CEQA and minor adverse under NEPA.

4.1.5.3 Stormwater and Drainage

Operational impacts on drainage for the Low-Floor LRT/Tram Alternative, would be similar to those stated above for the BRT alternatives. Drainage would not be substantially altered from the existing pattern and no stream or river would be altered. Therefore impacts/effects would be less than significant and minor adverse under CEQA.

Adherence to the project's SUSMP, as described above, would ensure that the appropriate treatment BMPs are applied to the project so that there would not be additional sources of polluted runoff. Therefore, project operation impacts/effects on runoff would be less than significant under CEQA and minor adverse under NEPA.

4.1.5.4 Flooding and Flood Hazards

Similar to the BRT Alternatives, the 100-year flood zone areas within the project study area are fully contained within County flood channels and drainage facilities. In addition, operation of the Low-Floor LRT/Tram Alternative would not place structures that would impede or redirect flood flows as mapped on any flood hazard delineation map. Potential locations for 11 TPSSs were determined through an extensive search of aerial imagery in addition to multiple site visits to the project area. These structures would be protected from floodwaters. The stations for the Low-Floor LRT/Tram Alternative would be at grade. All existing as well as new stations and crosswalks would be located to keep pedestrians as much as possible away from stepping down or up at catch basins and deep gutter flows. The finish floor of the MSF and other occupied structures would be protected from floodwaters. Drainage systems would be prepared according to Metro's design criteria. Therefore, flood impacts/effects would be less than significant under CEQA and minor adverse under NEPA.

As stated above for the Curb-Running BRT Alternative, there are no levees located within the project study area, and therefore no associated flood impacts with levee failure would occur. However, the project alignment is located in an inundation zone area (see Figure 3-5), which would be caused by a dam failure. Portions of the Sepulveda and Hansen Flood Control Basins (and the associated dams) are located in the project study area, and therefore there is risk of dam failure. Although the Low-Floor LRT/Tram Alternative would be located within an inundation zone area, the project itself would not increase the present risk of dam failure. Additionally, new structures for human occupancy would be limited to new stations and the MSF. The MSF would be constructed on a site currently occupied by existing industrial uses. Although Low-Floor LRT/Tram Alternative would result in some new structures that could put property or persons at risk as a result of a dam or water storage facility failure, the risk of dam failure is considered to be low.

There would be no substantial increase in impervious area and overall drainage patterns would remain the same; therefore, flood capacities would not be affected. Furthermore, because the project is in a highly urbanized area, it's not anticipated that the project would indirectly result in substantial increases in population or employment densities within the project study area. Therefore, impacts/effects would be less than significant under CEQA and minor adverse under NEPA.

4.1.5.5 Seiche, Tsunami, and Mudflow Hazards

The project study area is outside of tsunami potential inundation areas and, due to the relatively flat terrain, is not prone to mudflows. The potential for a catastrophic seiche event at the Hanson Flood Control Basin reservoir is low. Therefore, similar to the BRT alternatives, impacts/effects due to the Low-Floor LRT/Tram Alternative would be less than significant under CEQA and minor adverse under NEPA.

4.1.5.6 Surface Water Use and Flows

Operation of the MSF would result in the use of water by MSF employees and for washing and maintaining the Low-Floor LRT/Tram Alternative vehicles at the MSF. Sources of water supplied to the City of Los Angeles include the Los Angeles aqueducts, local groundwater, and supplemental water purchased from the Metropolitan Water District of Southern California (MWD). Water is stored within the City in large open reservoirs. The net increase in water consumption due to the Low-Floor LRT/Tram Alternative would depend on the location of the MSF site that is selected and the amount of water that is consumed by existing uses on the site that would be demolished to construct the new MSF. Nonetheless, it's not expected that the proposed project, by itself, would increase water consumption to the extent required to result in an appreciable reduction in the amount of water in local City of Los Angeles reservoirs. Additionally, as noted above, the proposed Low-Floor LRT/Tram Alternative would not substantially change the overall impervious area; therefore, stormwater volumes are not anticipated to change. Therefore, the Low-Floor LRT/Tram Alternative would not appreciably reduce or increase the amount of surface water in surrounding water bodies nor would it result in a substantial adverse change in the current or direction of water flows. Therefore, impacts or effects would be less than significant under CEQA and minor adverse under NEPA.

4.1.6 Build Alternative 4 – LRT Alternative

Impacts of the LRT Alternative would be similar to the Low-Floor LRT/Tram Alternative noted above with the following exceptions.

4.1.6.1 Flooding and Flood Hazards

There is a potential for flooding at the underground stations proposed under the LRT Alternative. The stations for the LRT Alternative would be at grade except for three station structures, which would be constructed at least 25 to 50 feet below grade in some locations, and would be approximately 1,450 feet long from portal to portal. The subway tunnel portion of the LRT Alternative would be located north of Vanowen Boulevard and South of Parthenia Street. The portals of the stations would be designed to ensure their protection from floodwaters. With proper design, the impacts/effects would be less than significant under CEQA and minor adverse under NEPA.

4.2 Construction Impacts

4.2.1 No-Build Alternative

The No-Build Alternative would result in no project-related improvements and as a consequence it would not result in any construction impacts to water resources and water quality.

4.2.2 TSM Alternative

Any construction activities required under the TSM Alternative would be minimal (e.g., construction of bus stop amenities, signage); therefore, no or very minor construction impacts/effects would occur.

4.2.3 Build Alternative 1 – Curb-Running BRT Alternative

4.2.3.1 Water Quality

Construction activities for the Curb-Running BRT Alternative, as well as the Median-Running BRT Alternative, would include pavement removal, utilities relocation, excavation, and reconstruction of sidewalks, paving, and striping. The Curb-Running BRT Alternative could result in an increase in surface water pollutants such as sediment, oil and grease, and miscellaneous wastes from these construction activities. Water quality would be temporarily affected if disturbed sediments were discharged via existing stormwater collection systems. Increased turbidity and other pollutants resulting from construction-related discharges can ultimately introduce compounds toxic to aquatic organisms, increase water temperature, and stimulate the growth of algae.

The delivery, handling, and storage of construction materials and wastes, along with use of construction equipment, could also introduce the risk of stormwater contamination. Staging areas or building sites can be sources of pollution because of the storage and use of paints, solvents, cleaning agents, and concrete during construction. Larger pollutants, such as trash, debris, and organic matter, are additional pollutants that could be associated with construction activities. Without implementation and maintenance of BMPs, construction impacts on water quality are potentially significant under CEQA and adverse under NEPA and could lead to exceedance of water quality objectives or criteria.

Since construction activities would disturb more than 1 acre, the preparation and implementation of an SWPPP would be required, in accordance with the General Construction Permit. The SWPPP would list BMPs that would be implemented to protect stormwater runoff and include monitoring of BMP effectiveness. At a minimum, BMPs would include practices to minimize the contact of construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives, concrete) with stormwater. The SWPPP would specify properly designed, centralized storage areas that keep these materials covered or out of the rain. If land disturbance activities must be conducted during the rainy season, the primary BMPs selected would focus on erosion control (i.e., keeping sediment on the site) and construction activities would temporarily cease during rain events.

The SWPPP would specify BMPs to ensure that water quality standards or waste discharge requirements are not violated. BMPs selected would be designed to comply with the requirements of the RWQCB and may be subject to review and approval by the Cities of Los Angeles and San Fernando. BMPs during construction may include but not be limited to the following:

- Silt fence
- Fiber roll
- Street sweeping and vacuuming
- Stockpile management
- Vehicle and equipment maintenance
- Erosion control mats and spray-on applications
- Desilting basin
- Gravel bag berm
- Sandbag barrier
- Spill prevention and control
- Concrete waste management
- Water conservation practices

Such measures are routinely developed for construction sites and are proven to be effective in reducing pollutant discharges from construction activities. Implementation of the SWPPP during construction would ensure water quality objectives, standards, and wastewater discharge thresholds would not be violated. The SWPPP would be prepared by the project applicant (i.e., Metro) and approved by the Cities of Los Angeles and San Fernando prior to commencement of construction activities (i.e., approval of grading plans).

Other impacts to water quality that can occur during construction projects include the discharge of dredged or fill material into waters of the United States. These impacts could affect beneficial uses of the wetlands, such as estuarine and wildlife habitat. None of the alternatives, including the Curb-Running BRT Alternative, would require in-water work or work that would affect wetlands.

With compliance with the Construction General Permit, grading permits, and other relevant regulations, impacts/effects from construction on water quality would be less than significant under CEQA and minor adverse under NEPA.

4.2.3.2 Groundwater Supplies and Recharge

Existing utilities that would interfere with construction of the corridor improvements would be removed and relocated for continuing service. A geotechnical survey found that groundwater depths in the vicinity of the project alignment varied from 15 to more than 100 feet below the ground surface during the dry season, with depth to groundwater generally increasing from west to east. Excavation for utility improvements may result in contact with groundwater depending on the season and location within the corridor. Should dewatering be necessary, a General Dewatering Permit would be obtained from the Los Angeles RWQCB. Residual contaminated groundwater could be encountered during dewater activities. Groundwater extracted during dewatering activities would either be treated prior to discharge or disposed of at a wastewater treatment facility.

Local groundwater is one of several sources of water supplies to the City of Los Angeles. If groundwater is used during construction for dust control, concrete pouring, etc., the amount would be minimal and temporary, and therefore would not result in substantial depletion of groundwater supplies.

Adherence to dewatering requirements of the Los Angeles RWQCB, and minimal water use during construction would ensure that impacts on groundwater would be less than significant under CEQA and the effects would be minor adverse under NEPA.

4.2.3.3 Stormwater and Drainage

Construction activities, such as grading and excavation, could result in increased erosion. In addition, minor modifications to City street storm drains would be required. However, these modifications would not include culvert widening or conversion of open channels to closed conduits and drainage patters would remain approximately the same as currently exists. Additionally, construction of the proposed project would not alter the course of any streams or rivers.

Additionally, temporary drainage facilities could be required to redirect runoff from work areas during utility relocations. The temporary drainage facilities would be sized according to City standards to avoid any exceedance to the capacity of existing or planned stormwater drainage systems. Storm drain relocation may require the need for groundwater dewatering at locations with a high water table. Residual contaminated groundwater may be encountered during dewatering activities. As described above, if dewatering is necessary, the project contractor would be required to comply with

Los Angeles RWQCB's General Dewatering Permit. Groundwater extracted during dewatering activity would either be treated prior to discharge or disposed of at a wastewater treatment facility. In addition, compliance with the Construction General Permit, and SWPPP BMPs would be implemented during construction to prevent or minimize the potential for erosion sedimentation on- or off-site, and for discharge of polluted runoff into storm drains. Because the proposed project would be in compliance with the conditions of the Construction General Permit and other relevant regulations, impacts/effects related to erosion and siltation and impacts on stormwater runoff would be less than significant under CEQA and minor adverse under NEPA.

4.2.3.4 Flooding and Flood Hazards

As shown in Figure 3-4, a few small areas within the project study area were identified as being within the FEMA 100-year flood zone (Zone A). However, these areas are fully contained within County flood channels and drainage facilities. Therefore, the project study area is not highly prone to flooding during a 100-year storm event. Additionally, no construction would occur within the areas designated as 100-year floodplains, and construction activities would not place structures that would impede or redirect flood flows as mapped on any flood hazard delineation map.

There are no levees located within the project study area, and therefore no associated flood impacts with levee failure would occur. The proposed Curb-Running BRT Alternative, however, would be located in an inundation zone area, as shown on Figure 3-5, which would be caused by a dam failure. Portions of the Sepulveda and Hansen Flood Control Basins (and the associated dams) are located in the project study area, and therefore there is risk of dam failure. However, project construction activities would not increase the present risk of dam failure, which is considered low, and would not place construction workers, equipment, or temporary structures in an area where there is a significant risk and high probability of flooding.

As noted above, temporary drainage facilities could be required to redirect runoff from work areas. The temporary drainage facilities would be sized according to City standards to avoid any exceedance to the capacity of existing or planned stormwater drainage systems. As a consequence, overall drainage patterns would remain the same, and therefore, construction activities are not expected to have a substantial effect on flood capacities due to temporary changes in drainage patterns or facilities. Therefore, the impacts/effects during construction related to flooding and flood hazards would be less than significant under CEQA and minor adverse under NEPA.

4.2.3.5 Seiche, Tsunami, and Mudflow Hazards

As noted above, the project study area is outside of tsunami potential inundation areas and, due to the relatively flat terrain, is not prone to mudflows. The potential for a catastrophic seiche event at the Hanson Flood Control Basin reservoir is low. Therefore, construction activities are not expected to substantially affect or be affected by seiche, tsunami, or mudflow hazards. Construction impacts/effects due to the Curb-Running BRT Alternative would be less than significant under CEQA and minor adverse under NEPA.

4.2.3.6 Surface Water Use and Flows

Construction of the BRT alternatives, including the Curb-Running BRT Alternative, would not require the use of substantial volumes of surface water. Additionally, construction activities would not substantially change the overall impervious area, nor would construction substantially change stormwater flows that could affect either the volume or movement of water in surface water bodies. Impacts and effects would be less than significant under CEQA and minor adverse under NEPA.

4.2.4 Build Alternative 2 – Median-Running BRT Alternative

The construction impacts of the Median-Running BRT Alternative would be similar to those described above for the Curb-Running BRT Alternative.

4.2.5 Build Alternative 3 – Low-Floor LRT/Tram Alternative

4.2.5.1 Water Quality

Construction activities for the Low-Floor LRT/Tram Alternatives would include pavement removal; utilities relocation; excavation; construction of at-grade trackwork and stations, including station platforms and reconstruction of sidewalks; construction of pedestrian access ways; installation of specialty system work, such as overhead contact electrification systems and communications and signaling systems; construction of TPSS facilities; reconstruction of sidewalks paving and striping; and subgrade preparation and placement of rail ballast. Similar to the BRT alternatives, construction of the Low-Floor LRT/Tram Alternative could result in an increase in surface water pollutants such as sediment, oil and grease, and miscellaneous wastes from construction activities. Because the Low-Floor LRT/Tram Alternative also includes the construction of a new MSF and the relative area of soil disturbance would be greater to install the tracks and construct the stations, the potential for water quality degradation is greater than for the BRT alternatives. However, the General Construction Permit would still apply and a SWPPP would be developed. The SWPPP would specify BMPs to ensure that water quality standards or waste discharge requirements are not violated even for a larger area of disturbance.

As discussed above for the Curb-Running BRT Alternative, SWPPPs and the associated BMPs are routinely developed for construction sites and are proven to be effective in reducing pollutant discharges from construction activities. Implementation of the SWPPP during construction would ensure water quality objectives, standards, and wastewater discharge thresholds would not be violated. The SWPPP would be prepared by the project applicant (i.e., Metro) and approved by the City of Los Angeles and City of San Fernando prior to commencement of construction activities. As selection of the appropriate BMPs is a standard process of the engineering review and grading plan approval, impacts/effects from construction on water quality would be less than significant under CEQA and minor adverse under NEPA.

None of the alternatives, including the Low-Floor LRT/Tram Alternative, would require in-water work or work that would affect wetlands.

4.2.5.2 Groundwater Supplies and Recharge

The Low-Floor LRT/Tram Alternative may require excavation to greater depths than what is required for the BRT alternatives in order to relocate utilities or construct LRT facilities including the MSF. Excavation may result in contact with groundwater depending on the season and location within the corridor. Should dewatering be necessary, a General Dewatering Permit would be obtained from the Los Angeles RWQCB. Residual contaminated groundwater could be encountered during dewater activities. Groundwater extracted during dewatering activities would either be treated prior to discharge or disposed of at a wastewater treatment facility.

Local groundwater is one of several sources of water supplies to the City of Los Angeles. If groundwater is used during construction for dust control, concrete pouring, etc., the amount would be greater than required for the BRT alternatives but still relatively minimal and temporary, and therefore would not result in substantial depletion of groundwater supplies.

Adherence to dewatering requirements of the Los Angeles RWQCB, and minimal water use during construction would ensure that impacts on groundwater would be less than significant under CEQA and the effects would be minor adverse under NEPA.

4.2.5.3 Stormwater and Drainage

As discussed above for the Curb-Running BRT Alternative, construction activities, such as grading and excavation, could result in increased erosion that could adversely affect the water quality of stormwater runoff from the construction sites. There would be relatively more grading and excavation for the Low-Floor LRT/Tram Alternative than for the BRT alternatives. However, the proposed project would be in compliance with the Construction General Permit, and a SWPPP that contains temporary construction site BMPs would be prepared and implemented. These BMPs would be implemented during construction to prevent, or minimize the potential for erosion sedimentation onsite or offsite, impacts to the water quality of stormwater runoff, and the potential for flooding on- or off-site. Because the proposed project would be required to comply with the conditions of the Construction General Permit, impacts/effects would be less than significant under CEQA and minor adverse under NEPA.

Temporary drainage facilities could be required to redirect runoff from work areas during utility relocations. The temporary drainage facilities would be sized according to City standards to avoid any exceedance to the capacity of existing or planned stormwater drainage systems. Storm drain relocation may require the need for groundwater dewatering at locations with a high water table. Residual contaminated groundwater may be encountered during dewatering activities. As described above for the Curb-Running BRT Alternative, if dewatering is necessary, the project contractor would be required to comply with Los Angeles RWQCB's General Dewatering Permit.

4.2.5.4 Flooding and Flood Hazards

Similar to the BRT Alternatives, the 100-year flood zone areas within the project study area are fully contained within County flood channels and drainage facilities. No construction is proposed in these 100-year flood zones; therefore, construction of the Low-Floor LRT/Tram Alternative would not place structures that would impede or redirect flood flows as mapped on any flood hazard delineation map.

There are no levees located within the project study area, and therefore no flood impacts associated with levee failure would occur that could affect construction activities, workers, or equipment. The proposed Low-Floor LRT/Tram Alternative, however, would be located in an inundation zone area, as shown on Figure 3-5, which would be caused by a dam failure. Portions of the Sepulveda and Hansen Flood Control Basins (and the associated dams) are located in the project study area, and therefore there is risk of dam failure. However, project construction activities would not increase the present risk of dam failure, which is considered low, and would not place construction workers, equipment, or temporary structures in an area where there is a significant risk and high probability of flooding.

As noted above for the Curb-Running BRT Alternative, temporary drainage facilities could be required to redirect runoff from work areas. The temporary drainage facilities would be sized according to City standards to avoid any exceedance to the capacity of existing or planned stormwater drainage systems. As a consequence, overall drainage patterns would remain the same, and therefore, construction activities are not expected to have a substantial effect on flood capacities due to temporary changes in drainage patterns or facilities. Therefore, the construction impacts/effects during construction related to flooding and flood hazards would be less than significant under CEQA and minor adverse under NEPA.

4.2.5.5 Seiche, Tsunami, and Mudflow Hazards

The project study area is outside of tsunami potential inundation areas and, due to the relatively flat terrain, is not prone to mudflows. The potential for a catastrophic seiche event at the Hanson Flood Control Basin reservoir is low. Therefore, construction activities are not expected to substantially affect or be affected by seiche, tsunami, or mudflow hazards. Construction impacts/effects due to the Low-Floor LRT/Tram Alternative would be less than significant under CEQA and minor adverse under NEPA.

4.2.5.6 Surface Water Use and Flows

Construction of the Low-Floor LRT/Tram Alternative would require use of more water than the BRT alternatives because of construction of an MSF; however, the amounts are not expected to be substantial and they would be temporary. As a consequence, construction activities are not expected to substantially reduce the amount of surface water in water bodies. Additionally, construction activities would not substantially change the overall impervious area, nor would construction substantially change stormwater flows that could affect either the volume or movement of water in surface water bodies. Impacts and effects would be less than significant under CEQA and minor adverse under NEPA.

4.2.6 Build Alternative 4 – LRT Alternative

Construction of the LRT Alternative would result in impacts similar to those described above for the Low-Floor LRT/Tram Alternative with the exceptions noted below.

4.2.6.1 Groundwater Supplies and Recharge

The LRT Alternative, includes underground stations, which would require excavation, and a tunnel under the Pacoima Wash. As shown in Figure 3-3, high groundwater elevations at this location range from approximately 120 feet below ground surface at the northern portal of the tunnel to approximately 60 feet below ground surface near Sherman Way at the southern portal of the tunnel.

Dewatering will likely be required for the underground stations and could potentially be required for utility relocation or replacement depending on local groundwater levels. As discussed previously, residual contaminated groundwater could be encountered during dewater activities. The project contractor would be required to comply with Los Angeles RWQCB General Dewatering General Permit. Groundwater extracted during dewatering activity would either be treated prior to discharge or disposed of at a wastewater treatment facility.

Adherence to dewatering requirements of the Los Angeles RWQCB, and minimal water use during construction would ensure that impacts on groundwater would be less than significant under CEQA and the effects would be minor adverse under NEPA.

4.3 Cumulative Impacts

The study area for this cumulative impacts discussion is located in the San Fernando Valley in Los Angeles County and generally encompasses the area from Ventura Boulevard in the south, in the City of Los Angeles, to the City of San Fernando and the Sylmar/San Fernando Metrolink station in the north. The East San Fernando Valley Transit Corridor Project study area is located in the San Fernando Valley in Los Angeles County. Generally, the project study area extends from the City of San Fernando and the Sylmar/San Fernando Metrolink Station in the north to the Van Nuys Metro Orange Line Station within the City of Los Angeles in the south. The project alignment is on Van Nuys Boulevard for 6.7 miles and on San Fernando Road for 2.5 miles.

The analysis of water resources cumulative impacts is based on the list of related projects that has been developed for this study.

There were no impacts identified for the No-Build and TSM Alternatives, and no further discussion is required. All of the build alternatives would result in generally similar contributions to cumulative impacts and are discussed together below.

4.3.1 Water Quality

Development of the project and other development within the study area would potentially degrade stormwater quality by contributing pollutants during construction and operation. Stormwater quality varies according to surrounding land uses, impervious surface area, and topography, as well as with the intensity and frequency of rainfall or irrigation. Runoff can contain grease, oil, and metals accumulated in streets and driveways, as well as sediment and other particulates, animal waste, pesticides, herbicides, fertilizer, and trash.

Cumulative development could affect water quality if the land use change, the intensity of land use changes, and/or drainage is altered such that the introduction of pollutants to surface water or groundwater is facilitated. Land use changes would potentially alter the type and concentration of pollutants in stormwater runoff, and increased intensity of land use would potentially increase pollutant concentrations. The most common sources of stormwater pollutants in urban areas are from construction sites, streets, parking lots, large landscaped areas, and household and industrial materials dumped into storm drains.

When the effects of the project on water quality are considered in combination with the potential effects of other projects in the area, there would be the potential for cumulative impacts to surface, stormwater and groundwater quality. The incremental water quality impact contribution from implementation of the project would be minor for the reasons as discussed above. The combined effects on water quality from the project and other projects in the study area could result in a cumulatively significant impact. However, new projects within the study area are subject to the requirements of the associated Los Angeles MS4 Permit, the Construction General Permit, and the City municipal codes as they relate to water quality; these regulatory requirements have been designed to be protective of water quality. Additionally, development projects would be subject to an environmental review process, which would identify potential site- and/or project-specific water quality impacts, and any feasible measures to mitigate potential significant impacts. Adherence to regulatory and permit requirements would minimize the proposed and related project's adverse water quality impacts. Therefore, there would be a less than significant cumulative impact on water quality as a result of project implementation.

4.3.2 Groundwater Supplies and Recharge

The study area is located in the San Fernando Valley groundwater subbasin, which generally flows eastward, parallel to the course of the Los Angeles River. Because the area is heavily developed, cumulative projects would likely be in-fill development. Cumulative development would not be expected to substantially increase the amount of impervious surfaces, so groundwater recharge potential from percolating rainfall would not be adversely affected, and indirect lowering of the local groundwater table is not likely to occur. As a result, groundwater recharge would not be adversely affected. The project's contribution to cumulative groundwater recharge impacts would not be cumulatively considerable, and there would be a less than significant cumulative impact.

4.3.3 Stormwater and Drainage

Cumulative development in the study area could increase the volume and rate of stormwater runoff. Such increases could cause localized flooding if the storm drainage capacity is exceeded or if flows exceed channel capacities and are conveyed to overbank areas where flood storage may not be available. For the most part, the cumulative projects in the study area would occur in developed areas with impervious surfaces, and these projects would not be expected to substantially increase the amount of impervious surfaces. All cumulative projects within the study area would be required to include design features to reduce flows to pre-project conditions. If improvements to storm drainage capacity are needed, the project applicants would be required to coordinate with local City agencies to ensure the appropriate conditions of approval for storm drainage improvements are identified. Therefore, the proposed project would not likely contribute to the cumulative exceedance of the study area's storm drainage capacity, and there would be a less than significant cumulative impact.

4.3.4 Flooding and Flood Hazards

Cumulative development in the study area could increase the exposure of people and structures to flood risks if County flood channels or dams in the project area failed. However, the potential for failure of these channels or dams is considered low. Therefore, the proposed project would not contribute to a cumulative exposure of people and structures to risks of flooding, and there would be a less than significant cumulative impact.

Chapter 5
Mitigation Measures

5.1 Compliance Requirements and Design Features

Adherence to the regulatory and permit requirements governing water quality and local hydrology described in Chapter 2 and referenced in the impacts discussions in Chapter 4 above would minimize and reduce potential impacts to less than significant.

5.1.1 Project Stormwater Design Measures

Post-construction measures and solutions to capture and treat surface runoff from areas disturbed and affected by construction activities will be required during the final design phase of the project. Also, treatment of off-site surface runoff will be required (current County of Los Angeles Department of Public Works guidelines require the consideration of treatment of off-site surface runoff onto and through the project corridor). This consideration should be resolved with the agency.

5.2 Operational Mitigation Measures

None required.

5.3 Construction Mitigation Measures

None required.

Chapter 6
Impacts Remaining After Mitigation

Compliance with permit and regulatory requirements would reduce all potential impact to a less-than-significant level.

Chapter 7
CEQA Determination

The proposed project alternatives would result in less-than-significant impacts to hydrology and water resources during construction and operation of the proposed project.

Chapter 8
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