3.9 Hydrology and Water Quality

3.9.1 Introduction

This section discusses the Project setting in relation to hydrology and water resources. It describes existing conditions, current applicable regulatory setting, and potential impacts from construction and operation of the Build Alternatives, including design options and MSF site options. Information in this section is based on the Eastside Transit Corridor Phase 2 Hydrology and Water Quality Impacts Report (Appendix J).

3.9.2 Regulatory Framework

This section describes federal, state, regional, and local regulations and requirements related to potential water quality and supply, flooding, and hydrology impacts. Permits may be required during operation and construction of the Build Alternatives in order to comply with applicable regulations. Permits that may be required for operation and construction of the Build Alternatives are outlined in Section 3.0 of Appendix J.

3.9.2.1 Federal

3.9.2.1.1 Clean Water Act

The Clean Water Act (CWA) of 1972 establishes the basic structure for regulating discharges of pollutants into waters of the United States (U.S.) and gives the United States Environmental Protection Agency (USEPA) the authority to implement pollution control programs. In most states, USEPA has delegated this authority to state agencies. In California, the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs) implement these programs. The Project is within the jurisdiction of the Los Angeles Regional Water Quality Control Board (LARWQCB).

Section 301 of the CWA prohibits the discharge of any pollutant into waters of the U.S. without authorization under specific provisions of the CWA, including CWA Sections 402 and 404, which are discussed below.

Section 303(d) of the CWA requires states to develop a list of water quality-impaired segments of waterways. The 303(d) list includes water bodies that do not meet water quality standards for the specified beneficial uses of that waterway. The law requires that these jurisdictions establish priority rankings for water bodies on their 303(d) lists and implement a process, called Total Maximum Daily Loads (TMDLs), to meet water quality standards. The TMDL establishes the maximum allowable loadings of a pollutant that can be assimilated by a waterbody while still meeting applicable water quality standards. TMDLs are intended to address all significant stressors that cause or threaten to cause impairments to beneficial uses. States are required to include approved TMDLs and associated implementation measures in state water quality management plans. Within California, TMDL implementation is achieved through regional Basin Plans.

Section 401 of the CWA requires projects permitted under CWA Section 404 (described below) to obtain a Water Quality Certification. In California, the SWRCB and RWQCBs are responsible for reviewing proposed projects and issuing Water Quality Certifications. Construction of Alternative 1 in the Rio Hondo and San Gabriel River would require a permit under Section 404 and therefore, would also require a Water Quality Certification.

Section 402 of the CWA establishes the National Pollutant Discharge Elimination System (NPDES) permit process, which provides a regulatory mechanism for the control of point source discharges—a municipal or industrial discharge at a specific location or pipe—to waters of the U.S. The NPDES program also regulates: 1) diffuse source discharges caused by general construction activities over 1 acre; and 2) stormwater discharges in municipal stormwater systems where runoff is carried through a constructed system to specific discharge locations. These permits are discussed in further detail in **Section 3.9.2.2.4** and **Section 3.9.2.3.1.**

Section 404 of the CWA requires a permit from the United States Army Corps of Engineers (USACE) for discharge of dredged or fill material into wetlands and waters of the U.S. (33 U.S. Code of Federal Regulations [CFR] 328.3(a)). Placement of bridge piers in the Rio Hondo or San Gabriel River would be considered discharge of fill into waters of the U.S. and would require a 404 permit. Specific permitting requirements would be determined once specific construction plans and phasing are determined.

3.9.2.1.2 Rivers and Harbors Appropriation Act of 1899

Under Section 14 of the Rivers and Harbors Act (RHA) of 1899, the USACE may grant permission for the temporary occupation or use of any seawall, bulkhead, jetty, dike, levee, wharf, pier, or other work built by the United States (33 United States Code [U.S.C.] Section 408). Alterations or modifications that require approval under 33 U.S.C. Section 408 include degradation, raising, realignment, and other alteration or modification of a flood protection system (USACE 2008). Alternative 1 would involve construction in federally authorized flood control areas (Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River Channel). Construction in these areas would require USACE to determine that the work would not be injurious to the public interest and would not impair the usefulness of the flood damage reduction project.

3.9.2.1.3 Executive Order 11988: Floodplain Management

Under Executive Order 11988, all federal agencies are directed to avoid to the extent possible long- and short-term adverse impacts associated with the occupancy and modification of floodplains. In addition, federal agencies should avoid direct or indirect support of floodplain development wherever there is a practicable alternative. Construction of the Build Alternatives has the potential to occur in Federal Emergency Management Agency (FEMA)-designated 100-year and 500-year floodplains (described in further detail in **Section 3.9.5.5**; also see **Figure 3.9.3**). The 100-year floodplain is defined as areas that will be inundated by the flood event having a 1 percent chance of being equaled or exceeded in any given year and corresponds to flood zones A, AE, and AH on **Figure 3.9.3**. The 500-year floodplain is defined as areas that will be inundated by the flood event having a 0.2 percent chance of being equaled or exceeded in any given year and corresponds to flood zone X, shaded (500-year floodplain) on **Figure 3.9.3**.

FEMA provides floodplain information to allow local jurisdictions to regulate development in and around floodplains through Flood Insurance Studies and their associated Flood Insurance Rate Maps (FIRMs).

Section 3.9.5.5 provides specific information about the location of floodplains in the vicinity of the proposed alternative alignments, stations, parking facilities, and MSFs.

3.9.2.1.4 National Flood Insurance Program

In order to determine the necessity to comply with National Flood Insurance Program (NFIP) regulations, FEMA issues countrywide FIRMs delineating the limits of FEMA-defined flood zones throughout the county. The 100-year floodplain is defined as areas that will be inundated by the flood event having a 1 percent chance of being equaled or exceeded in any given year and corresponds to flood zones A, AE, and AH. The 500-year floodplain is defined as areas that will be inundated by the flood event having a 0.2 percent chance of being equaled or exceeded in any given year and corresponds to flood zone X, shaded (500-year floodplain) on **Figure 3.9.3**.

3.9.2.2 State

The SWRCB and the nine RWQCBs are responsible for the protection of water quality in California. The SWRCB establishes statewide policies and regulations mandated by federal and state water quality statutes and regulations. The RWQCBs are responsible for developing and implementing Water Quality Control Plans (Basin Plans), implementing the Porter-Cologne Water Quality Control Act, and issuing Water Quality Certifications pursuant to Section 401 of the CWA. Additionally, all projects resulting in waste discharges, whether to land or water, are subject to Section 13263 of the California Water Code. Dischargers are required to comply with Waste Discharge Requirements (WDRs) as developed by the RWQCB. WDRs for discharges to surface waters must meet requirements for related NPDES permits. These laws are further described below.

3.9.2.2.1 Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1969 (Act) established the principal California program for water quality control. The Act regulates discharges to surface and groundwater and directs the RWQCBs to develop regional Basin Plans that achieve the following: 1) designate beneficial uses for surface and ground waters; 2) set narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's antidegradation policy; and 3) describe implementation programs to protect all waters in the region (LARWQCB 2014).

3.9.2.2.2 California Fish and Game Code Section 1602

Section 1602 of the California Fish and Game Code, administered by the California Department of Fish and Wildlife (CDFW), mandates that "it is unlawful for any person to substantively divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds, without first notifying the department of such activity." Streambed alteration must be permitted by CDFW through a Lake or Streambed Alteration Agreement.

3.9.2.2.3 State Antidegradation Policy

The state Antidegradation Policy was adopted by SWRCB to maintain high quality waters in California. The policy requires that any activity producing a waste or increased volume or concentration of waste that discharges into high quality waters will be required to meet WDRs to control the discharge and assure that degradation of the existing water quality will not occur (SWRCB 1968). Potentially applicable WDRs are described under **Section 3.9.2.3.2**.

3.9.2.2.4 National Pollutant Discharge Elimination System

In accordance with CWA Section 402(p), which regulates municipal and industrial stormwater discharges under the NPDES program, SWRCB adopted an Industrial General Permit and Construction General Permit. Metro would be responsible for compliance with both of these NPDES permits.

The CWA requires that stormwater associated with industrial activities that discharge either directly to surface waters or indirectly through municipal storm sewers must be regulated by an NPDES permit (Water Quality Order No. 2014-0057-DWQ as amended in 2015 and 2018) (SWRCB 2018). There are 11 categories of regulated industrial activities. The Project would be subject to Category 8, which includes transportation facilities that have "vehicle maintenance shops, equipment cleaning operations, or airport deicing operations." Operation of the MSF involving vehicle maintenance would be covered under this permit and would require Metro to submit a Notice of Intent (NOI) to the LARWQCB.

The SWRCB also administers the Construction General Permit, which is applicable to all stormwater discharges associated with construction activity (Order #2012-0006-DWQ). The main objectives of the Construction General Permit are erosion and sediment discharges from construction sites, preventing construction materials from contacting stormwater, preventing unauthorized discharges from construction sites, implementing sampling and analysis programs, and establishing maintenance commitments on post-construction pollution control measures. The Construction General Permit requirements apply to any construction project that results in the disturbance of 1 acre of land or greater or that is part of a larger common development plan. More information about application requirements, best management practices (BMPs), and monitoring requirements is provided in Appendix J.

3.9.2.2.5 Alquist-Priolo Earthquake Fault Zoning Act and Seismic Hazards Mapping Act of 1990

The 1972 Alquist-Priolo Earthquake Fault Zoning Act prohibits structures for human occupancy from being placed across the trace of an active fault (California Department of Conservation 2019). The state's Seismic Hazards Mapping Act (1990) requires the State Geologist to compile maps that identify and describe the seismic hazard zones in California. These policies are important in relation to water resources given the potential hazards of dam failure/inundation caused by strong earthquake ground shaking or a seiche event, and associated erosion or flooding.

3.9.2.2.6 Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA), adopted in 2014, provides a framework for regulating groundwater in California. The intent of the law is to strengthen local groundwater management of basins most critical to the state's water needs. SGMA requires basins to be sustainably managed by local public agencies who become groundwater sustainability agencies. The primary purpose of the groundwater sustainability agencies is to develop and implement a Groundwater Sustainability Plan for basins designated as high and medium priority to achieve long-term groundwater sustainability. There are no relevant sustainable groundwater management plans for the groundwater basins underlying the DSAs, as discussed in **Section 3.9.5.3.1**.

3.9.2.3 Regional

3.9.2.3.1 NPDES Permits

LARWQCB is responsible for issuing the Los Angeles County Municipal Storm Water Permit (Order No. R4-2012-0175, NPDES No. CAS-004001, as amended by State Water Board Order WQ 2015-0075 and Los Angeles Water Board Order R4-2012-0175-A01, and as modified by LARWQCB). The existing permit covers the Los Angeles County Flood Control District (LACFCD), Los Angeles County, and 84 incorporated cities within the coastal watersheds of Los Angeles County, including the cities and unincorporated county in the DSAs (LARWQCB 2016). The permit covers the permittees for discharges of stormwater and urban runoff from municipal separate storm sewer systems (MS4s). This Order also serves as Waste Discharge Requirements.

The objectives of MS4 permits are to prohibit non-stormwater discharges through MS4s to the region's waterways, to reduce the discharge of pollutants in stormwater to the maximum extent practicable, and to implement other pollutant controls as necessary to achieve water quality standards (LARWQCB 2014). The current MS4 permit allows permittees to develop Watershed Management Programs (WMP) or Enhanced Watershed Management Programs (EWMP) to implement MS4 permit requirements, through BMPs, control measures, and customized strategies targeted at the watershed level. The current MS4 permit imposes basic programs, or minimum control measures, that mitigate stormwater quality issues. These programs and measures are discussed in more detail in Appendix J.

3.9.2.3.2 Waste Discharge Requirements

SWRCB's Waste Discharge Requirements for Specified Discharges to Groundwater in Santa Clara and Los Angeles River Basins (Order No. 93-010) "regulates all point source discharges of waste to land that do not require full containment or are not subject to the NPDES program" (SWRCB 2019). This WDR allows for the discharge of water resulting from construction dewatering and dust control application that may occur during construction. The WDR requires that wastewater be analyzed prior to being discharged in order to determine if it contains pollutants in excess of the applicable Basin Plan Water Quality Objectives. Additionally, any wastewater that might be encountered and subsequently discharged to groundwater will need to comply with applicable water quality standards. This WDR applies to the Build Alternatives during construction.

3.9.2.3.3 Basin Plan

The Basin Plan that applies to the DSAs is the *Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (*LA Basin Plan*) (LARWQCB 2014). The *LA Basin Plan* sets forth the regulatory water quality standards for surface waters and groundwater within the region. The water quality standards address the designated beneficial uses for each water body and the narrative and numeric water quality objectives to meet those designated beneficial uses. Where multiple designated beneficial uses exist, water quality standards are written to protect the most sensitive use. Also, the *LA Basin Plan* identifies implementation programs and actions to meet the water quality objectives and monitoring and assessment methods.

3.9.2.3.4 Total Maximum Daily Loads

In accordance with the federal CWA and the state Porter-Cologne Water Quality Control Act, TMDLs have been developed and incorporated into the *LA Basin Plan* for pollutants identified on the 303(d) list as causing contamination in the Los Angeles and San Gabriel River Watersheds. TMDLs are

discussed in **Section 3.9.2.1.1**. The Rio Hondo Watershed has established TMDLs for coliform bacteria, indicator bacteria, pH, trash, lead, copper, and zinc, and the San Gabriel River has established TMDLs for indicator bacteria, copper, lead, and trash (LARWQCB 2017).

3.9.2.3.5 Watershed Management and Enhanced Watershed Management Programs

According to the most current MS4 Order, the ultimate goal of the WMP and EWMP is to ensure that "discharges from the Los Angeles County MS4: (i) achieve applicable water quality-based effluent limitations that implement TMDLs, (ii) do not cause or contribute to exceedances of receiving water limitations, and (iii) for non-stormwater discharges from the MS4, are not sources of pollutants to receiving waters." The WMP allows permittees to develop and customize control measures to address water quality issues within their watershed management areas. Plans relevant to the DSAs include the Upper Los Angeles River Watershed's EWMP, approved in 2016, the Lower San Gabriel River WMP, approved in 2015 and modified in 2017, and the Los Angeles River Upper Reach 2 Coordinated Integrated Monitoring Program, approved in 2016 (LARWQCB 2019b).

3.9.2.4 Local

Los Angeles County and the cities within the DSAs have local regulations pertaining to the protection of water resources and low impact development (LID) standards, which promote the use of naturalistic, on-site BMPs to lessen the impacts of development on stormwater quality and quantity. These regulations include general plan policies, ordinances, and municipal codes of Los Angeles County, and the cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier. Additionally, Los Angeles County prepared the 2014 *Low Impact Development Standards Manual* (LACDPW 2014) to provide guidance for the implementation of stormwater quality control measures in new development and redevelopment projects in unincorporated areas of the county.

Local regulations also seek to protect public safety from flood hazards. Alternative 1 crosses the Rio Hondo, the Rio Hondo Spreading Grounds, and the San Gabriel River, within the cities of Montebello and Pico Rivera, and Los Angeles County. Applicable floodplain regulations of these jurisdictions are described in more detail below.

Several sections of the Los Angeles County Code pertain to floodplain development, including the following:

- Title 11, Chapter 11.60, Floodways, Water Surface Elevations, and Areas of Special Flood Hazard: Defines the floodways and areas of special flood hazard in Los Angeles County that are subject to floodway development regulations defined in the code. The code adopts FEMA's special flood hazard areas shown in FEMA FIRMs covering Los Angeles County (Los Angeles County 2018).

- Title 26, Chapter 1, Section 110.1, Flood Hazard: Establishes construction standards for development and establishes that development must not increase flood hazards in adjacent areas by any of the following mechanisms: increasing flood water surface elevations, deflecting flows, or increasing erosion (Los Angeles County 2019b).

- Title 22, Chapter 22.118 Flood Control: Defines permit requirements for any work that would create flood hazards. Includes regulations prohibiting the obstruction of stream or river flow during work along natural waterways, including the Rio Hondo and San Gabriel River (Los Angeles County 2019a).

The city of Montebello's floodplain code (Title 15, Buildings and Construction, Chapter 15.40) governs flood damage prevention and floodplain management. This chapter provides regulations and construction standards for development in the floodplain and in special flood hazard areas within the city. Chapter 15.40 includes a provision that development in the regulatory floodway must not result in increased base flood elevations during base flood discharge (City of Montebello 1998).

The city of Pico Rivera's floodplain code (Title 15, Buildings and Construction, Chapter 15.50, Floodplain Management) describes floodplain management regulations and standards of construction for the protection of new construction from flooding hazards. This chapter includes a regulation that states that development in the regulatory floodway cannot increase base flood elevations by more than one foot during the base flood discharge (City of Pico Rivera 2016).

Metro has developed procedures and standards to protect water quality and conserve water. Metro has developed procedures dictating the use of potable water and conservation (Metro 2009). Applicable procedures relating to water use and conservation required by Metro include: Procedure 2.1 – Using Potable Water for Pressure Washing Activities and Procedure 2.2 – Using Potable Water for Construction. Metro Rail Design Criteria (MRDC), which are used in the design of Metro Rail Transit Projects and related work, can help provide protection for water resources and quality. For example, MRDC Section 3, Civil (Metro 2017), includes criteria for the design of transit system alignments, trackway subgrade, drainage, determination of rights-of-way, control of access, service roads, and relocation of any utilities; Section 8, Mechanical/Plumbing (Metro 2016a), describes criteria for the design of plumbing and drainage systems serving the Los Angeles area heavy and LRT system passenger stations and tunnels; and Section 11, Yards and Maintenance (Metro 2014), provides requirements for MSF design for shop, waste disposal, and other MSF facilities.

More information about local policies and ordinances is available in Appendix J.

3.9.3 Methodology

The water resources study area is the DSA for each of the Build Alternatives (i.e., DSAs). In order to determine potential impacts on water resources during operation and construction, existing data on surface and groundwater resources, drainage patterns, water quality, water supply, and flooding/inundation hazards are evaluated. Additionally, existing water quality conditions and identified beneficial uses in the watersheds associated with the DSAs are assessed.

For operations, the potential impacts associated with increases in polluted stormwater runoff, increases in impervious surfaces throughout the DSAs (resulting in decreased infiltration to groundwater), and surface water and groundwater contamination are analyzed in relation to applicable permits and regulations.

During construction, the potential impacts associated with stormwater runoff, construction in or near waters of the U.S. or waters of the state, floodplain impacts, and impacts on existing drainage infrastructure are evaluated. Additionally, each of the Build Alternatives is analyzed for potential

construction-related surface water sedimentation impacts generated by erosion and runoff from construction staging areas.

Additional issues evaluated include possible groundwater contamination resulting from construction of the Build Alternatives. Proposed construction components requiring permits are discussed in **Section 3.9.6**. The applicability and the ability to comply with each of these requirements was analyzed for each of the Build Alternatives.

In May 2016, field investigations were conducted to identify waters of the U.S. and waters of the state and determine the ordinary high-water mark (OHWM) of streams and rivers within or near the DSAs, as well as wetlands and state-regulated riparian areas. Current conditions were reviewed via aerial photography in spring 2021 and site visits were conducted in March and April 2021, to determine if site conditions have changed since the May 2016 field investigation. No changes in current conditions were identified that indicated any changes in the OHMW may have occurred.

3.9.4 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, an alternative would have a significant impact related to hydrology or water quality if it would:

Impact HWQ-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.

Impact HWQ-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

Impact HWQ-3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

- **i) Result in a substantial erosion or siltation on- or off-site,**
- **ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site,**
- **iii) Exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or**
- **iv) Impede or redirect flood flows.**

Impact HWQ-4: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

Impact HWQ-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

3.9.5 Existing Setting

3.9.5.1 Watershed Setting and Local Surface Water Bodies

The watersheds in the region experience extended periods of dry weather with an annual average rainfall of 15.7 inches (LARWQCB 2014). Rainfall amounts throughout the county vary substantially with the San Gabriel Mountains receiving an annual average of 34.2 inches and the coastal plain receiving 13.7 inches annually (LARWQCB 2014). The watersheds within the DSAs are discussed below. The watersheds are shown on **Figure 3.9.1** and described in **Section 3.9.5.1**. In relation to groundwater resources, the Central Subbasin of the Coastal Plain of Los Angeles underlies the DSAs as described in **Section 3.9.5.3**. More detailed information about these watersheds is provided in Appendix J.

3.9.5.1.1 Los Angeles River Watershed

The portion of the Alternatives 1 and 3 along Atlantic Boulevard, the entire Alternative 2, and both MSF options are located in the Los Angeles River Watershed. There are no surface waters associated with the Los Angeles River Watershed in the DSAs.

3.9.5.1.2 Rio Hondo Sub-Watershed

Alternative 1 from Greenwood Avenue to Rosemead Boulevard, and the portion of the Alternative 3 from Greenwood Avenue to its terminus at the Greenwood station, are located in the Rio Hondo Watershed (see **Figure 3.9.1**). The Rio Hondo is a sub-watershed of the Los Angeles River Watershed. It is also hydraulically connected to the San Gabriel River because, during major flood events, flows from the two rivers merge within the Whittier Narrows Reservoir to the north (upstream) of Alternative 1 (USACE 2011).

Although the Rio Hondo Watershed is largely developed, it is an important resource for groundwater recharge and the replenishment of potable groundwater supplies (GLAC 2014). Historically, the Rio Hondo formed the main bed of the San Gabriel River. Today, this area is highly engineered with channels that bring water from the San Gabriel River to the Rio Hondo to recharge of groundwater at the Rio Hondo Spreading Grounds (San Gabriel Valley Council of Governments 2004). The Rio Hondo Spreading Grounds are the largest and most effective spreading grounds in the county and are located along Alternative 1, as shown in **Figure 3.9.2** (San Gabriel Valley Council of Governments 2004). In the vicinity of Alternative 1, the Rio Hondo is channelized with a concrete bottom and side walls.

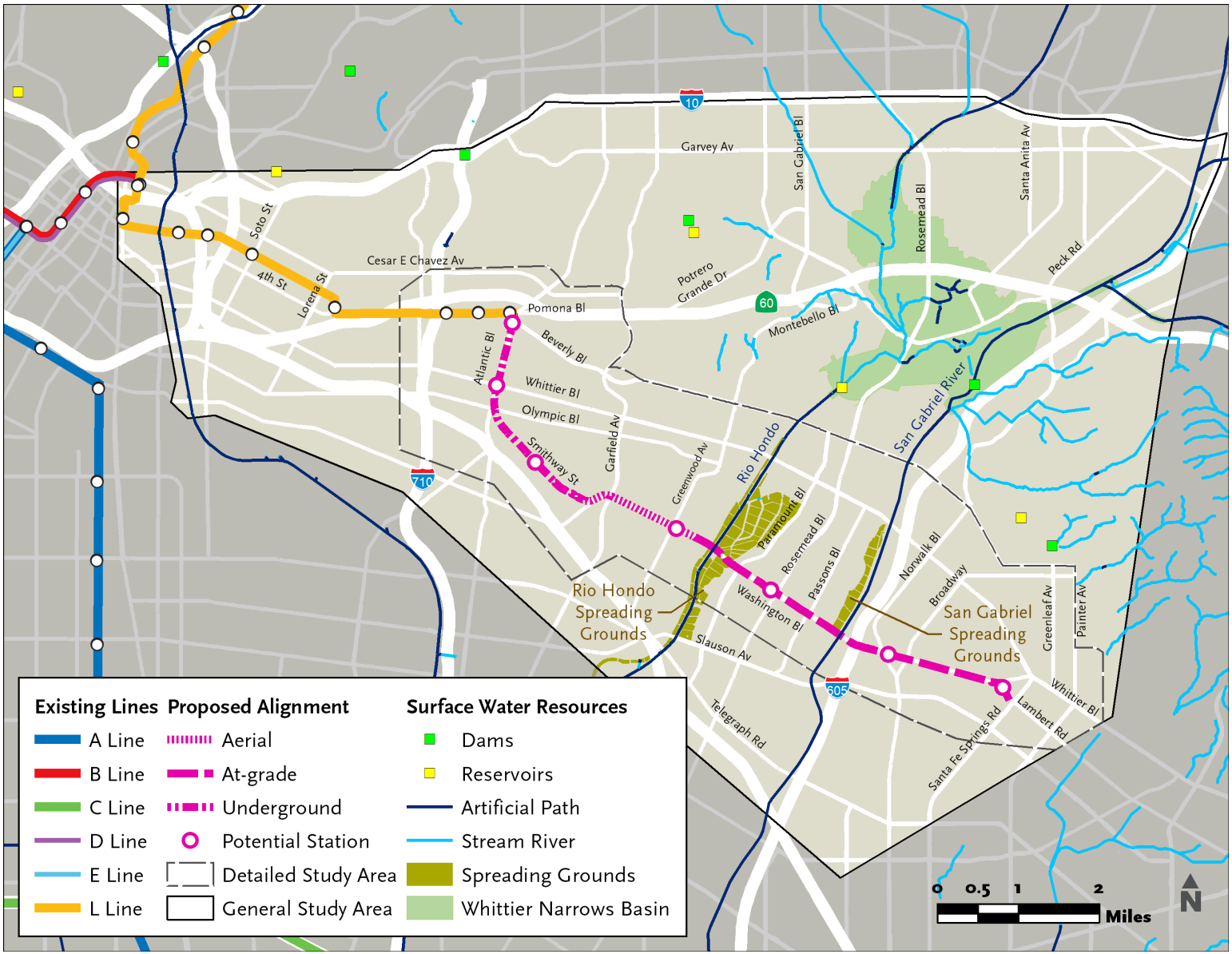
3.9.5.1.3 San Gabriel River Watershed

As illustrated in **Figure 3.9.1**, Alternative 1 lies within the San Gabriel Watershed from Rosemead Boulevard to its terminus at the Lambert station. The watershed is hydraulically connected to the Los Angeles River through the Whittier Narrows Reservoir during high flows from storm events.

Within the DSA of Alternative 1, the San Gabriel River flows in a soft-bottomed channel between raised levees. These conditions allow for infiltration of water to groundwater and are important when water is released from dams along the river during large storms (LACDPW 2006). LACDPW is responsible for operation and maintenance of the river and flood channel. The San Gabriel Spreading Grounds are located approximately 100 feet northeast (upstream) of Alternative 1; because the Spreading Grounds are upstream of the Project, they would not be impacted by operation or construction of the Project.

Source: USGS, 2019.

Figure 3.9.1. Alternative 1, Alternative 2, and Alternative 3 Watersheds



Source: USGS, 2019.

Figure 3.9.2. Surface Water Resources in the Alternative 1 Detailed Study Area

3.9.5.2 Water Quality

3.9.5.2.1 Surface Water

As identified above, the Rio Hondo and the San Gabriel River are the only surface water bodies that cross Alternative 1. No surface water bodies cross Alternatives 2 or 3. Beneficial uses designated in the *LA Basin Plan* and TMDLs for the river reaches that cross Alternative 1 are described below.

Rio Hondo Watershed – Rio Hondo

The *LA Basin Plan* lists the following potential and intermittent beneficial uses in the Rio Hondo Reach 2, Santa Ana Freeway to Whittier Narrows Dam, which crosses Alternative 1:

- **Municipal and Domestic Supply (MUN):** Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.
- **Groundwater Recharge (GWR):** Uses of water for natural or artificial recharge of groundwater for purposes of future extraction, maintenance of water quality, or halting of saltwater instruction into freshwater aquifers.
- **Warm Freshwater Habitat (WARM):** Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
- **Wildlife Habitat (WILD):** Uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.
- **Water Contact Recreation (REC-1):** Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible.

Table 3.9-1 summarizes the pollutants causing impairment in the Rio Hondo in Reach 2.

Table 3.9-1. 303(d) List of Pollutants Covered by TMDLs, Rio Hondo Reach 2

Pollutant	TMDL Requirement Status	Expected TMDL Completion Date	Date USEPA Approved TMDL
Cyanide (Reach 2)	A[1]	01/01/2021	N/A
Coliform Bacteria	B[2]	N/A	03/23/2012

Source: LARWQCB, 2017.
Notes:
1 A – Pollutant requiring a TMDL.
2 B – Pollutant being addressed by USEPA approved TMDL.

San Gabriel River Watershed – San Gabriel River

The *LA Basin Plan* lists the following as existing beneficial uses for the San Gabriel River Reach 2, Firestone Boulevard to Whittier Narrows Dam, which crosses Alternative 1: WILD; Rare, Threatened, or Endangered Species; REC-1; and REC-2 (Non-contact Water Recreation) (LARWQCB 2014).

Additional potential and intermittent beneficial uses in the San Gabriel River Reach 2 include: MUN, GWR, WARM, Industrial Service Supply (for uses of water for industrial activities that do not depend primarily on water quality), and Industrial Process Supply (for uses of water for industrial activities that depend primarily on water quality).

Water quality in the San Gabriel River is impaired by pollutants transported in runoff from dense residential and commercial development in the middle watershed. Additionally, tertiary effluent from several sewage treatment plants enters Reach 2 (LARWQCB 2014). **Table 3.9-2** summarizes the TMDLs in Reach 2.

Table 3.9-2. List of Pollutants Covered by TMDLs, San Gabriel River Reach 2

Pollutant	TMDL Requirement Status	Expected TMDL Completion Date	Date USEPA Approved TMDL
Cyanide	A[1]	01/01/2021	N/A
Lead	B[2]	N/A	03/27/2007
Temperature	A[1]	01/01/2027	N/A

Source: LARWQCB, 2017
Notes:
1 A – Pollutant requiring a TMDL.
2 B – Pollutant being addressed by USEPA approved TMDL.

3.9.5.2.2 Groundwater

Due to the long history of commercial and industrial activity in the DSAs, groundwater contaminants in the Central Subbasin may include sulfate, total dissolved solids (TDS), iron, chloride, and other types of industrial wastes (City of Los Angeles Planning Department 1995). Groundwater monitoring wells are sampled by the LACDPW on an annual basis for major minerals, TDS, electrical conductivity, pH, phosphate, iron, manganese, fluoride, and boron (City of Los Angeles Planning Department 1995). In addition, the Water Replenishment District (WRD) of Southern California and the U.S. Geological Survey (USGS) conduct regional groundwater quality monitoring. Results of this monitoring for key water quality constituents in 2019-2020 is summarized in Table 6-3 in Appendix J. Section 3.8, Hazards and Hazardous Materials, and Appendix I describe specific local causes and sources of groundwater contamination and identify sites in the DSAs where groundwater contamination has been documented. As described in Section 3.8, groundwater contamination along Alternative 1 includes chlorinated solvents, hydrocarbons, gasoline and other fuels (diesel), landfill gases, oil, natural gas, and VOCs.

3.9.5.3 Groundwater Supplies and Recharge

Data from LACDPW on groundwater wells in the vicinity of the DSAs show lower groundwater tables (more than 50 feet below ground surface [bgs]) in the western and southern portions of the DSAs and higher (less than 50 feet bgs) groundwater tables near the spreading grounds (LACDPW 2019).

The Central Subbasin is used for potable water resources. A major factor in the production capacities of groundwater basins is the recharge of underground water resources, including infiltration that occurs at the spreading grounds such as the San Gabriel Spreading Grounds and Rio Hondo Spreading Grounds within the DSA of Alternative 1. Additionally, within the DSA of Alternative 1, the San Gabriel River has a soft bottom, providing infiltration capabilities. Rubber dams are installed on drop structures, allowing for percolation over a total of approximately 500 acres (LACDPW 2006). The

San Gabriel Spreading Grounds are upstream of Alternative 1 and would not be affected by operation or construction of the Project. Alternative 1 would cross approximately 0.35 miles of the Rio Hondo Spreading Grounds and would be at-grade through the spreading grounds with the exception of the bridge over the Rio Hondo channel. The Rio Hondo Spreading Grounds are comprised of 20 shallow basins below Whittier Narrows that replenish the Central Groundwater Basin. Percolation occurs over 430 acres with a storage capacity of 3,694 acre-feet of water. The Rio Hondo and San Gabriel Spreading Grounds are owned by the LACFCD and are operated by the LACDPW (LACDPW 2006).

3.9.5.3.1 Central Subbasin

The Central Subbasin is part of the Los Angeles Coastal Plain. Groundwater extends over much of the Coastal Plain and holds most of its groundwater. It directly underlies the DSAs and has a depth between 1,600 and 2,200 feet (MWD of Southern California 2007). No groundwater extraction is allowed from the subbasin unless water rights are obtained.

According to the state's SGMA Basin Prioritization Map (California DWR 2021), the Los Angeles Coastal Plain Central Subbasin is characterized as having very low priority. Because of its low priority rating, development of a groundwater sustainability plan for the basin underlying the DSAs is not required under the SGMA.

3.9.5.4 Drainage

The DSAs are urbanized and largely covered with impervious surfaces, such as areas of asphalt, concrete, buildings, and other land uses which concentrate storm runoff. Areas of pervious surfaces include the Rio Hondo Spreading Grounds and San Gabriel River and to a minimal extent, landscaped medians and setbacks, parks, and residential yards. There is extensive engineered stormwater drainage infrastructure within the DSAs, and stormwater and other surface water runoff in this area is primarily conveyed to municipal storm drains. Stormwater flows through constructed drainages and into the Rio Hondo and San Gabriel River and is ultimately conveyed to the Pacific Ocean. Jurisdiction over the drainages, tributaries, and rivers in the DSAs is shared between local jurisdictions, LACDPW, and USACE.

3.9.5.5 Flooding and Inundation

Unincorporated Los Angeles and the cities in the DSAs are located in a relatively flat alluvial plain, about 30 miles wide, lying on uplift terraces surrounded by mountain ranges. FEMA has prepared flood maps identifying areas in Los Angeles County and surrounding cities that would be subject to flooding during 100-year and 500-year storm events. The following sections describe the floodplains in the vicinity of the Build Alternatives and MSF site options. FIRM panels that were referred to in order to determine the potential flood hazards are: 06037C1645F, 06037C1810F, 06037C1830F, and 06037C1835F.

3.9.5.5.1 Flood Zones

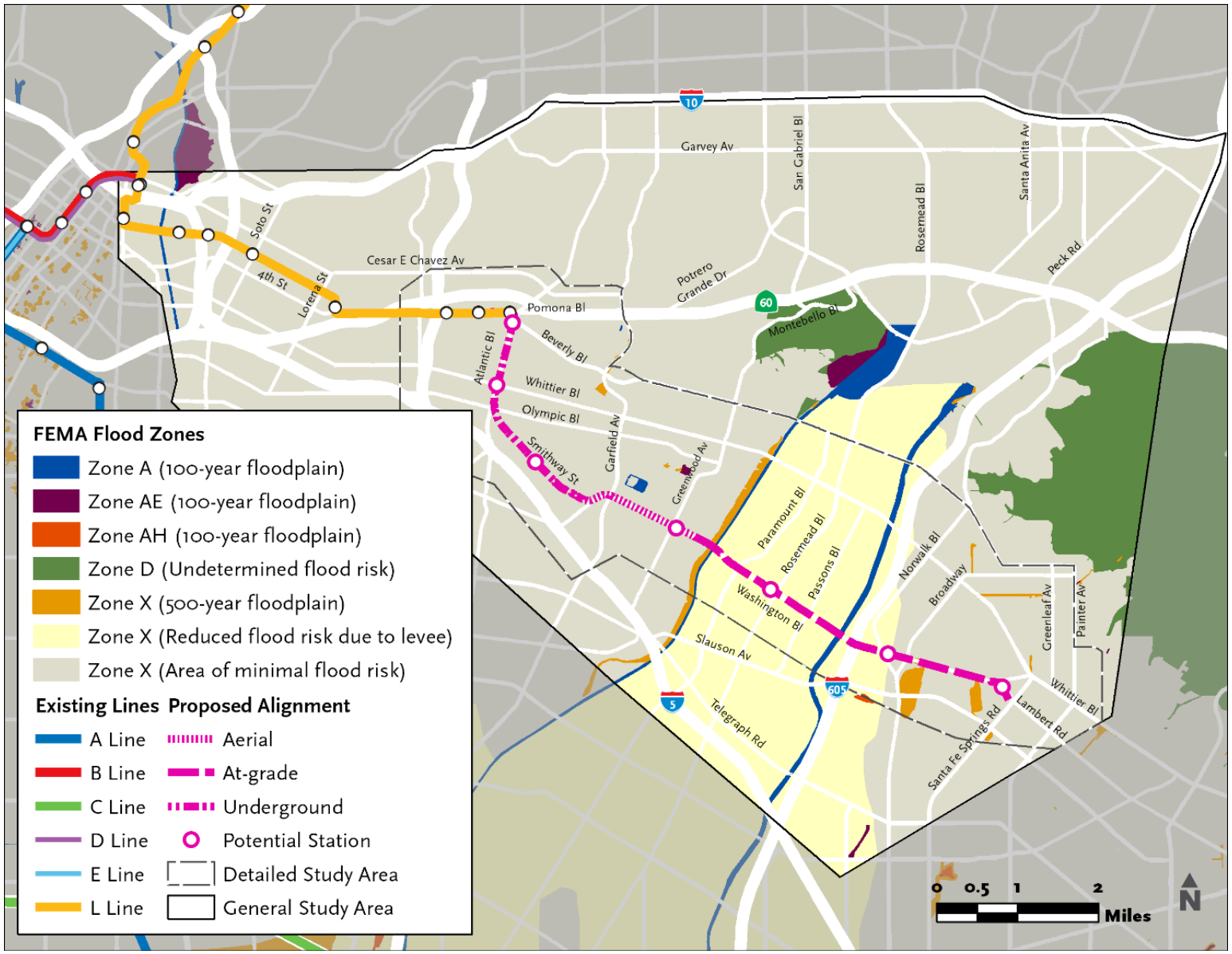
The majority of the DSAs are outside of the 100-year and 500-year flood zones as defined by FEMA (100-year and 500-year storms are defined as having a 1 percent and 0.2 percent chance, respectively, of occurring in any given year). The majority of the areas where the Build Alternatives are located in flood zone X, defined as areas of minimal flood risk. Alternative 1 crosses areas designated as the 500-year floodplain at the Rio Hondo Spreading Grounds and Zone A (100-year floodplain) at the Rio Hondo and San Gabriel River. The Montebello MSF site option is also within Zone A based on its historic use as a rock quarry that collected stormwater. However, because the Montebello MSF site option is now developed, it does not contain any of the natural functions and values of a floodplain. The Commerce MSF site option is outside of the 100-year and 500-year flood zones.

3.9.5.5.2 Inundation Zones

Inundation is defined as flooding related to earthquake-induced failure of up-gradient dams, flood control facilities, or other water retaining structures. Multiple flood control structures intersect Alternative 1 including the channels of the Rio Hondo and San Gabriel River. The Whittier Narrows Dam is located approximately 4 miles north of the Project, outside of the DSAs but within the GSA. Flooding or failure of these facilities could potentially cause inundation in the vicinity of the Build Alternatives. This section describes potential flood inundation hazards.

The Build Alternatives are not located near the ocean or large water bodies susceptible to seiches. Therefore, the Build Alternatives are not located within areas potentially impacted by seiches or tsunamis.

Along Alternative 1, the inundation area below the Whittier Narrows Dam spans from the Rio Hondo to approximately the Norwalk station, as shown on **Figure 3.9.3** as Zone X shaded. The city of Santa Fe Spring's *Re-Imagine Santa Fe Springs 2040 General Plan* discusses inundation hazards from the Whittier Narrows Dam. The general plan states that inundation from dam failure would impact the city and would mostly affect the commercial, industrial, and residential areas west of Norwalk Boulevard (City of Santa Fe Springs 2022). Similarly, the city of Whittier's *Envision Whittier General Plan* shows that the inundation area below Whittier Narrows Dam includes a small northwest portion of the city (City of Whittier 2021). The northwest portion of the city also includes a small area of inundation from the Hoover Reservoir (City of Whittier 2021). USACE is actively managing the dam and addressing safety concerns under the seepage/stability correction program (USACE 2021).



Source: FEMA, 2021.

Figure 3.9.3. FEMA Flood Zones in the Alternative 1 Detailed Study Area

3.9.5.6 Municipal Water Supply

Within Los Angeles County, water supply is comprised of a complex system made up of state agencies and local water districts operating aqueducts, reservoirs, and groundwater basins. Approximately 33 percent of the water in the county comes from local supply sources, while the remaining supply is imported from outside of the county.

Local water supply sources include surface water from mountain runoff, groundwater, and recycled water. Imported sources of water supply include the Colorado River, the Bay-Delta in Northern California via the State Water Project, and the Owens Valley via the Los Angeles Aqueduct. Overall, the water supply in the DSAs comes from a mixture of local supplies of groundwater and surface water, as well as imported supplies from larger regional water supply agencies. Additional information on water supply is provided in Section 3.16, Utilities and Service Systems.

The LACDPW maintains a database of groundwater supply wells that identify groundwater wells near the Rio Hondo and San Gabriel River (LACDPW 2019). Additionally, there are 10 municipal water wells located within approximately 0.5 miles of the proposed underground guideway portion of the Build Alternatives and the aerial portion of Alternatives 1 and 3. There is one municipal well located approximately 0.5 miles from the at-grade portion of Alternative 1. Most of these wells are located approximately 1,800 feet or more away from the Build Alternatives.

3.9.6 Impact Evaluation

3.9.6.1 Impact HWQ-1: Water Quality

Impact HWQ-1: Would a Build Alternative violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

3.9.6.1.1 Alternative 1 Washington

Operational Impacts

Operation of Alternative 1 would not generate pollutants covered by TMDLs in the portions of the Rio Hondo and San Gabriel River within the DSA of Alternative 1 (i.e., cyanide and coliform bacteria in the Rio Hondo Reach 2 and cyanide, lead, and temperature in San Gabriel River Reach 2, as discussed in **Section 3.9.5.2.1**). Although lead has historically been generated by transportation operations from fuels and brake pad and tire wear, LRT operations would not generate lead as the system would use electricity to operate and would not have tires.

The Project could result in potential direct impacts on surface water quality, primarily the Rio Hondo and San Gabriel River, by increasing stormwater runoff and producing contaminants typically associated with transit, such as oil and grease, that could be carried by the stormwater runoff into surface waters. However, operations would be subject to the LARWQCB MS4 NPDES permit (Order No. R4-2012-0175 and NPDES No. CAS004001) and its associated BMPs for activities such as roadway paving or repair operation and public agency facilities and activities. In compliance with the SWRCB's General Construction Permit (Order #2009-0009-DWQ), and as set forth in PM HWQ-1 in **Section 3.9.7.1**, post-Project BMPs would be installed to minimize stormwater pollution. With implementation

of post-construction BMPs, operation of Alternative 1 would not result in substantial degradation of surface water quality from runoff and impacts would be less than significant.

Potential direct impacts on water quality could also result from the accidental release of hazardous materials involved in operation of Alternative 1 including fuels (for maintenance vehicles), paints, lubricating fluids, and solvents used for maintenance. As described in Section 3.8, Hazards and Hazardous Materials, and Appendix I, the Project would comply with hazardous materials laws and regulations, including hazardous materials inventory and emergency response planning, risk planning and accident prevention, employee hazard communication, public notification of potential exposure to specific chemicals, and storage and handling of hazardous materials. Thus, operation of Alternative 1 would not violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality from use of hazardous materials; impacts would be less than significant.

Indirect water quality impacts could occur from operation of Alternative 1 over time. Operation of the trains could produce pollutants, such as heavy metals and petroleum hydrocarbons, that enter the soil and then become entrained in surface water over time via erosion and stormwater runoff. If such pollutants were released onto the ground during operation, they could impact surface water resources in the DSA, primarily the Rio Hondo and San Gabriel River. However, as described above, post-construction runoff and pollution control measures would be implemented, as required by NPDES permits. This would minimize stormwater pollution and thereby ensure that no violation of water quality standards or waste discharge requirements or other degradation of water quality would occur. Thus, operation of Alternative 1 would have less than significant indirect impacts on surface water quality.

There is a potential for stormwater containing pollutants from the Project (e.g., oil and grease) to percolate into groundwater basins underlying the DSA. However, implementation of post-construction BMPs as required by the NPDES permits and set forth in PM HWQ-1, would minimize stormwater and non-stormwater runoff from the DSA during operation of Alternative 1. Treatment of stormwater runoff using infiltration BMPs would reduce the risk that polluted water would percolate into groundwater basins underlying the DSA. Additionally, with the exception of the spreading grounds, the DSA is primarily covered with impervious surface, which prevents surface water from percolating to groundwater. Therefore, operation of Alternative 1 would not violate water quality standards or waste discharge requirements or otherwise substantially degrade groundwater quality; impacts would be less than significant.

Based on the information above, operation of Alternative 1 would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Thus, operation of Alternative 1 would have less than significant impacts on surface water and groundwater quality.

It should also be noted that, as identified in the Section 3.14, Transportation and Traffic, and Appendix N, Alternative 1 would result in reduced vehicle miles traveled (VMT) compared to the No Project Alternative. An overall reduction in VMT in the DSA could decrease the pollutants associated with transportation operations compared to the No Project Alternative (Fang and Volker 2017). Common transportation-related pollutants include fuel, oil, and grease from vehicle leaks or improperly discarded used oil, particulates and heavy metals generated from vehicle exhaust fumes, tire and asphalt wear deposits, and dirt and solids carried by vehicles from other sites (Nixon and Saphores 2007; Trumbull and Bae 2000). The reduction in VMT would result in a corresponding beneficial effect on surface water quality in the DSA compared to the No Project Alternative.

Design Options

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option would not affect water quality differently than the base Alternative 1. As with the base Alternative 1, Alternative 1 with the Atlantic/Pomona Station Option has the potential to degrade surface water quality by increasing stormwater runoff, producing contaminates (e.g., oil and grease) that could be carried by that stormwater runoff into surface waters, and accidentally releasing hazardous materials. Operation of Alternative 1 with the Atlantic/Pomona Station Option would not generate pollutants covered by TMDLs in the portions of the Rio Hondo and San Gabriel River within the DSA of Alternative 1 (as discussed in **Section 3.9.5.2.1**). The Project would comply with post-construction BMPs as required by the NPDES permits and set forth in PM HWQ-1 (**Section 3.9.7.1**). Furthermore, the Project would comply with hazardous materials laws and regulations, as described in Section 3.8, Hazards and Hazardous Materials, and Appendix I. Thus, operation of Alternative 1 with the Atlantic/Pomona Station Option would not generate runoff, stormwater pollution, or require the use of hazardous materials such that surface water quality would be substantially degraded.

There is a potential for stormwater containing pollutants from the Project to percolate into groundwater basins underlying the DSA. Because the implementation of BMPs required by NPDES permits would minimize stormwater and non-stormwater runoff from the DSA during operation, percolation of polluted water to the groundwater basin underlying the DSA would be unlikely. Additionally, because the DSA is primarily covered with impervious surface, potential impacts on groundwater quality from percolation of contaminated surface water would be limited.

Based on the information above, operation of Alternative 1 with the Atlantic/Pomona Station Option would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Thus, operation of Alternative 1 with the Atlantic/Pomona Station Option would have less than significant impacts on surface water and groundwater quality.

Montebello At-Grade Option

Alternative 1 with the with the Montebello At-Grade Option would not affect water quality differently than the base Alternative 1. Operation of Alternative 1 with the Montebello At-Grade Option would not generate pollutants covered by TMDLs in the portions of the Rio Hondo and San Gabriel River within the DSA of Alternative 1 (as discussed in **Section 3.9.5.2.1**).

As with the base Alternative 1, Alternative 1 with the Montebello At-Grade Option has the potential to degrade surface water quality by increasing stormwater runoff, producing contaminates (e.g., oil and grease) that could be carried by that stormwater runoff into surface waters, and accidentally releasing hazardous materials. The Project would comply with post-construction BMPs as required by the NPDES permits and set forth in PM HWQ-1 (**Section 3.9.7.1**). Furthermore, the Project would comply with hazardous materials laws and regulations described in Section 3.8, Hazards and Hazardous Materials, and Appendix I. Thus, operation of Alternative 1 with the Montebello At-Grade Option would not generate runoff, stormwater pollution, or require the use of hazardous materials such that surface water quality would be substantially degraded.

There is a potential for stormwater containing pollutants from the Project to percolate into groundwater basins underlying the DSA. Because the implementation of BMPs required by NPDES

permits would minimize stormwater and non-stormwater runoff from the DSA during operation, percolation of polluted water to groundwater basins underlying the DSA would be unlikely. Additionally, because the DSA is primarily covered with impervious surface, potential impacts on groundwater quality from percolation of contaminated surface water would be limited.

Based on the information above, operation of Alternative 1 with the Montebello At-Grade Option would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Thus, operation of Alternative 1 with the Montebello At-Grade Option would have less than significant impacts on surface water and groundwater quality.

Construction Impacts

Water quality impacts could potentially result from construction of Alternative 1. Construction activities that disturb the ground, such as excavation and grading, have the potential to increase erosion and sedimentation around proposed construction and staging areas. Ground disturbing activities associated with construction could result in a temporary increase in suspended solids running off construction sites. In a storm event, construction site runoff could result in sheet erosion of exposed soil. If not adequately controlled, contaminated water runoff from these areas would have the potential to degrade surface water quality in surface water bodies in the DSA of Alternative 1, primarily the Rio Hondo and San Gabriel River.

To reduce any potential impacts related to stormwater runoff, a SWPPP would be prepared to comply with the SWRCB's NPDES Construction General Permit (see details of SWPPP requirements in **Section 3.9.7.1**). Implementation of the SWPPP would ensure that the applicable provisions of Sections 301 and 402 of the CWA and Chapter 6, Article 4.4, Storm Water and Urban Runoff Pollution Control from the Los Angeles County Municipal Code, would be met and pollutant discharges would be properly controlled. Implementation of Construction Stormwater Management Controls in the SWPPP would function to minimize the contact of construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, solvents) with stormwater. BMPs designed to reduce erosion of exposed soil may include, but are not limited to, soil stabilization controls, water for dust control, perimeter silt fences, placement of straw wattles, and sediment basins. If ground disturbing activities must take place during the rainy season when there is greater potential for erosion to occur, the selected BMPs would focus on erosion control and keeping soil and sediment in place. LARWQCB's MS4 permit also specifies that permittees must implement a program to control runoff from construction activities. As part of this, an erosion and sediment control plan would be established prior to the initiation of construction activities. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**).

Construction of Alternative 1 would involve construction across the Rio Hondo and San Gabriel River and the Rio Hondo Spreading Grounds. The existing bridges would be demolished and replaced with new bridges that carry both the LRT facility and the roadway. Replacement of bridges would require construction activities such as installing the foundation and pouring the concrete for the superstructure, as detailed in Appendix P. The replacement bridges would be wider than the existing bridges to accommodate the light rail guideway. The Rio Hondo bridge would include one column in the Rio Hondo and one column in the spreading grounds. For San Gabriel River bridge, a total of four bridge piers within the San Gabriel River would be replaced.

Construction activities associated with replacing bridge piers have the potential to impact water quality from ground disturbance, which could cause erosion and sedimentation into water bodies and generate turbidity if work occurs in water. Furthermore, potential fuel leaks from construction equipment could contaminate nearby water bodies. The contractor would be required to implement construction BMPs, such as properly maintaining equipment and vehicles and refueling equipment and vehicles away from surface waters. As set forth in PM HWQ-3, construction work within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River would be scheduled to occur in the dry season when there is no water, to the extent feasible. However, if construction occurs when water is present, the potential for construction activities to generate turbidity and release contaminants in water would be a significant impact. Implementation of MM HWQ-1, which requires water present in the work area to be isolated such that construction does not occur in water as discussed in **Section 3.9.7**, would reduce this impact to less than significant.

During construction, there is the potential for Alternative 1 to encounter, dewater, and dispose of groundwater during ground disturbing activities, tunnel boring or excavation for the underground guideway, relocation of utilities, and ground improvements used to address liquefaction along the eastern portion of the alignment (as described in Section 3.6, Geology, Seismicity, Soils, and Paleontological Resources, and Appendix G). If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. MM HAZ-2, discussed in **Section 3.9.7**, requires the preparation of a Soil and Groundwater Management Plan in consultation with LARWQCB. The plan would identify and delineate contaminated areas; provide procedures for handling, excavating, and managing excavated soils and dewatering effluent and for notifying appropriate agencies; and provide requirements for site-specific health and safety plans. Thus, implementation of MM HAZ-2 would help minimize the spread of contaminated groundwater and would reduce this potential impact from construction of Alternative 1 to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

As discussed in **Section 3.9.5.2.2**, known and/or suspected groundwater contamination exists in the vicinity of the DSA. While construction of Alternative 1 would not occur directly within any of the known contaminated sites identified in the area, construction could encounter groundwater contaminated with hazardous materials from other sources such as underground storage tanks, including pollutants covered by TMDLs (i.e., lead and cyanide) in the Rio Hondo and San Gabriel River (**Section 3.9.5.2.1**). Thus, construction of Alternative 1 may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. MM HAZ-3 is discussed in **Section 3.9.7** and requires contractors to inspect groundwater for signs of contamination, and if contaminated groundwater is found, stop work in the vicinity of area, cordon off the area, notify and coordinate with appropriate agencies, and develop an investigation and site-specific groundwater management plan to ensure contaminants are not spread. Thus, implementation of MM HAZ-3 would reduce this potential impact from construction of Alternative 1 to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

If groundwater is encountered during excavation for replacement bridge piers, the walls of the excavation would be supported with the use of drilling muds, or the "wet method of construction." This method would not require dewatering and is explained in detail in Appendix J.

Design Options

Atlantic/Pomona Station Option

Construction of Alternative 1 with the Atlantic/Pomona Station Option would not affect water quality differently from the base Alternative 1. Construction activities that disturb the ground, such as excavation and grading, have the potential to increase erosion and sedimentation around proposed construction and staging areas. Thus, a SWPPP would be prepared to comply with the SWRCB's NPDES Construction General Permit to reduce any potential impacts related to stormwater runoff from construction sites. Implementation of the SWPPP would ensure that the applicable requirements would be met and pollutant discharges would be properly controlled. LARWQCB's MS4 permit also specifies that permittees must implement a program to control runoff from construction activities, including an erosion and sediment control plan. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**).

Construction of Alternative 1 with the Atlantic/Pomona Station Option would not affect construction at the Rio Hondo, Rio Hondo Spreading Grounds, and the San Gabriel River differently than the base Alternative 1. Bridge work would be the same and would have the potential to impact water quality. As set forth in PM HWQ-3, construction work within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River would be scheduled to occur in the dry season when there is no water, to the extent feasible. However, if construction occurs when water is present, the potential for construction activities to generate turbidity and release contaminants in water would be a significant impact. Implementation of MM HWQ-1, which requires water present in the work area to be isolated such that construction does not occur in water, as discussed in **Section 3.9.7**, would reduce this impact to less than significant.

As with the base Alternative 1, there is the potential for Alternative 1 with the Atlantic/Pomona Station Option to encounter, dewater, and dispose of groundwater during construction. If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. MM HAZ-2, summarized above and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact from construction of Alternative 1 with the Atlantic/Pomona Station Option to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

Construction of Alternative 1 with the Atlantic/Pomona Station Option could encounter groundwater contaminated with hazardous materials from sources such as underground storage tanks. Thus, construction may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized above and discussed in **Section 3.9.7**, would reduce this potential impact from construction of Alternative 1 with the Atlantic/Pomona Station Option to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

Montebello At-Grade Option

Similar to the base Alternative 1, water quality impacts could potentially result from construction of Alternative 1 with the Montebello At-Grade Option. Construction activities that disturb the ground, such as excavation and grading, have the potential to increase erosion and sedimentation around

proposed construction and staging areas. The At-Grade Option would potentially have more ground disturbance than Alternative 1 as it would include a longer at-grade and shorter aerial alignment.

As with the Base Alternative 1, a SWPPP would be prepared to comply with the Construction General Permit to reduce any potential impacts related to stormwater runoff from construction sites. Implementation of the SWPPP would ensure that the applicable requirements would be met and pollutant discharges would be properly controlled. LARWQCB's MS4 permit also specifies that permittees must implement a program to control runoff from construction activities, including an erosion and sediment control plan. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**).

Construction of Alternative 1 with the Montebello At-Grade Option would not affect construction across the Rio Hondo, Rio Hondo Spreading Grounds, and the San Gabriel River differently than under the base Alternative 1. Bridge work would be the same and would have the potential to impact water quality. As set forth in PM HWQ-3, construction work within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River would be scheduled to occur in the dry season when there is no water, to the extent feasible. However, if construction occurs when water is present, the potential for construction activities to generate turbidity and release contaminants in water would be a significant impact. Implementation of MM HWQ-1, which requires water present in the work area to be isolated such that construction does not occur in water as discussed in **Section 3.9.7**, would reduce this impact to less than significant.

As with the base Alternative 1, there is the potential for Alternative 1 with the Montebello At-Grade Option to encounter, dewater, and dispose of groundwater during construction. If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. MM HAZ-2, summarized above and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact from construction of Alternative 1 with the Montebello At-Grade Option to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

Construction of Alternative 1 with the Montebello At-Grade Option could encounter groundwater contaminated with hazardous materials from sources such as underground storage tanks. Thus, construction may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized above and discussed in **Section 3.9.7**, would reduce this potential impact from construction of Alternative 1 with the Montebello At-Grade Option to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

3.9.6.1.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Potential direct impacts on surface water quality from the Project could include increased stormwater runoff from surface facilities that could contaminate local surface water resources. The base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option are not near the Rio Hondo

Reach 2 or San Gabriel River Reach 2. Further, operational activities would not generate pollutants covered by TMDLs in the Rio Hondo or San Gabriel River. The operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option has the potential to increase the concentration and accumulation of pollutants typically associated with transit projects. In compliance with the Construction General Permit and MS4 NPDES permit, and set forth in PM HWQ-1 in **Section 3.9.7.1**, post-Project BMPs would be installed to minimize stormwater pollution.

Potential direct impacts on water quality could also result from the accidental release of hazardous materials, including fuels (for maintenance vehicles), paints, lubricating fluids, and solvents used for maintenance. As described in Section 3.8, Hazards and Hazardous Materials, and Appendix I, the Project would comply with hazardous materials laws and regulations, including hazardous materials inventory and emergency response planning, risk planning and accident prevention, employee hazard communication, public notification of potential exposure to specific chemicals, and storage of hazardous materials.

Operational activities could release pollutants such as heavy metals and petroleum hydrocarbons over time. If such pollutants were released onto the ground during operation, they could reach surface water resources in the DSA of Alternative 2 and result in adverse impacts on surface water quality. Post-construction runoff and pollution control measures would be implemented, as required by NPDES permits and set forth in PM HWQ-1. This would minimize stormwater pollution and thereby ensure that no violation of water quality standards or waste discharge requirements or other degradation of water quality would occur.

There is a potential for stormwater containing pollutants from operation of the Project (e.g., oil and grease) to percolate into groundwater basins underlying the DSA. Because the implementation of BMPs required by the NPDES permits and set forth in PM HWQ-1 would minimize stormwater and non-stormwater runoff from the DSA during operations, percolation of polluted water to groundwater basins underlying the DSA would be unlikely. Additionally, because the DSA is primarily covered with impervious surface, potential impacts on groundwater quality from percolation of contaminated surface water would be limited.

Based on the information above, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality; thus, impacts would be less than significant.

It should also be noted that, as with Alternative 1, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in reduced VMT compared to the No Project Alternative. An overall reduction in VMT in the DSA compared to the No Project Alternative could decrease the primary pollutants associated with transportation operations (Fang and Volker 2017) such as fuels, oil, and grease; particulates and heavy metals; and dirt (Nixon and Saphores 2007; Trumbull and Bae 2000). This would be a beneficial effect on surface water quality in the DSA compared to the No Project Alternative.

Construction Impacts

Base Alternative and Design Option

Water quality impacts could potentially result from construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option. Construction activities that disturb the ground, such as excavation and grading, have the potential to increase erosion and sedimentation around construction and staging areas. Ground disturbing activities associated with construction could potentially result in a temporary increase in suspended solids running off construction sites. In a storm event, construction site runoff could result in sheet erosion of exposed soil. If not adequately controlled, contaminated water runoff from these areas would have the potential to degrade surface water quality.

To reduce any potential impacts related to stormwater runoff, a SWPPP would be prepared to comply with the SWRCB's NPDES Construction General Permit (see details of SWPPP requirements in PM HWQ-2 in **Section 3.9.7.1**). Implementation of the SWPPP would ensure that the applicable provisions of the CWA and Los Angeles County Municipal Code, would be met and pollutant discharges would be properly controlled. LARWQCB's MS4 permit also specifies that permittees must implement a program to control runoff from construction activities. As part of this, an erosion and sediment control plan would be established prior to the initiation of construction activities. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**).

No construction would occur in or near the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River. Thus, construction would not cause turbidity in water.

There is the potential for the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option to encounter, dewater, and dispose of groundwater during construction. If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option could encounter groundwater contaminated with hazardous materials from sources such as underground storage tanks. Thus, construction may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

3.9.6.1.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Potential direct impacts on surface water quality could include increased stormwater runoff from surface facilities that could contaminate local surface water resources. Operational activities would not generate pollutants covered by TMDLs in the portions of the Rio Hondo near the DSA of Alternative 3 and would not affect the San Gabriel River. The operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option has the potential to increase the concentration and accumulation of pollutants typically associated with transit projects (e.g., oil and grease). In compliance with the Construction General Permit and MS4 NPDES permit, and as set forth in PM HWQ-1 in **Section 3.9.7.1**, post-Project BMPs would be installed to minimize stormwater pollution.

Potential direct impacts on water quality could also result from the accidental release of hazardous materials, including fuels, paints, lubricating fluids, and solvents used for maintenance. As described in Section 3.8, Hazards and Hazardous Materials, and Appendix I, the Project would comply with hazardous materials laws and regulations, including hazardous materials inventory and emergency response planning, risk planning and accident prevention, employee hazard communication, public notification of potential exposure to specific chemicals, and storage and handling of hazardous materials.

Operational activities could release pollutants such as heavy metals and petroleum hydrocarbons over time. If such pollutants were released onto the ground during operation, they could reach surface water resources in the DSA and result in adverse impacts on surface water quality. However, as described above, post-construction runoff and pollution control measures would be implemented, as required by NPDES permits and set forth in PM HWQ-1. This would minimize stormwater pollution and thereby ensure that no violation of water quality standards or waste discharge requirements or other degradation of water quality would occur.

There is a potential for stormwater containing pollutants from operation of the Project (e.g., oil and grease) to percolate into groundwater basins underlying the DSA. Because the implementation of BMPs required by NPDES permits and set forth in PM HWQ-1 would minimize stormwater and non-stormwater runoff from the DSA during operation, percolation of polluted water to the groundwater basin underlying the DSA would be unlikely. Additionally, because the DSA is covered with impervious surface, potential impacts on groundwater quality from percolation of contaminated surface water would be limited.

Based on the information above, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality; thus, impacts would be less than significant.

It should also be noted that, as with Alternative 1, and as identified in Section 3.14, Transportation and Traffic, and Appendix N, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in reduced VMT compared to the No Project Alternative. An overall reduction in VMT in the DSA compared to the No Project Alternative

could decrease the primary pollutants associated with all types of transportation operations (Fang and Volker 2017) such as fuels, oil, and grease; particulates and heavy metals; and dirt (Nixon and Saphores 2007; Trumbull and Bae 2000). This would be a beneficial effect on surface water quality in the DSA compared to the No Project Alternative.

Construction Impacts

Base Alternative and Design Options

Water quality impacts could potentially result from construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option. Construction activities that disturb the ground, such as excavation and grading, have the potential to increase erosion and sedimentation around proposed construction and staging areas. Ground disturbing activities associated with construction could potentially result in a temporary increase in suspended solids running off construction sites. In a storm event, construction site runoff could result in sheet erosion of exposed soil. If not adequately controlled, contaminated water runoff from these areas would have the potential to degrade surface water quality in surface water bodies near the alignment, primarily the Rio Hondo.

To reduce any potential impacts related to stormwater runoff, a SWPPP would be prepared to comply with the Construction General Permit (see details of SWPPP requirements in PM HWQ-2 in **Section 3.9.7.1**). Implementation of the SWPPP would ensure that the applicable provisions of the CWA and Urban Runoff Pollution Control from the Los Angeles County Municipal Code would be met, and pollutant discharges would be properly controlled. LARWQCB's MS4 permit also specifies that permittees must implement a program to control runoff from construction activities. As part of this, an erosion and sediment control plan would be established prior to the initiation of construction activities. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**).

No construction would occur in the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River. Thus, construction would not cause turbidity in water.

There is the potential for the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option to encounter, dewater, and dispose of groundwater during construction. If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option could encounter groundwater contaminated with hazardous materials from sources such as underground storage tanks. Thus, construction may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant. This mitigation, as well as information about hazardous and

contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

3.9.6.1.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Operation of the proposed Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option could have adverse effects on surface water and groundwater resources and water quality. Vehicle maintenance, including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication, has the potential to generate pollutants, such as dirt, oil, and fuel that may runoff into nearby surface waters (Trumbull and Bae 2000). However, operation of maintenance facilities, including cleaning of vehicles and other activities, would conform with MRDC 11.5 as described in **Section 3.9.2.4**. Additionally, operations would comply with applicable permits, such as SWRCB's Industrial General Permit and the MS4 permit and BMPs required by these permits and set forth in PM HWQ-1 (discussed in **Section 3.9.7.1**) would be implemented. Operations would not generate pollutants covered by TMDLs in the Rio Hondo and would not affect the San Gabriel River. The MSF site options are in developed, impervious areas with an established stormwater and drainage system. No change in impervious surface area would occur and thus, no change in the amount of runoff from precipitation would occur. Based on the information above, operation of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality, and impacts would be less than significant.

Construction Impacts

MSF Site Options and Design Option

Water quality impacts could potentially result from construction of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option. Construction activities that disturb the ground, such as excavation and grading, have the potential to increase erosion and sedimentation around proposed construction areas. Construction of the MSF site options would comply with applicable construction permits, such as the SWRCB Construction General Permit and SWPPP, to avoid erosion that could impact water quality if soils were released to surface waters. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in **Section 3.9.7.1**.

There is the potential to encounter, dewater, and dispose of groundwater during construction of the MSF site options. If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

There is the potential during construction to encounter shallow groundwater from demolition and grading activities, shallow excavation, and relocation of utilities. This groundwater could be

contaminated with hazardous materials from sources such as underground storage tanks. Contaminated groundwater may contain pollutants covered by a TMDL (i.e., cyanide) and a potentially significant impact would occur. Implementation of MM HAZ-3, as summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

3.9.6.2 Impact HWQ-2: Groundwater Supplies and Recharge

Impact HWQ-2: Would a Build Alternative substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

3.9.6.2.1 Alternative 1 Washington

Operational Impacts

Operation of Alternative 1 may result in a slight increase in impervious surfaces associated with the potentially larger piers within the Rio Hondo Spreading Grounds and the earthen bottom of the San Gabriel River. During project operations, this potential increase in impervious surface area within the riverbed and spreading grounds would not substantially impact groundwater supplies or interfere with groundwater recharge. The underground alignment would not affect groundwater movement or infiltration as the groundwater table would likely be lower than the underground alignment, as discussed in **Section 3.9.5.3**. Operation of Alternative 1 would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. The impact would be less than significant.

Design Options

Atlantic/Pomona Station Option

Alternative 1 with the Atlantic/Pomona Station Option would affect groundwater supplies and recharge similar to the base Alternative 1. The open station and underground alignment would be above the groundwater table and would not affect groundwater movement or infiltration. Under Alternative 1 with the Atlantic/Pomona Station Option, there may still be a minor change in the amount of impervious surfaces associated with the replacement bridge piers in the Rio Hondo Spreading Grounds and San Gabriel River. However, this would not substantially affect groundwater supplies or recharge capacity. Thus, operation of Alternative 1 with the Atlantic/Pomona Station Option would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin; the impact would be less than significant.

Montebello At-Grade Option

Alternative 1 with the Montebello At-Grade Option would affect groundwater supplies and recharge similar to the base Alternative 1. This design option would include a longer at-grade segment in the city of Montebello and a shorter aerial segment, which would reduce the amount of new imperious

surface that would be constructed as compared to an aerial alignment at this location and no significant impacts on groundwater recharge would occur.

Under Alternative 1 with the Montebello At-Grade Option, there may still be a minor change in the amount of impervious surfaces associated with the replacement bridge piers in the Rio Hondo Spreading Grounds and San Gabriel River. However, this would not substantially affect groundwater supplies or recharge capacity. Thus, operation of Alternative 1 with the Montebello At-Grade Option would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin. The impact would be less than significant.

Construction Impacts

Construction of Alternative 1 could impact groundwater supplies and recharge because dewatering activities have the potential to lower the groundwater table. Groundwater dewatering would take place during construction, particularly during the construction of the underground guideway and station construction. However, the closest groundwater well is approximately 1,800 feet away from the underground guideway, and thus dewatering would not be expected to affect groundwater wells. Additionally, groundwater well depths are relatively deep near the underground alignment, which would reduce the likelihood that groundwater would be encountered during construction of the tunnel. The tunnel would only be up to 60 feet deep, and the water table would likely be below or at the lower level of construction activities. Thus, the amount of water that would need to be extracted, cleaned, and disposed of during construction would be minimal.

Groundwater recharge in the DSA of Alternative 1 takes place primarily in the spreading grounds associated with the Rio Hondo and through the earthen bottom of the San Gabriel River. Construction of the replacement bridge piers in the Rio Hondo Spreading Grounds and San Gabriel River might slightly increase the amount of impervious surface if the piers are larger in area than the existing bridge piers. The size of the bridge piers would not be determined until final design. Thus, while the change is expected to be small, construction of Alternative 1 in the Rio Hondo Spreading Grounds and San Gabriel River would have potentially significant impacts on groundwater supplies and recharge. Implementation of MM HWQ-2, which requires the construction of compensatory mitigation to compensate for potential loss of flood storage and infiltration potential due to placement of the bridge piers based on the volume of the flood storage loss and a hydraulic analysis, as discussed in **Section 3.9.7**, would reduce impacts to less than significant.

Construction in the Rio Hondo Spreading Grounds and the San Gabriel River has the potential to disturb and compact soils that could affect groundwater recharge and cause erosion. As the spreading grounds are owned and operated by LACDPW, a construction permit from the LACDPW would be required, which would stipulate approaches for minimizing construction-related impacts on the spreading basins, such as soil compaction and erosion. BMPs required by this permit are also set forth in PM HWQ-2, as discussed in **Section 3.9.7.1**. Given compliance with the permit, construction of Alternative 1 would have less than significant impacts on groundwater supplies and recharge from ground disturbance and soil compaction.

Design Options

Atlantic/Pomona Station Option

Construction of Alternative 1 with the Atlantic/Pomona Station Option would not affect groundwater recharge or supplies any differently than the base Alternative 1. Under Alternative 1 with the Atlantic/Pomona Station Option, construction activities would be temporary and would not significantly impact the recharge capabilities of the watershed as there would be a negligible increase in impervious surface area compared to the existing condition.

The Atlantic/Pomona Station Option would shift the underground guideway slightly east of Atlantic Boulevard between Beverly Boulevard and 4th Street. However, there are no groundwater wells near the Option location, so groundwater wells would not be impacted. As explained under Alternative 1, the groundwater table would be much lower than the underground alignment. Since the water table would likely be located below or at the lower level of construction activities, the amount of water that would need to be extracted, cleaned, and disposed of during construction would be minimal.

Construction of Alternative 1 with the Atlantic/Pomona Station Option would still require replacement bridge piers in the Rio Hondo Spreading Grounds and the San Gabriel River. As described for the base Alternative 1, if the bridge piers are larger in area, there would potentially be significant impacts on groundwater supplies and recharge. Implementation of MM HWQ-2, as summarized above and discussed in **Section 3.9.7**, would compensate for potential loss of flood storage and infiltration potential due to placement of the bridge piers, which would reduce impacts to less than significant.

As with the base Alternative 1, construction in the Rio Hondo Spreading Grounds and San Gabriel River also has the potential to disturb and compact soils that could affect groundwater recharge and cause erosion. A construction permit from LACDPW would dictate approaches for minimizing construction-related impacts on the spreading basins. BMPs required by this permit are also set forth in PM HWQ-2, as discussed in **Section 3.9.7.1**. Thus, construction of Alternative 1 with the Atlantic/Pomona Station Option would have less than significant impacts on groundwater supplies and recharge from ground disturbance and soil compaction.

Montebello At-Grade Option

Construction of Alternative 1 with the Atlantic/Pomona Station Option would affect groundwater recharge similar to the base Alternative 1. Under Alternative 1 with the Montebello At-Grade Option, construction activities would be temporary and would not significantly impact the recharge capabilities of the watershed as there would be a negligible increase in impervious surface area compared to the existing condition. This design option would include a longer at-grade segment in the city of Montebello and a shorter aerial segment, which would reduce the amount of new imperious surface that would be constructed as compared to an aerial alignment at this location. Groundwater dewatering would take place during construction, particularly during the construction of the underground guideway and station construction. However, the groundwater table would be much lower than the underground alignment, as explained under Alternative 1. Since the water table would likely be located below or at the lower level of construction activities, the amount of water that would need to be extracted, cleaned, and disposed of during construction would be minimal.

Construction of Alternative 1 with the Montebello At-Grade Option would still require replacement bridge piers in the Rio Hondo Spreading Grounds and the San Gabriel River. As described for the base Alternative 1, if the bridge piers are larger in area, there would potentially be significant impacts on

groundwater supplies and recharge. Implementation of MM HWQ-2, as summarized above and discussed in **Section 3.9.7**, would compensate for potential loss of flood storage and infiltration potential due to placement of the bridge piers, which would reduce impacts to less than significant.

Construction in the Rio Hondo Spreading Grounds and San Gabriel River also has the potential to disturb and compact soils that could affect groundwater recharge and cause erosion. A construction permit from LACDPW would dictate approaches for minimizing construction-related impacts on the spreading basins. BMPs required by this permit are also set forth in PM HWQ-2, as discussed in **Section 3.9.7.1**. Given compliance with permit requirements, construction of Alternative 1 with the Montebello At-Grade Option would have less than significant impacts on groundwater supplies and recharge from ground disturbance and soil compaction.

3.9.6.2.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not cross the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River. The underground alignment would not affect groundwater movement or infiltration as it would likely be above the groundwater table. Thus, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not impact groundwater supplies or recharge.

Construction Impacts

Base Alternative and Design Option

Under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option, construction activities would be temporary and would not significantly impact the recharge capabilities of the watershed as there would be a negligible increase in impervious surface area compared to the existing condition. Furthermore, no construction would occur in the Rio Hondo Spreading Grounds or the San Gabriel River where most of the groundwater replenishment occurs.

Dewatering activities have the potential to lower the groundwater table and contaminate groundwater resources. However, the closest groundwater well is approximately 1,800 feet away from the base Alternative 2 underground guideway and the Atlantic/Pomona Station Option, which shifts the guideway slightly to the east of Atlantic Boulevard between Beverly Boulevard and 4th Street. Thus, dewatering would not be expected to affect groundwater wells. Additionally, groundwater depths are relatively deep near the underground alignment, which would reduce the likelihood that groundwater would be encountered during construction of the tunnel. Since the water table would likely be below or at the lower level of construction activities, the amount of water that would need to be extracted, cleaned, and disposed of during construction would be minimal.

Thus, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have less than significant impacts on groundwater recharge and groundwater supplies.

3.9.6.2.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not cross the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River. The underground alignment would not affect groundwater movement or infiltration as it would likely be above the groundwater table. Thus, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not impact groundwater supplies or recharge.

Construction Impacts

Base Alternative and Design Options

Under the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option, construction activities would be temporary and would not significantly impact the recharge capabilities of the watershed as there would be a minimal increase in impervious surface area as compared to the existing condition. Furthermore, no construction would occur in the Rio Hondo Spreading Grounds or San Gabriel River where most of the groundwater recharge occurs.

Dewatering activities have the potential to lower the groundwater table and contaminate groundwater resources. However, the closest groundwater well is approximately 1,800 feet away from the base Alternative 3 underground guideway and the Atlantic/Pomona Station Option, which shifts the guideway slightly to the east of Atlantic Boulevard. Thus, dewatering would not be expected to affect groundwater wells. Additionally, groundwater depths are relatively deep near the underground alignment, which would reduce the likelihood that groundwater would be encountered during construction of the tunnel. Since the water table would likely be below or at the lower level of construction activities, the amount of water that would need to be extracted, cleaned, and disposed of during construction would be minimal.

Thus, construction of Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have less than significant impacts on groundwater recharge and groundwater supplies.

3.9.6.2.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The proposed Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option would be located in impervious areas. Operational activities would not change the amount of impervious surface and would not affect the Rio Hondo Spreading Grounds or San Gabriel River where most of the groundwater recharge occurs. Thus, operations would have no impacts on groundwater supplies or recharge capacity.

Construction Impacts

MSF Site Options and Design Option

Construction of the Commerce MSF site option, the Montebello MSF site option, and the Montebello MSF At-Grade Option would not require deep excavation or work within Rio Hondo Spreading Grounds where the majority of groundwater recharge occurs. Furthermore, there would be no change in impervious surface area from construction. Thus, construction would have no impact on groundwater recharge or supplies.

3.9.6.3 Impact HWQ-3: Drainage Patterns

Impact HWQ-3: Would a Build Alternative substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) **Result in a substantial erosion or siltation on- or off-site?**

ii) **Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?**

iii) **Exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?**

iv) **Impede or redirect flood flows?**

3.9.6.3.1 Alternative 1 Washington

Operational Impacts

Operations would not result in substantial erosion or siltation or substantially alter the course of any streams or rivers. The replacement of bridge piers in the Rio Hondo Spreading Grounds and San Gabriel River would result in a minimal increase in impervious surface but this would not substantially alter existing drainage patterns of either the site or area and would not alter the course of a stream or river, as discussed below.

Erosion and Siltation

Ground-disturbing activities have the potential to generate erosion and siltation. Operation of Alternative 1 would not result in ground disturbance or a change in the amount of exposed soil as compared to existing conditions and there would be no change in erosion or siltation. Additionally, the Project would comply with post-construction measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). The potential slight increase in the size of the bridge piers would not result in substantial erosion or siltation during operation of Alternative 1 as the increase in impervious surface from the bridge piers would be minimal. Therefore, operation of Alternative 1 would not result in erosion on- or off-site and impacts would be less than significant.

Surface Runoff

Under operation of Alternative 1, there would be a minimal increase in impervious surface, which could increase the rate or amount of stormwater runoff within the DSA of Alternative 1. Operation of Alternative 1 would comply with post-construction measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Therefore, operation of Alternative 1 would not substantially change the rate or amount of surface runoff in a manner that would result in flooding on- or off-site and impacts would be less than significant.

Stormwater Drainage

Under operation of Alternative 1, there would be a minimal increase in impervious surface. This could affect stormwater drainage within the DSA by reducing the area that allows for infiltration and concentrating pollutants, which can be transferred into nearby water bodies via stormwater runoff. Operation of Alternative 1 would comply with post-construction and erosion control measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). The Project would require additional permanent stormwater infrastructure, which would comply with LACDPW and Metro drainage standards (MRDC 3.3.2 and 3.8). The potential slight increase in the size of the bridge piers would not affect stormwater drainage as the increase in impervious surface from the bridge piers would be minimal. Therefore, operation of Alternative 1 would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff and impacts would be less than significant.

Flood Flows

Small portions of Alternative 1, including the areas where the alignment crosses the Rio Hondo, Rio Hondo Spreading Grounds, and the San Gabriel River, would be operated in or near 100-year and 500-year floodplain areas. Operation of LRT, specifically the placement of bridge piers within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River, could impede or redirect flood flows in these areas. The potential slight increase in the size of the bridge piers would not impede or redirect flood flows because compensatory mitigation during construction (MM HWQ-2) would allow flood waters to flow freely into and out of the storage area in a similar manner as pre-Project conditions. Therefore, operation of Alternative 1 would not impede or redirect flood flows and impacts would be less than significant.

Design Options

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option would not affect drainage patterns differently than the base Alternative 1.

Ground-disturbing activities have the potential to generate erosion and siltation. Operation of Alternative 1 with the Atlantic/Pomona Station Option would not result in ground disturbance and there would be no change in erosion or siltation. Additionally, the Project would comply with post-construction measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**).

Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would not result in substantial erosion on- or off-site and impacts would be less than significant.

Under operation of Alternative 1 with the Atlantic/Pomona Station Option, there would be a minimal increase in impervious surface, which could increase the rate or amount of stormwater runoff within the DSA of Alternative 1. Operations would comply with post-construction measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would not substantially change the rate or amount of surface runoff in a manner that would result in flooding on- or off-site and impacts would be less than significant.

The Project would require additional permanent stormwater infrastructure, which would be operated in compliance with LACDPW and Metro drainage standards (MRDC 3.3.2 and 3.8). Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff and impacts would be less than significant.

Small portions of Alternative 1 with the Atlantic/Pomona Station Option would be operated in or near 100-year and 500-year floodplain areas. Operation of LRT, specifically the placement of bridge piers within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River, could impede or redirect flood flows in these areas. The potential slight increase in the size of the bridge piers would not affect flood flows because compensatory mitigation implemented during construction (MM HWQ-2) would allow flood waters to flow freely into and out of the storage area in a similar manner as pre-Project conditions. Thus, operation of Alternative 1 with the Atlantic/Pomona Station Option would not impede or redirect flood flows and impacts would be less than significant.

Montebello At-Grade Option

Operation of Alternative 1 with the Montebello At-Grade Option would not affect drainage patterns differently than the base Alternative 1.

Ground-disturbing activities have the potential to generate erosion and siltation. Operation of Alternative 1 with the Montebello At-Grade Option would not result in ground disturbance and there would be no change in erosion or siltation. Additionally, the Project would comply with post-construction measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Therefore, operation of Alternative 1 with the Montebello At-Grade Option would not result in substantial erosion on- or off-site and impacts would be less than significant.

Under operation of Alternative 1 with the Montebello At-Grade Option, there would be a minimal increase in impervious surface, which could increase the rate or amount of stormwater runoff within the DSA of Alternative 1. Operations would comply with post-construction measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Therefore, operation of Alternative 1 with the Montebello At-Grade Option would not substantially change the rate or amount of surface runoff in a manner that would result in flooding on- or off-site and impacts would be less than significant.

The Project would require additional permanent stormwater infrastructure, which would be operated in compliance with LACDPW and Metro drainage standards (MRDC 3.3.2 and 3.8). Therefore, operation of Alternative 1 with the Montebello At-Grade Option would not exceed the capacity of

existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff and impacts would be less than significant.

Small portions of Alternative 1 with the Montebello At-Grade Option would be operated in or near 100-year and 500-year floodplain areas. Operation of LRT, specifically the placement of bridge piers within the Rio Hondo Spreading Grounds, Rio Hondo, and San Gabriel River, could impede or redirect flood flows in these areas. The potential slight increase in the size of the bridge piers would not affect flood flows because compensatory mitigation implemented during construction (MM HWQ-2) would allow flood waters to flow freely into and out of the storage area in a similar manner as pre-Project conditions. Thus, operation of Alternative 1 with the Montebello At-Grade Option would not impede or redirect flood flows and impacts would be less than significant.

Construction Impacts

Construction of Alternative 1 would not substantially alter the course of any streams or rivers. However, replacement of bridge piers in the Rio Hondo, Rio Hondo Spreading Grounds, and the San Gabriel River would require a Section 1602 Lake and Streambed Alteration Agreement with CDFW.

Erosion and Siltation

Construction of Alternative 1 could increase erosion and sedimentation around proposed construction and staging areas, particularly during ground disturbing activities such as excavation and grading. To reduce potential impacts related to erosion and siltation, a SWPPP would be prepared in compliance with SWRCB's Construction General Permit and an erosion and sediment control plan would be prepared in compliance with LARWQCB's MS4 permit. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**). Additionally, the topography of the DSA of Alternative 1 is relatively flat, which would minimize the risk of erosion and siltation impacts along Alternative 1. At the close of construction, areas of exposed soil that were previously paved would be restored to a paved condition.

The risk of increased erosion and sedimentation is of particular concern at the Rio Hondo Spreading Grounds and San Gabriel River, which have soft, dirt bottoms with more potential for erosion and sedimentation. Construction occurring near the rivers would likely include activities such as excavation of abutments and foundation installation, as detailed in Appendix P. As set forth in PM HWQ-3, construction work within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River would be scheduled to occur in the dry season when there is no water, to the extent feasible. However, if construction occurs when water is present, significant erosion and siltation impacts could occur. Implementation of MM HWQ-1, which requires construction work to be isolated if water is present as discussed in **Section 3.9.7**, would reduce the potential for construction to cause erosion and siltation in water, and would thus reduce impacts to less than significant.

Surface Runoff

Under construction of Alternative 1, there would be a minimal increase in impervious surface, which could increase the rate or amount of stormwater runoff within the DSA. Some small areas of pervious surface, such as landscaped medians along the alignment, may be replaced by impervious surface; however, this would not result in a notable change in surface runoff as these areas would be minimal and the majority of the DSA is currently developed with urban land uses.

Additionally, the replacement of bridge piers in the Rio Hondo Spreading Grounds and San Gabriel River may add a minimal amount of impervious surface to these areas if the piers have a larger area than the existing piers. This would be determined during the final design of the bridge. The replacement bridges would be wider than the existing bridges to accommodate the light rail guideway. This potential increase in impervious surface from wider bridges would only affect infiltration of rainwater that falls directly on the bridges because the amount of pervious surface below would not change and would still allow for infiltration of runoff. A construction permit from the county would be necessary. Compliance with permit requirements would minimize construction impacts related to surface runoff. Therefore, construction of Alternative 1 would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site and impacts would be less than significant.

Stormwater Drainage

As described in **Section 3.9.5.4**, there is extensive engineered stormwater drainage infrastructure in the DSA. Surface runoff in the watershed is carried through municipal infrastructure to the Rio Hondo and San Gabriel River and ultimately to the Pacific Ocean. Construction activities could affect drainage infrastructure. However, construction would be temporary and would avoid these drainage structures along most of the alignment, so substantial alterations to existing drainages would not occur. Storm drains affected by the Project would be connected to municipal systems per MRDC 3.3.2 and 3.8. Drainage systems for the Project, including storm drains, would be constructed per MRDC Section 8.2.5.

Prior to issuance of any grading or building permits, the Los Angeles County Building and Safety Division and other applicable local jurisdictions must determine whether plans comply with applicable codes, such as LID requirements. The contractor would be responsible for preparing the drainage and grading plans and obtaining approval of the plans prior to the start of construction. Implementation of the drainage and grading plans and associated BMPs is also set forth in PM HWQ-2, discussed in **Section 3.9.7.1**.

Where the alignment switches to at-grade at Montebello Boulevard, the LRT would be constructed in the middle of the existing street; therefore, the street would need to be widened and stormwater infrastructure would be relocated. Road widening may occur at other locations along Alternative 1, such as the intersection at the San Gabriel River crossing and the intersection with Pioneer Boulevard. Relocation of drainage infrastructure would occur in compliance with MRDC 3.3.2 and 3.8 and LACDPW requirements and would not impact the direction, flow, or capacity of the stormwater drainage system. Thus, construction of Alternative 1 would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; impacts would be less than significant.

Flood Flows

The majority of Alternative 1 would be constructed outside of the floodplain in a FEMA-defined flood zone X (area of minimal flood risk) or flood zone X shaded (area of reduced flood risk due to a levee). Thus, construction in these areas would not impede or redirect flood flows and no impact would occur.

Alternative 1 passes over the Rio Hondo (within a 500-year flood zone X [shaded] in the spreading grounds and 100-year flood zone A in the river) and the San Gabriel River (within flood zone A).

Construction would result in tracks running on existing roadways that traverse the flood zone areas. Executive Order 11988 would apply to the Project because federal permits, including the CWA Section 404 and RHA Section 408 permits, would be required for work within flood control areas, as discussed below. Compliance with MM HWQ-2, which requires compensatory mitigation as detailed below, would ensure compliance with Executive Order 11988. Further, construction activities would not expose people or structures to a significant risk of loss, injury, or death involving flooding because construction would be temporary and the contractor would establish evacuation routes and protocols in the case of a flood.

Construction of Alternative 1 would involve construction across the Rio Hondo and San Gabriel River and the Rio Hondo Spreading Grounds. The bridges would be demolished and replaced with new wider bridges that carry both the LRT facility and the roadway. The Rio Hondo replacement bridge would include one column in the Rio Hondo and one column in the spreading grounds. The new San Gabriel River bridge would have a substructure on deep foundations and piers located within the stream banks. A total of four bridge piers within the San Gabriel River would be replaced. Wider bridge supports or bridge piers with a different shape or configuration from the existing condition may alter flood flows or reduce the flood protection capacity of the rivers and the spreading grounds.

The replacement of the bridge piers would affect flood control areas, including the channels of the Rio Hondo and San Gabriel River and the Rio Hondo Spreading Grounds. The replacement bridge piers would be larger than the existing bridge piers, which could reduce flood storage capacity in the flood control areas. The replacement of bridge piers would require CWA Section 404 and RHA Section 408 Permits from USACE, thereby ensuring that the discharge of dredged and fill materials into the rivers would be regulated and that construction would not be injurious to the public interest and would not impair the usefulness of the flood control area. Additionally, construction would comply with local floodplain ordinances of Los Angeles County and the cities of Montebello and Pico Rivera that seek to regulate construction and development activities that may increase flood hazards and damage from flooding, as discussed in Appendix J. However, construction of Alternative 1, without compensatory mitigation, would still have a potentially significant impact on flood flows because the loss of flood storage could cause flood heights or flooded areas to increase because there would be less area for the floodwaters within the flood control area. Implementation of MM HWQ-2, which would require compensatory flood storage to be provided as discussed in **Section 3.9.7**, would reduce impacts on flood flows to less than significant.

Design Options

Atlantic/Pomona Station Option

Construction of Alternative 1 with the Atlantic/Pomona Station Option would not affect drainage patterns differently from the base Alternative 1.

Erosion and Siltation

Construction of Alternative 1 with the Atlantic/Pomona Station Option could increase erosion and sedimentation around proposed construction and staging areas particularly during ground disturbing activities such as excavation and grading. Construction would comply with applicable NPDES permits and a SWPPP would be prepared. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**). Additionally, the topography of the DSA of Alternative 1 is relatively flat, which would minimize the risk

of erosion and siltation impacts from construction. Exposed soils would be restored to a paved or vegetated state at the close of construction.

The risk of increased erosion and sedimentation is of particular concern at the Rio Hondo Spreading Grounds and San Gabriel River. Construction occurring near the rivers would likely include activities such as excavation of abutments and foundation installation, as detailed in Appendix P. As set forth in PM HWQ-3, construction work within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River would be scheduled to occur in the dry season when there is no water, to the extent feasible. However, if construction occurs when water is present, significant erosion and siltation impacts could occur. Implementation of MM HWQ-1, as summarized above and discussed in **Section 3.9.7**, would reduce the potential for construction to cause erosion and siltation in water and would thus reduce impacts to less than significant.

Surface Runoff

Under construction of Alternative 1 with the Atlantic/Pomona Station Option, there would be a minimal increase in impervious surface, which could increase the rate or amount of stormwater runoff within the DSA. Additionally, the replacement of bridge piers in the Rio Hondo Spreading Grounds and San Gabriel River may add a minimal amount of impervious surface to these areas if the piers have a larger area than the existing piers. The replacement bridges would be wider than the existing bridges to accommodate the light rail guideway. This potential increase in impervious surface from wider bridges would only affect infiltration of rainwater that falls directly on the bridges because the amount of pervious surface below would not change and would still allow for infiltration of runoff. A construction permit from the county would be necessary and would include approaches for minimizing construction-related impacts. Therefore, construction of Alternative 1 with the Atlantic/Pomona Station Option would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site and impacts would be less than significant.

Stormwater Drainage

Construction of Alternative 1 with the Atlantic/Pomona Station Option could affect drainage infrastructure; however, construction would be temporary and would avoid drainage structures along most of the alignment, so substantial alterations to existing drainages would not occur. Storm drains affected by the Project would be connected to municipal systems per MRDC 3.3.2 and 3.8. Drainage systems for the Project, including storm drains, would be constructed per MRDC Section 8.2.5. The contractor would be responsible for preparing the drainage and grading plans and obtaining approval of the plans prior to the start of construction. Implementation of the drainage and grading plans and associated BMPs is also set forth in PM HWQ-2, discussed in **Section 3.9.7.1**. Thus, construction of Alternative 1 with the Atlantic/Pomona Station Option would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; impacts would be less than significant.

Flood Flows

The majority of Alternative 1, including the Atlantic/Pomona Station Option, would be constructed outside of the floodplain in a FEMA-defined flood zone X (area of minimal flood risk) or flood zone X shaded (area of reduced flood risk due to a levee). Thus, construction in these areas would not impede or redirect flood flows and no impact would occur.

Alternative 1 passes over the Rio Hondo (within a 500-year flood zone X shaded in the spreading grounds and 100-year flood zone A in the river) and the San Gabriel River (flood zone A). Executive Order 11988 applies to development in base flood areas, which are defined as those areas which are within the 100-year floodplain. Compliance with MM HWQ-2, which requires compensatory mitigation as detailed below, would ensure compliance with Executive Order 11988. Further, construction activities would not expose people or structures to a significant risk of loss, injury, or death involving flooding because construction would be temporary and the contractor would establish evacuation routes and protocols in the case of a flood.

The replacement of the bridge piers would affect flood control areas, including the channels of the Rio Hondo and San Gabriel River and the Rio Hondo Spreading Grounds. The replacement bridge piers would be larger than the existing bridge piers, which could reduce flood storage capacity in the flood control areas. The replacement of bridge supports would require CWA Section 404 and RHA 408 Permits from USACE, thereby ensuring that the discharge of dredged and fill materials into the rivers would be regulated and that construction would not be injurious to the public interest and would not impair the usefulness of the flood control area. Additionally, construction would comply with local floodplain ordinances of Los Angeles County and the cities of Montebello and Pico Rivera that seek to regulate construction and development activities that may increase flood hazards and damage from flooding, as discussed in Appendix J. However, construction of Alternative 1 with the Atlantic/Pomona Station Option without compensatory mitigation would have a potentially significant impact on flood flows because the loss of flood storage could cause flood heights or flooded areas to increase because there would be less area for the floodwaters within the flood control area. Implementation of MM HWQ-2, which would require compensatory flood storage to be provided as discussed in **Section 3.9.7**, would reduce impacts to less than significant.

Montebello At-Grade Option

Construction of Alternative 1 with the Montebello At-Grade Option would not affect drainage patterns differently from the base Alternative 1.

Erosion and Siltation

Construction of Alternative 1 with the Montebello At-Grade Option could increase erosion and sedimentation around construction and staging areas particularly during ground disturbing activities such as excavation and grading. Construction would comply with applicable NPDES permits and a SWPPP would be prepared. Implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in **Section 3.9.7.1**. Additionally, the topography of the DSA of Alternative 1 is relatively flat, which would minimize the risk of erosion and siltation impacts from construction. At the close of construction, exposed soils would be restored to a paved or vegetated state.

The risk of increased erosion and sedimentation is of particular concern at the Rio Hondo Spreading Grounds and San Gabriel River. Construction occurring near the rivers would likely include activities such as excavation of abutments and foundation installation, as detailed in Appendix P. As set forth in PM HWQ-3, construction work within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River would be scheduled to occur in the dry season when there is no water, to the extent feasible. However, if construction occurs when water is present, significant erosion and siltation impacts could occur. Implementation of MM HWQ-1, as summarized above and discussed in **Section 3.9.7**, would reduce the potential for construction to cause erosion and siltation in water and would thus reduce impacts to less than significant.

Surface Runoff

Under construction of Alternative 1 with the Montebello At-Grade Option, there would be a minimal amount of impervious surface, which could increase the rate or amount of stormwater runoff within the DSA. Additionally, the replacement of bridge piers in the Rio Hondo Spreading Grounds and San Gabriel River may add a minimal amount of impervious surface to these areas if the piers have a larger area than the existing piers. The replacement bridges would be wider than the existing bridges to accommodate the light rail guideway. This potential increase in impervious surface from wider bridges would only affect infiltration of rainwater that falls directly on the bridges because the amount of pervious surface below would not change and would still allow for infiltration of runoff. A construction permit from the county would be necessary and would include approaches for minimizing construction-related impacts. Therefore, construction of Alternative 1 with the Montebello At-Grade Option would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite and impacts would be less than significant.

Stormwater Drainage

If the Montebello At-Grade Option is selected, the roadway within this option location would be widened and drainages may be affected. Relocation of drainage infrastructure would occur in compliance with MRDC 3.3.2 and 3.8 and LACDPW requirements and would not impact the direction, flow, or capacity of the stormwater drainage system. Drainage systems for the Project, including storm drains, would be constructed per MRDC Section 8.2.5. The contractor would be responsible for preparing the drainage and grading plans and obtaining approval of the plans prior to the start of construction. Implementation of the drainage and grading plans and associated BMPs is also set forth in PM HWQ-2, discussed in **Section 3.9.7.1**. Thus, construction of Alternative 1 with the Montebello At-Grade Option would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; impacts would be less than significant.

Flood Flows

The majority of Alternative 1, including the Montebello At-Grade Option, would be constructed outside of the floodplain in a FEMA-defined flood zone X (area of minimal flood risk) or flood zone X shaded (area of reduced flood risk due to a levee). Thus, construction in these areas would not impede or redirect flood flows and no impact would occur.

Alternative 1 passes over the Rio Hondo (within a 500-year flood zone X shaded in the spreading grounds and 100-year flood zone A in the river) and the San Gabriel River (flood zone A). Executive Order 11988 applies to development in base flood areas, which are defined as those areas which are within the 100-year floodplain. Compliance with MM HWQ-2, which requires compensatory mitigation as detailed below, would ensure compliance with Executive Order 11988. Further, construction activities would not expose people or structures to a significant risk of loss, injury, or death involving flooding because construction would be temporary and the contractor would establish evacuation routes and protocols in the case of a flood.

The replacement of the bridge piers would affect flood control areas, including the channels of the Rio Hondo and San Gabriel River and the Rio Hondo Spreading Grounds. The replacement bridge piers would be larger than the existing bridge piers, which could reduce flood storage capacity in the flood control areas. The replacement of bridge supports would require CWA Section 404 and RHA 408 Permits from USACE, thereby ensuring that the discharge of dredged and fill materials into the rivers would be regulated and that construction would not be injurious to the public interest and would not

impair the usefulness of the flood control area. Additionally, construction would comply with local floodplain ordinances of Los Angeles County and the cities of Montebello and Pico Rivera that seek to regulate construction and development activities that may increase flood hazards and damage from flooding, as discussed in Appendix J. However, construction of Alternative 1 with the Montebello At-Grade Option without compensatory mitigation would have a potentially significant impact on flood flows because the loss of flood storage could cause flood heights or flooded areas to increase because there would be less area for the floodwaters within the flood control area. Implementation of MM HWQ-2, which would require compensatory flood storage to be provided as discussed in **Section 3.9.7**, would reduce impacts to less than significant.

3.9.6.3.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operation and construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not cross the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River, and would not alter the course of any streams or river or require a Section 1602 Lake and Streambed Alteration Agreement with CDFW.

Operational Impacts

Base Alternative and Design Option

Erosion and Siltation

Ground-disturbing activities have the potential to generate erosion and siltation. Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not result in ground disturbance and there would be no change in erosion or siltation. Additionally, the Project would comply with post-construction measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not result in substantial erosion on- or off-site and impacts would be less than significant.

Surface Runoff

Under operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option, there would be no increase in impervious surface area as the majority of the alignment would be underground. Thus, impacts related to an increase in impervious surface area, including an increase in the rate or amount of stormwater runoff, would be avoided. Further, the operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would comply with post-construction measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not substantially change the rate or amount of surface runoff in a manner that would result in flooding on- or off-site and impacts would be less than significant.

Stormwater Drainage

Under operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option, there would be no increase in impervious surface area as the majority of the alignment would be underground. Thus, impacts related to an increase in impervious surface area, including a reduction in

infiltration and concentration of pollutants on impervious surfaces, would be avoided. Further, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would comply with post-construction and erosion control measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). The Project would require additional permanent stormwater infrastructure, which would be operated in compliance with LACDPW and Metro drainage standards. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; impacts would be less than significant.

Flood Flows

The base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option are entirely within an area of minimal flood risk (FEMA-defined flood zone X). Thus, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not impede or redirect flood flows and no impacts would occur.

Construction Impacts

Base Alternative and Design Options

Erosion and Siltation

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option could increase erosion and sedimentation around proposed construction and staging areas, particularly during ground disturbing activities, such as excavation and grading. To reduce potential impacts related to erosion and siltation, a SWPPP would be prepared in compliance with SWRCB's Construction General Permit and a sediment and erosion control plan would be prepared in compliance with LARWQCB's MS4 permit. Implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in **Section 3.9.7.1.** Further, the topography of the DSA of Alternative 2 is relatively flat, which would minimize the risk of erosion and siltation impacts along Alternative 2. At the close of construction, areas of exposed soil that were previously paved would be restored to a paved condition. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not result in substantial erosion on- or off-site and impacts would be less than significant.

Surface Runoff

Under construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option, there would not be an increase in impervious surfaces as the majority of the DSA is currently developed and the alignment would be underground. Since the Project takes place on and under primarily impervious land, it would not substantially change the volume or peaks of runoff entering the storm drain system. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site and impacts would be less than significant.

Stormwater Drainage

There is extensive engineered stormwater drainage infrastructure in the DSA. Surface runoff in the watershed is carried through municipal infrastructure to the Rio Hondo and San Gabriel River and

ultimately to the Pacific Ocean. Construction activities could affect this infrastructure. However, construction would be temporary and would avoid these drainage structures along most of the alignment, so substantial alterations to existing drainages would not occur. Additionally, no work would occur within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River. Storm drains affected by the Project would be connected to municipal systems per MRDC 3.3.2 and 3.8. Drainage systems for the Project, including storm drains, would be constructed per MRDC Section 8.2.5. The contractor would be responsible for preparing the drainage and grading plans and obtaining approval of the plans prior to the start of construction.

Prior to issuance of any grading or building permits, the Los Angeles County Building and Safety Division must determine whether plans are in compliance with applicable codes, such as LID requirements. Additionally, permits from other relevant agencies would need to be obtained. The contractor would be responsible for preparing the drainage and grading plans and obtaining approval of the plans prior to the start of construction. Implementation of the drainage and grading plans and associated BMPs is also set forth in PM HWQ-2, discussed in **Section 3.9.7.1**.

Thus, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; impacts would be less than significant.

Flood Flows

The base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option are entirely within an area of minimal flood risk (FEMA-defined flood zone X). Thus, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not impede or redirect flood flows and no impacts would occur.

3.9.6.3.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Operation and construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not cross the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River and would not alter the course of any streams or river or require a Section 1602 Lake and Streambed Alteration Agreement with CDFW.

Base Alternative and Design Options

Erosion and Siltation

Ground-disturbing activities have the potential to generate erosion and siltation. Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not result in ground disturbance and there would be no change in erosion or siltation. Additionally, the project would comply with post-construction measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Therefore, operation of base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not result in substantial erosion on- or off-site and impacts would be less than significant.

Surface Runoff

Under operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option, there would be a minimal increase in impervious surface, which could increase the rate or amount of stormwater runoff within the DSA of Alternative 3. Operations would comply with post-construction measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not substantially change the rate or amount of surface runoff in a manner that would result in flooding on- or off-site and impacts would be less than significant.

Stormwater Drainage

Under operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option, there would be a minimal increase in impervious surface. This could affect stormwater drainage within the DSA by reducing the area that allows for infiltration and concentrating pollutants, which can be transferred into nearby waterbodies via stormwater runoff. Operations would comply with post-construction and erosion control measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). The Project would require additional permanent stormwater infrastructure, which would be operated in compliance with LACDPW and Metro drainage standards (MRDC 3.3.2 and 3.8). Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff and impacts would be less than significant.

Flood Flows

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option is entirely within an area of minimal flood risk (FEMA-defined flood zone X). Thus, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not impede or redirect flood flows and no impacts would occur.

Construction Impacts

Base Alternative and Design Options

Erosion and Siltation

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option could increase erosion and sedimentation around construction and staging areas, particularly during ground disturbing activities, such as excavation and grading. To reduce potential impacts related to erosion and siltation, a SWPPP would be prepared in compliance with SWRCB's Construction General Permit and an erosion and sediment control plan would be prepared in compliance with LARWQCB's MS4 permit. Implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in **Section 3.9.7.1.** Further, the topography of the DSA is relatively flat, which would minimize the risk of erosion and siltation impacts along Alternative 3. At the close of construction, areas of exposed soil

that were previously paved would be restored to a paved condition. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not result in substantial erosion on- or off-site and impacts would be less than significant.

Surface Runoff

Under construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option, there would be a minimal increase in the amount of impervious surface from the conversion of pervious surface, such as landscaped medians along the alignment, to impervious surface. The increase would be minimal because the majority of the DSA is currently developed, and the majority of the alignment would be underground. Since the Project takes place on and under primarily impervious land, it would not substantially increase the volume or peaks of runoff entering the storm drain system. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site and impacts would be less than significant.

Stormwater Drainage

There is extensive engineered stormwater drainage infrastructure in the DSA. Surface runoff in the watershed is carried through municipal infrastructure to the Rio Hondo and San Gabriel River and ultimately to the Pacific Ocean. Construction activities could affect drainage infrastructure. However, construction activities would be temporary and would avoid these drainage structures along most of the alignment; therefore, substantial alterations to existing drainages would not occur. Additionally, no work would occur within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River. Storm drains affected by the Project would be connected to municipal systems per MRDC 3.3.2 and 3.8. Drainage systems for the Project, including storm drains, would be constructed per MRDC Section 8.2.5. The contractor would be responsible for preparing the drainage and grading plans and obtaining approval of the plans prior to the start of construction.

Prior to issuance of any grading or building permits, the Los Angeles County Building and Safety Division must determine whether plans are in compliance with applicable codes, such as LID requirements. Additionally, permits from other relevant agencies would need to be obtained. The contractor would be responsible for preparing the drainage and grading plans and obtaining approval of the plans prior to the start of construction. Implementation of the drainage and grading plans and associated BMPs is also set forth in PM HWQ-2, discussed in **Section 3.9.7.1**.

Thus, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; impacts would be less than significant.

Flood Flows

The base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option are entirely within an area of minimal flood risk (FEMA-defined flood zone X). Thus, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not impede or redirect flood flows and no impacts would occur.

3.9.6.3.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Erosion and Siltation

Ground-disturbing activities have the potential to generate erosion and siltation. Operation of the Commerce MSF site option, Montebello MSF site option, or Montebello MSF At-Grade Option would not result in ground disturbance, so there would be no change in erosion or siltation. Operation of the MSF site options would comply with the SWRCB Construction General Permit post-construction measures, the Industrial General Permit, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Thus, operation of the MSF site options would not result in substantial increases in erosion or siltation and impacts would be less than significant.

Surface Runoff

Under operation of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option, there would be a minimal increase in impervious surface, which could increase the rate or amount of stormwater runoff within the DSAs. Operation of MSF site options would comply with the SWRCB Construction General Permit post-construction measures, the Industrial General Permit, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Thus, operation of the MSF site options would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite and impacts would be less than significant.

Stormwater Drainage

Under operation of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option, there would be a minimal increase in impervious surface. This could affect stormwater drainage within the DSAs by reducing the area that allows for infiltration and concentrating pollutants, which can be transferred into nearby waterbodies via stormwater runoff. Operation of the MSF site options would comply with the SWRCB Construction General Permit post-construction measures, the Industrial General Permit, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Operation of maintenance facilities, including cleaning of vehicles and other activities that have the potential to affect water quality, would conform with MRDC 11.5. Any permanent additions of stormwater infrastructure would be operated in compliance with LACDPW and Metro drainage standards (MRDC 3.3.2 and 3.8). Thus, operation of the MSF site options would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff and impacts would be less than significant.

Flood Flows

The Commerce MSF site option is not located in FEMA-defined 100- or 500-year flood zones; thus, operation of the Commerce MSF site option would not impede or redirect flood flows and no impacts would occur.

The proposed Montebello MSF site option is located in a FEMA-defined 100-year flood zone. This location was historically a rock quarry that collected stormwater and flooded. However, the area has since been developed and no longer floods as stormwater is directed in the municipal stormwater management system. Furthermore, the proposed MSF site option does not contain any natural functions or values of a floodplain. Thus, operation of the Montebello MSF site option or the Montebello MSF At-Grade Option would not impede or redirect flood flows and no impacts would occur.

Construction Impacts

MSF Site Options and Design Option

Erosion and Siltation

Construction of the Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option could increase erosion and sedimentation around construction areas, particularly during ground disturbing activities, such as excavation and grading. The MSF site options are already covered with impervious surfaces and are characterized by flat topography. Construction would comply with the SWRCB Construction General Permit, LID standards, and local policies protecting water quality. Implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in **Section 3.9.7.1.** Thus, construction of the MSF site options would not result in substantial increases in erosion or siltation and impacts would be less than significant.

Surface Runoff

Under construction of the Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option, there would be a minimal increase in the amount of impervious surface. Although the MSF site options are already covered with impervious surfaces and are characterized by flat topography, a minimal amount of pervious surface, such as small, landscaped pockets within the MSF site options, would be converted to impervious surface. Construction would comply with the SWRCB Construction General Permit, LID standards, and local policies protecting water quality. Thus, construction of the MSF site options would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site and impacts would be less than significant.

Stormwater Drainage

Construction activities could affect drainage infrastructure. However, construction activities would be temporary and would avoid these drainage structures. Storm drains affected by the Project would be connected to municipal systems per MRDC 3.3.2 and 3.8. Drainage systems for the Project, including storm drains, would be constructed per MRDC Section 8.2.5. The contractor would be responsible for preparing the drainage and grading plans and obtaining approval of the plans prior to the start of construction. Implementation of the drainage and grading plans and associated BMPs is also set forth in PM HWQ-2, discussed in **Section 3.9.7.1**. Additionally, construction would comply with the SWRCB Construction General Permit, LID standards, and local policies protecting water quality. Thus, construction of the MSF site options would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff and impacts would be less than significant.

Flood Flows

The Commerce MSF site option is entirely within an area of minimal flood risk (FEMA-defined flood zone X). Thus, construction of the Commerce MSF site option would not impede or redirect flood flows and no impacts would occur.

The proposed Montebello MSF site option and the Montebello MSF At-Grade Option are located in a FEMA-defined 100-year flood zone. However, the area is developed and no longer floods as stormwater is directed in the municipal stormwater management system. Furthermore, the proposed MSF site option does not contain any natural functions or values of a floodplain as it is developed. Thus, construction of the Montebello MSF site option or the Montebello MSF At-Grade Option would not impede or redirect flood flows and no impacts would occur.

3.9.6.4 Impact HWQ-4: Inundation

Impact HWQ-4: Would a Build Alternative in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

3.9.6.4.1 Alternative 1 Washington

Operational Impacts

The DSA of Alternative 1 is not located in tsunami or seiche zones. A portion of the tracks (approximately 2.8 miles) are located in the 100-year and 500-year flood zones, including the inundation area below the Whittier Narrows Dam, as shown on **Figure 3.9.3**. The tracks would be at-grade within this area, with the exception of the bridges over the Rio Hondo and San Gabriel River. Operation of the train system would not occur if tracks were inundated by flood waters, as set forth in PM HWQ-4, discussed in **Section 3.9.7.1**. Small amounts of pollutants associated with operation of trains (e.g., oil and grease) may be present on the tracks and these pollutants could become entrained in flood waters if the tracks are inundated. These materials are not acutely hazardous; however, entrainment of pollutants associated with the Project in flood waters would not pose a substantial risk to the public or environment. Further, NPDES permits would require post-construction BMPs, such as the implementation of infiltration BMPs (e.g., vegetated filter strips), to be installed to minimize stormwater pollution; these BMPs would also serve to minimize the risk of pollutant release during flood events. These BMPs are also set forth in PM HWQ-1. Thus, there would be a low potential for the operation of Alternative 1 to release pollutants during inundation and impacts would be less than significant.

Design Options

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option would have similar impacts as the operation of the base Alternative 1. As discussed above, the alignment would be located outside of the limits of tsunami or seiche zones. The location of the Atlantic/Pomona Station Option is not within a designated flood zone and thus this portion of the alignment is not expected to be subject to inundation. Thus, there would be a low potential for the operation of Alternative 1 with the Atlantic/Pomona Station Option to release pollutants during inundation and impacts would be less than significant.

Montebello At-Grade Option

Operation of Alternative 1 with the Montebello At-Grade Option would have similar impacts as the operation of the base Alternative 1. As discussed above, the alignment would be located outside of the limits of tsunami or seiche zones. The location of the Montebello At-Grade Option is not within a designated flood zone and thus this portion of the alignment is not expected to be subject to inundation. Thus, there would be a low potential for the operation of Alternative 1 with the Montebello At-Grade Option to release pollutants during inundation and impacts would be less than significant.

Construction Impacts

The DSA of Alternative 1 is not within tsunami or seiche zones. Some construction would occur in the 100-year and 500-year flood zones, including the inundation area below the Whittier Narrows Dam, as shown on **Figure 3.9.3**. Construction in flood zones could involve the use of materials such as vehicle fuels (both gasoline and diesel), oils, solvents, and transmission fluids. The types and amounts of hazardous materials would vary according to the nature of the activity but would be used in quantities that are typical of the construction industry. These types of materials are not acutely hazardous, and the construction contract documents would require these materials be stored, handled, and disposed of in accordance with state and local regulations and manufacturers' instructions. Further, construction activities would comply with SWRCB's Construction General Permit and LARWQCB's MS4 Permit conditions, such as safe storage of fluids, that would protect against the release of pollutants. Construction materials would be stored at staging areas and would not be used within the rivers or spreading grounds in substantial quantities. If a flood event occurs in the DSA, construction activities would cease, and equipment and materials would be moved to a safe location outside of the floodwaters, as set forth in PM HWQ-4 discussed in **Section 3.9.7.1**. Therefore, construction of Alternative 1 would not occur within areas of inundation and impacts would be less than significant.

Design Options

Atlantic/Pomona Station Option

If the Atlantic/Pomona Station Option is selected for Alternative 1, the DSA of Alternative 1 would not change and would still be located outside of the limits of a tsunami or seiche zone. While the Atlantic/Pomona Station Option would be constructed outside of flood zones, some construction for Alternative 1 would occur in the 100-year and 500-year flood zones associated with the Rio Hondo and its spreading grounds, the San Gabriel River, and the inundation area below the Whittier Narrows Dam (as shown on **Figure 3.9.3**). Construction activities would comply with SWRCB's Construction General Permit and LARWQCB's MS4 Permit, including conditions, such as safe storage of fluids, that would protect against release of pollutants. Additionally, construction materials would be stored at staging areas, would be handled and disposed of in accordance with state and local regulations and manufacturers' instructions, and would not be used within the rivers or spreading grounds in substantial quantities. If a flood event occurs in the DSA, construction activities would cease and equipment and materials would be moved to a safe location outside of the floodwaters, as set forth in PM HWQ-4 discussed in **Section 3.9.7.1**; thus, construction would not occur within areas of inundation. Therefore, construction of Alternative 1 with the Atlantic/Pomona Station Option would not occur within areas of inundation and impacts would be less than significant.

Montebello At-Grade Option

If the Montebello At-Grade Option is selected for Alternative 1, the DSA of Alternative 1 would not change and would still be located outside of the limits of a tsunami or seiche zone. While the Montebello At-Grade Option would be constructed outside of flood zones, some construction for Alternative 1 would occur in the 100-year and 500-year flood zones associated with the Rio Hondo and its spreading grounds, the San Gabriel River, and the inundation area below the Whittier Narrows Dam (as shown on **Figure 3.9.3**). Construction activities would comply with SWRCB's Construction General Permit and LARWQCB's MS4 Permit, including conditions, such as safe storage of fluids, that would protect against release of pollutants. Additionally, construction materials would be stored at staging areas, would be handled and disposed of in accordance with state and local regulations and manufacturers' instructions, and would not be used within the rivers or spreading grounds in substantial quantities. If a flood event occurs in the DSA, construction activities would cease, and equipment and materials would be moved to a safe location outside of the floodwaters, as set forth in PM HWQ-4 discussed in **Section 3.9.7.1**. Therefore, construction of Alternative 1 with the Montebello At-Grade Option would not occur within areas of inundation and impacts would be less than significant.

3.9.6.4.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option and associated facilities (e.g., TPSS, and parking facilities) are not within flood hazard, tsunami, or seiche zones. Thus, there would be no potential for the operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option to release pollutants during inundation and no impacts would occur.

Construction Impacts

Base Alternative and Design Option

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option and associated facilities (e.g., TPSS, and parking facilities), are not within flood hazard, tsunami, or seiche zones. Thus, there would be no potential for the construction of Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option to release pollutants during inundation and no impacts would occur.

3.9.6.4.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option alignment and associated facilities (e.g., TPSS and parking facilities) are not within the limits of flood hazard, tsunami, or seiche zones. Thus, there would be no potential for the

operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option to release pollutants during inundation and no impacts would occur.

Construction Impacts

Base Alternative and Design Options

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option and associated facilities (e.g., TPSS and parking facilities) are not within flood hazard, tsunami, or seiche zones. Thus, there would be no potential for the construction of Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option to release pollutants during inundation and no impacts would occur.

3.9.6.4.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option are not within the limits of flood hazard, tsunami, or seiche zones. Thus, there would be no potential for operation of the MSF site options to release pollutants during inundation and no impacts would occur.

Construction Impacts

MSF Site Options and Design Option

The Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option are not within flood hazard, tsunami, or seiche zones. Thus, there would be no potential for the construction of the MSF site options to release pollutants during inundation and no impacts would occur.

3.9.6.5 Impact HWQ-5: Water Management

Impact HWQ-5: Would a Build Alternative conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

3.9.6.5.1 Alternative 1 Washington

Operational Impacts

As described in **Section 3.9.5.3.1**, the groundwater basin underlying Alternative 1 is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Operation of Alternative 1 would conflict with the *LA Basin Plan* if it were to degrade beneficial uses of the Rio Hondo or San Gabriel River or result in an exceedance of a TMDL established for those rivers.

The DSA of Alternative 1 includes the Rio Hondo Reach 2 and San Gabriel River Reach 2. Operation of the Project would comply with post-construction measures in NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Compliance with these permits, plans, and policies would ensure that runoff would be minimized, would not contribute to degradation of water quality within the basin, and would meet the TMDL requirements. Therefore, operation of Alternative 1 would not contribute to degradation of beneficial uses or exceed TMDL requirements in the Rio Hondo or San Gabriel River. Operation of Alternative 1 would not conflict with or obstruct implementation of the *LA Basin Plan* and the impact would be less than significant.

Design Options

Atlantic/Pomona Station Option

As with the base Alternative 1, the groundwater basin underlying Alternative 1 with the Atlantic/Pomona Station Option is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Operation of the Project would conflict with the *LA Basin Plan* if it were to degrade beneficial uses of the Rio Hondo or San Gabriel River or result in an exceedance of a TMDL established for those rivers. If the Atlantic/Pomona Station Option is selected under Alternative 1, the DSA of Alternative 1 would still include the Rio Hondo Reach 2 and San Gabriel River Reach 2. Operation of the Project would comply with post-construction measures in NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Compliance with these permits, plans, and policies would ensure that runoff would be minimized, would not contribute to degradation of water quality within the Basin, and would meet the TMDL requirements. Thus, operation of Alternative 1 with the Atlantic/Pomona Station Option would not conflict with or obstruct implementation of the *LA Basin Plan* and the impact would be less than significant.

Montebello At-Grade Option

As with the base Alternative 1, the groundwater basin underlying Alternative 1 with the Montebello At-Grade Option is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Operation of the Project would conflict with the *LA Basin Plan* if it were to degrade beneficial uses of the Rio Hondo or San Gabriel River or result in an exceedance of a TMDL established for those rivers. If the Montebello At-Grade Option is selected under Alternative 1, the DSA of Alternative 1 would not change and would still include the Rio Hondo Reach 2 and San Gabriel River Reach 2. Operation of the Project would comply with post-construction measures in NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Compliance with these permits, plans, and policies would ensure that runoff would be minimized, would not contribute to degradation of water quality within the Basin, and would meet the TMDL requirements. Thus, operation of Alternative 1 with the Montebello At-Grade Option would not conflict with or obstruct implementation of the *LA Basin Plan* and the impact would be less than significant.

Construction Impacts

As described in **Section 3.9.5.3.1**, the groundwater basin underlying Alternative 1 is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Construction of the Project would conflict with the *LA Basin Plan* if it were to degrade beneficial uses of the Rio Hondo or San Gabriel River or result in an exceedance of a TMDL established for those rivers. Construction activities that disturb the ground, such as excavation and grading, have the potential to increase erosion and sedimentation around proposed construction and staging areas. Construction would comply with the SWRCB's NPDES Construction General Permit, a SWPPP, and erosion and sediment control plan. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**). Further, only a minimal increase in impervious surface would occur during construction.

Construction activities associated with replacing bridge piers have the potential to cause erosion and generate turbidity if work occurs in water. As set forth by PM HWQ-3, construction work would occur in the dry season to the extent feasible. However, if work occurs when water is present in the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River, activities may generate turbidity and release contaminants in the water and significant water quality impacts could occur. Implementation of MM HWQ-1, as summarized in **Section 3.9.6.3.1** and discussed in **Section 3.9.7**, would reduce the potential for construction to cause erosion and siltation in water and would thus reduce impacts to less than significant.

As discussed in **Section 3.9.6.1.1**, if groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

As discussed in **Section 3.9.6.1.1**, construction of Alternative 1 with the Atlantic/Pomona Station Option could encounter groundwater contaminated with hazardous materials from sources such as underground storage tanks. Thus, construction may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

Thus, the implementation of MM HWQ-1, MM HAZ-2, and MM HAZ-3 would ensure that construction of Alternative 1 would not conflict with the *LA Basin Plan*. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

Design Options

Atlantic/Pomona Station Option

As described in **Section 3.9.5.3.1**, the groundwater basin underlying Alternative 1 with the Atlantic/Pomona Station Option is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Construction of Alternative 1 with the Atlantic/Pomona Station Option would have the same effects as the construction of the base Alternative 1. Construction would comply with the SWRCB's NPDES Construction General Permit, a SWPPP, and erosion and sediment control plan. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**). Further, only a minimal increase in impervious surface would occur during construction.

Construction activities associated with replacing bridge piers have the potential to cause erosion and generate turbidity if work occurs in water. As set forth by PM HWQ-3, construction work would occur in the dry season to the extent feasible. However, if construction occurs when water is present in the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River, activities may generate turbidity and release contaminants in water and significant water quality impacts could occur. Implementation of MM HWQ-1, as summarized in **Section 3.9.6.3.1** and discussed in **Section 3.9.7**, would reduce the potential for construction to cause erosion and siltation in water and would thus reduce impacts to less than significant.

As with the base Alternative 1, if groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. MM HAZ-2, discussed in **Section 3.9.7**, requires the preparation of a Soil and Groundwater Management Plan in consultation with LARWQCB. Implementation of MM HAZ-2, summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

As discussed in **Section 3.9.6.1.1**, construction of Alternative 1 with the Atlantic/Pomona Station Option could encounter groundwater contaminated with hazardous materials from sources such as underground storage tanks. Thus, construction may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

Thus, the implementation of MM HWQ-1, MM HAZ-2, and MM HAZ-3 would ensure that construction of Alternative 1 would not conflict with the *LA Basin Plan*. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

Montebello At-Grade Option

As described in **Section 3.9.5.3.1**, the groundwater basin underlying Alternative 1 with the Montebello At-Grade Option is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Construction of Alternative 1 with the Montebello At-Grade Option would have the same effects as the construction of the base Alternative 1. Construction would comply with the SWRCB's NPDES Construction General Permit, a SWPPP, and erosion and sediment control plan. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**). Further, only a minimal increase in impervious surface would occur during construction.

Construction activities associated with replacing bridge piers have the potential to cause erosion and generate turbidity if work occurs in water. As set forth in PM HWQ-3, construction work would occur in the dry season to the extent feasible. However, if construction occurs when water is present in the Rio

Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River, activities may generate turbidity and release contaminants in water and significant water quality impacts could occur. Implementation of MM HWQ-1, as summarized in **Section 3.9.6.3.1** and discussed in **Section 3.9.7**, would reduce the potential for construction to cause erosion and siltation in water and would thus reduce impacts to less than significant.

As with the base Alternative 1, if groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

As discussed in **Section 3.9.6.1.1**, construction of Alternative 1 with the Montebello At-Grade Option could encounter groundwater contaminated with hazardous materials from sources such as underground storage tanks. Thus, construction may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

Thus, the implementation of MM HWQ-1, MM HAZ-2, and MM HAZ-3 would ensure that construction of Alternative 1 would not conflict with the *LA Basin Plan*. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

3.9.6.5.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

The groundwater basin underlying the base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Operation of the Project would conflict with the *LA Basin Plan* if it were to degrade beneficial uses of the Rio Hondo or San Gabriel River or result in an exceedance of a TMDL established for those rivers. The base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option are not near the Rio Hondo Reach 2 or San Gabriel River Reach 2. Operation of the Project would comply with post-construction measures in NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Compliance with these permits, plans, and policies would ensure that runoff and wastewater from the project site would not contribute to degradation of water quality within the Basin and would meet the LARWQCB TMDL requirements.

Based on the above, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not conflict with or obstruct implementation of the *LA Basin Plan*. The impact would be less than significant.

Construction Impacts

Base Alternative and Design Option

The groundwater basin underlying the base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Construction of the Project would conflict with the *LA Basin Plan* if it were to degrade beneficial uses of the Rio Hondo or San Gabriel River or result in an exceedance of a TMDL established for those rivers. The base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option are not near the Rio Hondo Reach 2 or San Gabriel River Reach 2. Construction activities that disturb the ground, such as excavation and grading, have the potential to increase erosion and sedimentation around proposed construction and staging areas. Construction would comply with the SWRCB Construction General Permit and SWPPP, the MS4 permit, waste discharge requirements, LID standards, and local policies protecting water quality. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**). Further, construction would not add impervious surface to the DSA of Alternative 2, as the alignment would be underground and the majority of the DSA is already highly developed.

As discussed in **Section 3.9.6.1.2**, if groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

As discussed in **Section 3.9.6.1.2**, construction of the base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option could encounter groundwater contaminated with hazardous materials from sources such as underground storage tanks. Thus, construction may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

Thus, the implementation of MM HAZ-2 and MM HAZ-3 would ensure that construction of the base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option would not conflict with the *LA Basin Plan*. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

3.9.6.5.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

The groundwater basin underlying the base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Operation of the Project would conflict with the *LA Basin Plan* if it were to degrade beneficial uses of the Rio Hondo or San Gabriel River or result in an exceedance of a TMDL established for those rivers. The base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would terminate near the Rio Hondo and would not be near the San Gabriel River. Operation of the Project would comply with post-construction measures in NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Compliance with these permits, plans, and policies would ensure that runoff and wastewater from the Project would not contribute to degradation of water quality within the Basin and would meet the LARWQCB TMDL requirements.

Based on the above, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not conflict with or obstruct implementation of the *LA Basin Plan*. The impact would be less than significant.

Construction Impacts

Base Alternative and Design Options

The groundwater basin underlying the base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Construction of the Project would conflict with the *LA Basin Plan* if it were to degrade beneficial uses of the Rio Hondo or San Gabriel River or result in an exceedance of a TMDL established for those rivers. The base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would terminate near the Rio Hondo and would not be near the San Gabriel River. Construction activities that disturb the ground, such as excavation and grading, have the potential to increase erosion and sedimentation around proposed construction and staging areas. Construction would comply with the SWRCB Construction General Permit and SWPPP, the MS4 permit, waste discharge requirements, LID standards, and local policies protecting water quality. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**). Further, construction would not add a substantial amount of impervious surface to the DSA of Alternative 3 as the majority of the alignment would be underground and the majority of the DSA is already highly developed.

As discussed in **Section 3.9.6.1.3**, if groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

As discussed in **Section 3.9.6.1.3**, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option with the Atlantic/Pomona Station Option could encounter groundwater contaminated with hazardous materials from sources such as underground storage tanks. Thus, construction may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

Thus, the implementation of MM HAZ-2 and MM HAZ-3 would ensure that construction of the base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not conflict with the *LA Basin Plan*. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

3.9.6.5.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The groundwater basin underlying the Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option is not subject to a sustainable groundwater management plan; thus, no conflict with a sustainable groundwater management plan would occur.

Operation of maintenance facilities, including cleaning of vehicles and other activities that have the potential to affect water quality, would conform with MRDC 11.5. Operation of the MSF would comply with applicable permits, such as SWRCB's Industrial General Permit and post-construction measures in NPDES permits. Implementation of post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Thus, operation of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would not substantially degrade surface or groundwater quality and would therefore not conflict with or obstruct implementation of the *LA Basin Plan*. The impact would be less than significant.

Construction Impacts

MSF Site Options and Design Option

The groundwater basin underlying the Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option is not subject to a sustainable groundwater management plan; thus, no conflict with a sustainable groundwater management plan would occur.

Construction activities that disturb the ground, such as excavation and grading, have the potential to increase erosion and sedimentation around proposed construction areas. Construction would comply with applicable construction permits, such as the SWRCB Construction General Permit and SWPPP. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**).

As discussed in **Section 3.9.6.1.4**, if groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

As discussed in **Section 3.9.6.1.3**, construction of the MSF site options could encounter groundwater contaminated with hazardous materials from sources such as underground storage tanks. Thus, construction may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized in

Section 3.9.6.1.1 and discussed in **Section 3.9.7**, would minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

Thus, the implementation of MM HAZ-2 and MM HAZ-3 would ensure that construction of the MSF site options would not conflict with the *LA Basin Plan*. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

3.9.7 Project Measures and Mitigation Measures

3.9.7.1 Project Measures

The following project measures are design features, best management practices, or other measures required by law and/or permit approvals. These measures are components of the Project and are applicable to all Build Alternatives, design options, and MSF site options and MSF design option, unless otherwise noted.

PM HWQ-1: Operational (post-Project) BMPs for the Build Alternatives (may include but shall not be limited to):

- Design efforts to reduce impervious surfaces.
- Treatment of stormwater runoff using infiltration BMPs such as detention basins or tanks, infiltration basins, bioretention facilities media filters, porous pavement, or vegetated filter strips to remove particulate pollutants.

PM HWQ-2: Construction BMPs for the Build Alternatives (may include but shall not be limited to):

- Establishment of an erosion and sediment control plan prior to the initiation of construction activities that includes BMPs such as:
  - Use of natural drainage, detention ponds, sediment ponds, or infiltration pits to allow runoff to collect and to reduce or prevent erosion.
  - Use of barriers to direct and slow the rate of runoff and to filter out large-sized sediments.
  - Use of downdrains or chutes to carry runoff from the top of a slope to the bottom.
  - Control of the use of water for irrigation so as to avoid off-site runoff.
- Development of a SWPPP subject to regular inspections by applicable jurisdictions to ensure compliance. The SWPPP shall include specifications for the following, but shall not be limited to:
  - Properly designed, centralized storage areas to keep hazardous materials fully contained.
  - Keeping spill cleanup materials (e.g., rags, absorbent materials, and secondary containment) at the work site when handling materials.
  - Monitoring program to be implemented by the construction site supervisor that includes both dry and wet weather inspections.

- Implementation of BMPs designed to reduce erosion of exposed soil including, but not limited to, soil stabilization controls, water for dust control, perimeter silt fences, placement of straw wattles, and sediment basins.
    - If ground disturbing activities must take place during the rainy season when the potential for erosion is greater, the BMPs selected shall focus on erosion control and keeping soil and sediment in place.
    - End-of-pipe soil/sediment control measures (e.g., basins and traps) shall be used as secondary measures.
    - Ingress and egress from construction sites shall be carefully controlled to minimize off-site tracking of soil.
- Locating staging areas outside of the spreading grounds and Los Angeles County Department of Public Works (LACDPW) right-of-way (ROW) areas where possible.
- Implementation of drainage and grading plans and BMPs designed to protect water quality such as oil/water separators, catch basin inserts, storm drain inserts, media filtration, and catch basin screens.

PM HWQ-3: Avoidance of In-Water Work (Applies to Alternative 1 only)

- To the extent feasible, construction work within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River shall be scheduled to occur in the dry season when there is no water.

PM HWQ-4: Flood Events (Applies to Alternative 1 Only)

- If a flood event inundates LRT tracks within the DSA of Alternative 1 during operation of the Project, operation of the train system shall not occur.
- If a flood event occurs in the DSA of Alternative 1 during construction of the Project, construction activities shall cease, and equipment and materials shall be moved to a safe location outside of the floodwaters.

3.9.7.2 Mitigation Measures

As identified in **Section 3.9.6**, the Build Alternatives and Build Alternatives with the design option(s) would have potentially significant impacts on hydrology and water quality resources under Impact HWQ-1 (Water Quality), Impact HWQ-2 (Groundwater Supplies and Recharge), Impact HWQ-3(i) (Erosion and Siltation), Impact HWQ-3(iv) (Flood Flows), and Impact HWQ-5 (Water Management). Mitigation measures to reduce the impacts are presented herein. MM HWQ-1 and MM HWQ-2 would apply only to Alternative 1 and Alternative 1 with the design options. MM HAZ-2 and MM HAZ-3 would apply to all Build Alternatives and Build Alternatives with the design option(s). With implementation of mitigation for Impact HWQ-1 (Water Quality), Impact HWQ-2 (Groundwater Supplies and Recharge), Impact HWQ-3(i) (Erosion and Siltation), Impact HWQ-3(iv) (Flood Flows), and Impact HWQ-5 (Water Management), all impacts would be reduced to less than significant for all alternatives and design options.

Following the mitigation measures, **Table 3.9-3** identifies applicable measures and the combined impact after mitigation of the base alternatives with the associated MSF site option(s), and the alternatives with one or both design options (as applicable) with the associated MSF site option(s).

MM HWQ-1: If water is present in the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River, the work area shall be isolated so that construction does not occur in water. The work area isolation method shall be determined through an agreement between Metro and LACFCD and shall involve use of a coffer dam, a by-pass channel, management of the water in the system by LACFCD, or other means.

MM HWQ-2: To compensate for potential loss of flood storage due to placement of LRT bridge piers or enhanced bridge supports in LACDPW flood control facilities, Metro shall construct compensatory mitigation within the impacted flood control facility based on the volume of the flood storage loss and hydraulic analysis. Exact compensatory mitigation requirements shall be determined based on the volume of the loss of flood storage and a hydraulic analysis of the impacts on flood storage and flood flows. The compensatory storage must allow floodwaters to flow freely into and out of the storage area in a similar manner as pre-Project conditions. In general, the compensatory mitigation shall occur at or below the elevation of the impact and the hydraulics of the mitigation design must function to prevent any change in flood elevations upstream of the DSA of Alternative 1. The area chosen for compensatory mitigation must be free draining (e.g., pooled water must be able to flow out of the storage area as floodwaters recede) and shall comply with drainage requirements of LACDPW.

MM HAZ-2: Soil and Groundwater Management Plan. Prior to the issuance of a grading permit, a site-specific soil and groundwater management plan shall be prepared by Metro or Metro's contractor to address handling and disposal of contaminated soil and groundwater prior to demolition, excavation and construction activities. Metro shall consult with the Los Angeles RWQCB, DTSC, and/or other appropriate regulatory agencies to ensure sufficient minimization of risk to human health and the environment is completed. The soil and groundwater management plan shall specify all necessary procedures to ensure the safe handling and disposing of excavated soil, groundwater, and/or dewatering effluent in a manner that is protective of human health and in accordance with federal and state hazardous waste disposal laws, and with state and local stormwater and sanitary sewer requirements. At a minimum, shall include the following:

- Identification and delineation of contaminated areas and procedures for limiting access to such areas to properly trained personnel;
- Step-by-step procedures for handling, excavating, characterizing, and managing excavated soils and dewatering effluent, including procedures for containing, handling, and disposing of hazardous waste, procedures for containing, handling, and disposing of groundwater generated from construction dewatering, the method used to analyze excavated materials and groundwater for hazardous materials likely to be encountered at specific locations, appropriate treatment and/or disposal methods;
- Procedures for notification and reporting, including notifying and reporting to internal management and to local agencies;

- Minimum requirements for site-specific health and safety plans, to protect the general public and workers in the construction area. Prior to the issuance of grading permits, the Soil and Groundwater Management Plan and the results of environmental sampling shall be provided to contractors who shall be responsible for developing their own construction worker health and safety plans (HASPs) and training requirements, per MM HAZ-4 described in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Resources Impacts Report.

- Metro's contractor shall sample groundwater suspected of contamination. If any groundwater is encountered during construction, the contractor will stop work in the vicinity, cordon off the area, and contact Metro and will immediately notify RWQCB. In coordination with the RWQCB, an investigation and remediation plan will be developed in order to protect public health and the environment. Any hazardous or toxic materials will be disposed according to local, state, and federal regulations.

MM HAZ-3 : Contractor Specifications. Metro shall include in its contractor specifications the following requirement relating to hazardous materials:

- During all ground-disturbing activities, the contractor(s) shall inspect the exposed soil and groundwater for obvious signs of contamination, such as odors, stains, or other suspect materials. Qualified personnel shall monitor for volatile organic compounds and other subsurface gases for concentrations exceeding EPA Regional Screening Levels and/or DTSC Screening Levels with a Photoionization Detector. Should signs of unanticipated contamination be encountered, work shall be suspended, and the Los Angeles County Department of Public Health shall be notified, and the area secured. An investigation shall be designed and performed to verify the presence and extent of contamination at the site, and a site-specific soil and groundwater management plan, as described under Mitigation Measure HAZ-2 above, shall be prepared and implemented.

3.9.8 Significance After Mitigation

As identified in **Table 3.9-3,** with implementation of mitigation measures MM HWQ-1, MM HWQ-2, MM HAZ-2, and MM HAZ-3, impacts related to water quality (Impact HWQ-1), groundwater supplies and recharge (Impact HWQ-2), erosion and siltation (Impact HWQ-3[i]), flood flows (Impact HWQ-3[iv]), and water management (Impact HWQ-5) would be reduced to less than significant for all alternatives and design options.

Table 3.9-3. Summary of Mitigation Measures and Impacts After Mitigation

CEQA Impact Topic		Alternative 1: Washington Boulevard								Alternative 2: Commerce/Citadel IOS		Alternative 3: Washington/Greenwood IOS							
		Base Alternative 1[1]		Alternative 1 + Atlantic/Pomona Station Option		Alternative 1 + Montebello At-Grade Option		Alternative 1 + Atlantic/Pomona Station Option + Montebello At-Grade Option		Base Alternative 2[2]	Alternative 2 + Atlantic/ Pomona Station Option	Base Alternative 3[3]		Alternative 3 + Atlantic/Pomona Station Option		Alternative 3 + Montebello At-Grade Option		Alternative 3 + Atlantic/Pomona Station Option + Montebello At-Grade Option	
		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option
HWQ-1 Water Quality	Applicable Mitigation	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
HWQ-2 Groundwater Supplies and Recharge	Applicable Mitigation	MM HWQ-2	MM HWQ-2	MM HWQ-2	MM HWQ-2	MM HWQ-2	MM HWQ-2	MM HWQ-2	MM HWQ-2	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
HWQ-3(i) Erosion and Siltation	Applicable Mitigation	MM HWQ-1	MM HWQ-1	MM HWQ-1	MM HWQ-1	MM HWQ-1	MM HWQ-1	MM HWQ-1	MM HWQ-1	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
HWQ-3(ii) Surface Runoff	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
HWQ-3(iii) Stormwater Drainage	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
HWQ-3(iv) Flood Flows	Applicable Mitigation	MM HWQ-2	MM HWQ-2	MM HWQ-2	MM HWQ-2	MM HWQ-2	MM HWQ-2	MM HWQ-2	MM HWQ-2	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

CEQA Impact Topic		Alternative 1: Washington Boulevard								Alternative 2: Commerce/Citadel IOS		Alternative 3: Washington/Greenwood IOS							
		Base Alternative 1[1]		Alternative 1 + Atlantic/Pomona Station Option		Alternative 1 + Montebello At-Grade Option		Alternative 1 + Atlantic/Pomona Station Option + Montebello At-Grade Option		Base Alternative 2[2]	Alternative 2 + Atlantic/ Pomona Station Option	Base Alternative 3[3]		Alternative 3 + Atlantic/Pomona Station Option		Alternative 3 + Montebello At-Grade Option		Alternative 3 + Atlantic/Pomona Station Option + Montebello At-Grade Option	
		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option
HWQ-4 Inundation	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
HWQ-5 Water Management	Applicable Mitigation	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Source: CDM Smith/AECOM JV, 2022.

Notes:
The Base Alternatives are shaded in light yellow. Design options are not shaded.
1 The Base Alternative 1 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
2 The Base Alternative 2 includes the Atlantic station (reconfigured/relocated).
3 The Base Alternative 3 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
Key:
NI = No Impact LTS = Less Than Significant SU = Significant and Unavoidable