Los Angeles County
Metropolitan Transportation Authority

Appendix J Hydrology and Water Quality Impacts Report

GOLD LINE EASTSIDE TRANSIT CORRIDOR PHASE 2

Prepared for
Los Angeles Metropolitan
Transportation Authority
One Gateway Plaza
Los Angeles, CA 90012

June 2022

Metro

Appendix J

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Prepared for:
Los Angeles County Metropolitan Transportation Authority
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Acronyms

2020 RTP/SCS	Connect SoCal 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy
Act	Water Quality Control Act of 1969
Basin Plans	Water Quality Control Plans
bgs	below ground surface
BMP	Best Management Practice
BNSF	Burlington Northern Santa Fe
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CWA	Clean Water Act
DSA	detailed study area
DWR	Department of Water Resources
EC	Engineer Circular
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EWMP	Enhanced Watershed Management Programs
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GIS	geographic information system
GLAC	Greater Los Angeles County
GSA	general study area
GWR	Groundwater Recharge
I	Interstate
LACDPW	Los Angeles County Department of Public Works

LACFCD	Los Angeles County Flood Control District
LADWP	Los Angeles Department of Water and Power
LARWQCB	Los Angeles Regional Water Quality Control Board
LID	low impact development
IOS	Initial Operating Segment
LA Basin Plan	*Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*
LRT	light rail transit
Metro	Los Angeles County Metropolitan Transportation Authority
MRDC	Metro Rail Design Criteria
MS4	municipal separate storm sewer systems
MSF	maintenance and storage facility
MUN	Municipal and Domestic Supply
MUTCD	Manual of Uniform Traffic Control Devices
NFIP	National Flood Insurance Program
NPDES	National Pollutant Discharge Elimination System
NOI	Notice of Intent
OCS	overhead catenary system
OHWM	ordinary high water mark
PCE	perchloroethylene
PFAS	Per- and Polyfluoroalkyl Substances
PROC	Process Supply
Project	Eastside Transit Corridor Phase 2 Project
REC-1	Water Contact Recreation
RHA	Rivers and Harbors Act
ROW	right-of-way

RWQCB	Regional Water Quality Control Boards
SCAG	Southern California Association of Governments
SGMA	Sustainable Groundwater Management Act
SR	State Route
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TBM	tunnel boring machine
TCE	trichloroethylene
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
TPSS	Traction Power Substation
U.S.	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VMT	Vehicle Miles Traveled
VOC	volatile organic compound
WARM	Warm Freshwater Habitat
WDR	Waste Discharge Requirement
WILD	Wildlife Habitat
WMP	Watershed Management Programs
WRD	Water Replenishment District of Southern California

1.0 INTRODUCTION

This impacts report discusses the Eastside Transit Corridor Phase 2 Project (Project) setting in relation to hydrology and water quality. It describes existing conditions, current applicable regulatory setting, and potential impacts from operation and construction of the Build Alternatives and the No Project Alternative. This study was conducted in compliance with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines, California Code of Regulations Section 15000 et seq.

The Project would extend the Los Angeles County Metropolitan Transportation Authority (Metro) L (Gold) Line, a light rail transit (LRT) line, from its current terminus at the Atlantic Station in the unincorporated community of East Los Angeles to the city of Whittier. It would extend the existing Metro L (Gold) Line approximately 3.2 to 9.0 miles, depending on the Build Alternative.

The Project area of analysis includes a general study area (GSA) that is regional in scope and scale and a detailed study area (DSA) that encompasses an approximately two-mile area from the Project alignment in eastern Los Angeles County. Additionally, specialized study areas were developed, where applicable, within each environmental impact category. The study area for hydrology and water quality is the DSA.

A diverse mix of land uses are located within the GSA and DSA, including single- and multi-family residences, commercial and retail uses, industrial development, parks and recreational, health and medical uses, educational institutions, and vacant land. The Project would traverse densely populated, low-income, and heavily transit-dependent communities with major activity centers within the Gateway Cities subregion of Los Angeles County.

2.0 PROPOSED PROJECT AND ALTERNATIVES

2.1 Project Setting and Description

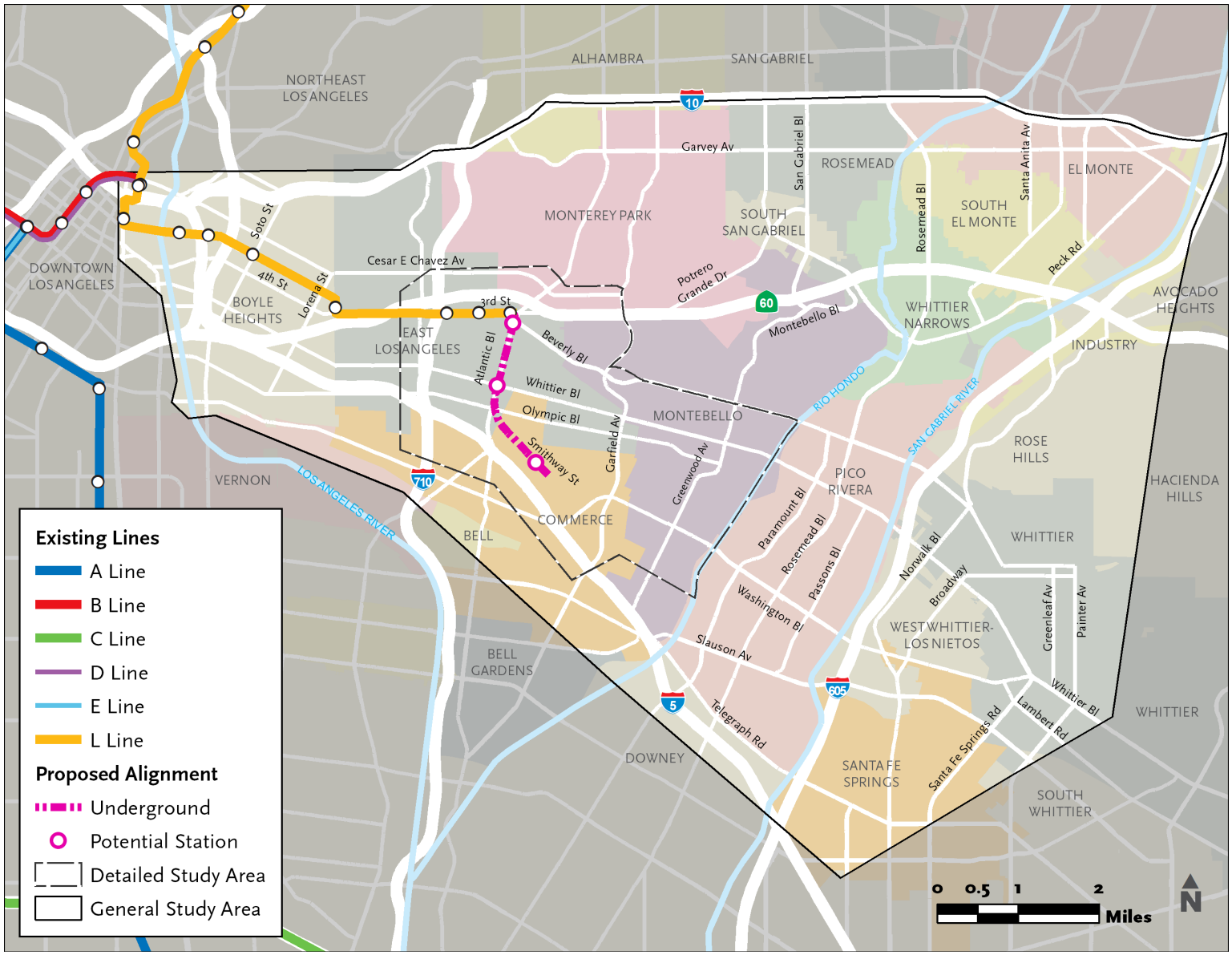
This impacts report evaluates potential environmental impacts of three Build Alternatives and a No Project Alternative. The Build Alternatives are: Alternative 1 Washington (Alternative 1), Alternative 2 Atlantic to Commerce/Citadel Initial Operating Segment (IOS) (Alternative 2), and Alternative 3 Atlantic to Greenwood IOS (Alternative 3).

For purposes of describing the Project, two study areas have been defined. The GSA is regional in scope and scale, whereas the DSA encompasses an approximately two-mile area from the Project alignment's centerline. The GSA is the same for all three of the Build Alternatives. The purpose of the GSA is to establish the study area for environmental resources that are regional in scope and scale, such as regional transportation, including vehicle miles traveled (VMT) and regional travel demands, population, housing, or employment. The GSA consists of several jurisdictions within Los Angeles County including the cities of Bell, Commerce, El Monte, Industry, Los Angeles, Montebello, Monterey Park, Pico Rivera, Rosemead, South El Monte, Santa Fe Springs, Whittier, unincorporated areas of Los Angeles County, which includes East Los Angeles and West Whittier-Los Nietos, and other cities within the San Gabriel Valley. It is generally bounded by Interstate (I) 10 to the north, Peck Road in South El Monte and Lambert Road in Whittier to the east, I-5 and Washington Boulevard to the south, and I-710 to the west. **Figure 2.1**, **Figure 2.2**, and **Figure 2.3** present the boundaries of the GSA for each of the three Build Alternatives.

The DSA establishes a study area to evaluate environmental resources that are more sensitive to the physical location of the Build Alternatives. The DSA for Alternative 1 Washington generally includes the area within a half-mile to two-mile distance from the guideway centerline, as shown in **Figure 2.1**. It encompasses five cities, Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier, and communities of unincorporated East Los Angeles and Whittier-Los Nietos. The DSA for Alternative 2 Atlantic to Commerce/Citadel IOS and Alternative 3 Atlantic to Greenwood IOS, does not extend as far to the east. As shown in **Figure 2.2** and **Figure 2.3** for Alternative 2 and Alternative 3 respectively, the DSA extends to the Rio Hondo and includes Commerce, Montebello, and unincorporated East Los Angeles.

Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 2.1. Alternative 1 Washington GSA and DSA



Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 2.2. Alternative 2 Atlantic to Commerce/Citadel IOS GSA and DSA

Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 2.3. Alternative 3 Atlantic to Greenwood IOS GSA and DSA

2.2 Build Alternatives

This impacts report evaluates the potential environmental impacts of three Build Alternatives which have the same guideway alignment east of the existing terminus at Atlantic Station but vary in length. Alternative 1 has the longest alignment at approximately 9.0 miles with seven stations (one relocated/reconfigured and six new), two maintenance and storage facility (MSF) site options and would terminate at Lambert station on Lambert Road in the city of Whittier. Alternative 2 is approximately 3.2 miles in length with three stations, one MSF site option, and would terminate at the Commerce/Citadel station in the city of Commerce, with non-revenue lead tracks extending further into the city of Commerce to connect to the Commerce MSF site option. Alternative 3 is approximately 4.6 miles in length with four stations, two MSF site options, and would terminate at Greenwood station in the city of Montebello.

There are also design options under consideration for each of the three Build Alternatives that consist of a variation in the design of the relocated/reconfigured Atlantic Station (applicable to Alternatives 1, 2, and 3) and a variation in the station and alignment profile in Montebello (applicable to Alternatives 1 and 3). Construction and operation of one or both design options are considered and evaluated for Alternative 1 and Alternative 3.

To differentiate the impacts evaluation of a Build Alternative with or without the design option(s) incorporated, a Build Alternative without the design option(s) is referred to as the "base Alternative" (i.e., base Alternative 1). A Build Alternative with a design option incorporated is referred to by using the design option name (e.g., Alternative 1 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option). The three Build Alternatives and the design options are described in greater detail below.

2.2.1 Alternative 1 Washington

Alternative 1 would extend the Metro L (Gold) Line LRT approximately 9.0 miles east from the current at-grade station at Atlantic Boulevard to an at-grade terminus at Washington Boulevard/Lambert Road in the city of Whittier. This alternative would include a relocated/reconfigured Atlantic station in an underground configuration and six new stations: Atlantic/Whittier (underground), Commerce/Citadel (underground), Greenwood (aerial), Rosemead (at-grade), Norwalk (at-grade), and Lambert (at-grade). The base Alternative 1 alignment would transition from the existing at-grade alignment to an underground configuration and would transition to an aerial configuration in the city of Commerce before transitioning to at-grade at Montebello Boulevard. The alignment includes approximately 3.0 miles of tunnel, 1.5 miles of aerial, and 4.5 miles of at-grade alignment.

The Alternative 1 alignment crosses the Rio Hondo and San Gabriel River and the Rio Hondo Spreading Grounds. The existing San Gabriel River and Rio Hondo bridges would be replaced with new bridges designed to carry both the LRT facility and the four-lane roadway.

An MSF and other ancillary facilities would also be constructed as part of the Project, including overhead catenary system (OCS), cross passages, ventilation structures, traction power substation (TPSS) sites, crossovers, emergency generators, radio tower poles and equipment shelters, and other supporting facilities along the alignment.

Two design options for Alternative 1 are described below.

2.2.1.1 Guideway Alignment

Under Alternative 1, the guideway would begin at the eastern end of the existing East Los Angeles Civic Center Station, transitioning from at-grade to underground at the intersection of South La Verne Avenue and East 3rd Street. The guideway would turn south and run beneath Atlantic Boulevard to approximately Verona Street and Olympic Boulevard. The underground guideway would then curve southeast, running under Smithway Street near the Citadel Outlets in the city of Commerce. After crossing Saybrook Avenue, the guideway would daylight from underground to an aerial configuration. Depending on the MSF site option that is selected, the aerial guideway would continue parallel to Washington Boulevard, east of Garfield Avenue, and merge into the center median of Washington Boulevard (Commerce MSF site option) or merge into the center median of Washington Boulevard at Gayhart Street (Montebello MSF site option). The alignment would maintain an aerial configuration then transition to an at-grade configuration east of Carob Way and would remain at-grade in the center of Washington Boulevard. The at-grade alignment would terminate at Lambert station in the city of Whittier.

2.2.1.1.1 Design Options

The following design options are being considered for Alternative 1:

Atlantic/Pomona Station Option – The Atlantic/Pomona Station Option would relocate the existing Atlantic Station to a shallow open air underground station with two side platforms and a canopy (**Figure 2.4**). This station design option would be located beneath the existing triangular parcel bounded by Atlantic Boulevard, Pomona Boulevard, and Beverly Boulevard. The excavation depth of the station invert would be approximately 20 to 25 feet from the existing ground elevation.

This option would also impact the guideway alignment and location of the tunnel boring machine (TBM) extraction pit. The underground guideway would be located east of Atlantic Boulevard and require full property acquisitions at its footprint between Beverly Boulevard and 4th Street. The alignment would connect with the base Alternative 2 alignment just north of the proposed Atlantic/Whittier station. The TBM extraction pit would be east of Atlantic Boulevard between Repetto Street and 4th Street. Limits for the excavation would occur between the TBM extraction pit and the intersection of Pomona Boulevard and Beverly Boulevard.

Montebello At-Grade Option – This design option consists of approximately one mile of at-grade guideway along Washington Boulevard between Yates Avenue and Carob Way in the city of Montebello. In this design option, after crossing Saybrook Avenue, the LRT guideway would daylight from underground to an aerial configuration to avoid disrupting existing Burlington Northern Santa Fe (BNSF) Railway tracks. The aerial guideway would continue parallel to Washington Boulevard, then merge into the center median east of Garfield Avenue. At Yates Avenue, the guideway would transition from aerial to an at-grade configuration and remain at-grade until terminating near Lambert Road in the city of Whittier. This design option includes an at-grade Greenwood station located west of Greenwood Avenue. The lead tracks to the MSF site option would also be at-grade. Alternative 1 with the Montebello At-Grade Option would have approximately 3.0 miles of underground, 0.5 miles of aerial, and 5.5 miles of at-grade alignment.

Source: Metro; ACE Team, January 2022.

Figure 2.4. Atlantic/Pomona Station Option

2.2.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Alternative 2 would extend the Metro L (Gold) Line approximately 3.2 miles from the current terminus at Atlantic Boulevard to an underground terminal station at the Commerce/Citadel station in the city of Commerce with lead tracks connecting to the Commerce MSF site option. Alternative 2 would include a relocated/reconfigured Atlantic station and two new stations: Atlantic/Whittier (underground), and Commerce/Citadel (underground). The base Alternative 2 alignment includes approximately 3.0 miles of underground, 0.1 miles of aerial, and 0.1 miles of at-grade alignment.

An MSF and other ancillary facilities would also be constructed as part of the Project, including OCS, tracks, cross passages, ventilation structures, TPSSs, track crossovers, emergency generators, radio tower poles and equipment shelters, and other facilities along the alignment.

2.2.2.1 Guideway Alignment

Under Alternative 2, the guideway would follow the same alignment as under Alternative 1. The guideway would begin at the eastern end of the existing East Los Angeles Civic Center Station, transitioning from at-grade to underground at the intersection of South La Verne Avenue and East 3rd Street. The guideway would turn south and run beneath Atlantic Boulevard to approximately Verona Street and Olympic Boulevard. The underground guideway would then curve southeast, running under Smithway Street near the Citadel Outlets in the city of Commerce. The alignment would terminate at the Commerce/Citadel station with non-revenue lead tracks connecting to the Commerce MSF site option.

2.2.2.1.1 Design Option

One design option, the Atlantic/Pomona Station Option described in **Section 2.2.1.1.1** and shown on **Figure 2.4** is being considered for Alternative 2.

2.2.3 Alternative 3 Atlantic to Greenwood IOS

Alternative 3 would extend the Metro L (Gold) Line approximately 4.6 miles east from the current terminus at Atlantic Boulevard to an aerial terminal station at the Greenwood station in the city of Montebello. This alternative would include a relocated/reconfigured Atlantic station and three new stations: Atlantic/Whittier (underground), Commerce/Citadel (underground), and Greenwood (aerial). The base Alternative 3 alignment includes approximately 3.0 miles of underground, 1.5 miles of aerial, and 0.1 miles of at-grade alignment.

An MSF and other ancillary facilities would also be constructed as part of the Project, including OCS, tracks, cross passages, ventilation structures, TPSSs, track crossovers, emergency generators, radio tower poles and equipment shelters, and other facilities along the alignment.

Two design options for Alternative 3 are described below.

2.2.3.1 Guideway Alignment

Under Alternative 3, the guideway would follow the same alignment as under Alternative 1. The guideway would begin at the eastern end of the existing East Los Angeles Civic Center Station, transitioning from at-grade to underground at the intersection of South La Verne Avenue and East 3rd Street. The guideway would then turn south and run beneath Atlantic Boulevard to approximately Verona Street and Olympic Boulevard. The underground guideway would then curve southeast, running under Smithway Street near the Citadel Outlets in the city of Commerce. After crossing Saybrook Avenue, the guideway would daylight from underground to an aerial configuration. Depending on the MSF site option that is selected, the aerial guideway would continue parallel to Washington Boulevard, east of Garfield Avenue, and merge into the center median of Washington Boulevard (Commerce MSF site option) or merge into the center media of Washington Boulevard at Gayhart Street (Montebello MSF site option). The aerial guideway would terminate at the Greenwood station in the city of Montebello.

2.2.3.1.1 Design Option

Two design options described in **Section 2.2.1.1.1**, the Atlantic/Pomona Station Option and the Montebello At-Grade Option are being considered for Alternative 3. Alternative 3 with the Montebello At-Grade Option would have approximately 3.0 miles of underground, 0.5 miles of aerial, and 1.1 miles of at-grade alignment.

2.3 Maintenance and Storage Facilities

The Project has two MSF site options: the Commerce MSF site option and the Montebello MSF site option. One MSF site option would be constructed. The MSF would provide equipment and facilities to clean, maintain, and repair rail cars, vehicles, tracks, and other components of the system. The MSF would enable storage of light rail vehicles (LRVs) that are not in service and would connect to the mainline with one lead track. The MSF would also provide office space for Metro rail operation staff, administrative staff, and communications support staff. The MSF would be the primary physical employment centers for rail operation employees, including train operators, maintenance workers, supervisors, administrative, security personnel and other roles.

The Commerce MSF site option is located in the city of Commerce, and the Montebello MSF site option is located in the city of Montebello. The Commerce MSF site option is located where it could support any of the three Build Alternatives. The Montebello MSF site option is located where it could support either Alternative 1 or Alternative 3.

2.3.1 Commerce MSF

The Commerce MSF site option is located in the city of Commerce, west of Washington Boulevard and north of Gayhart Street. The site is approximately 24 acres and is bounded by Davie Avenue to the east, Fleet Street to the north, Saybrook Avenue to the west, and an unnamed street to the south. Additional acreage would be needed to accommodate the lead track and construction staging. As shown in a dashed line on **Figure 2.5**, the guideway alignment with the Commerce MSF site option would daylight from an underground to aerial configuration west of the intersection of Gayhart Street

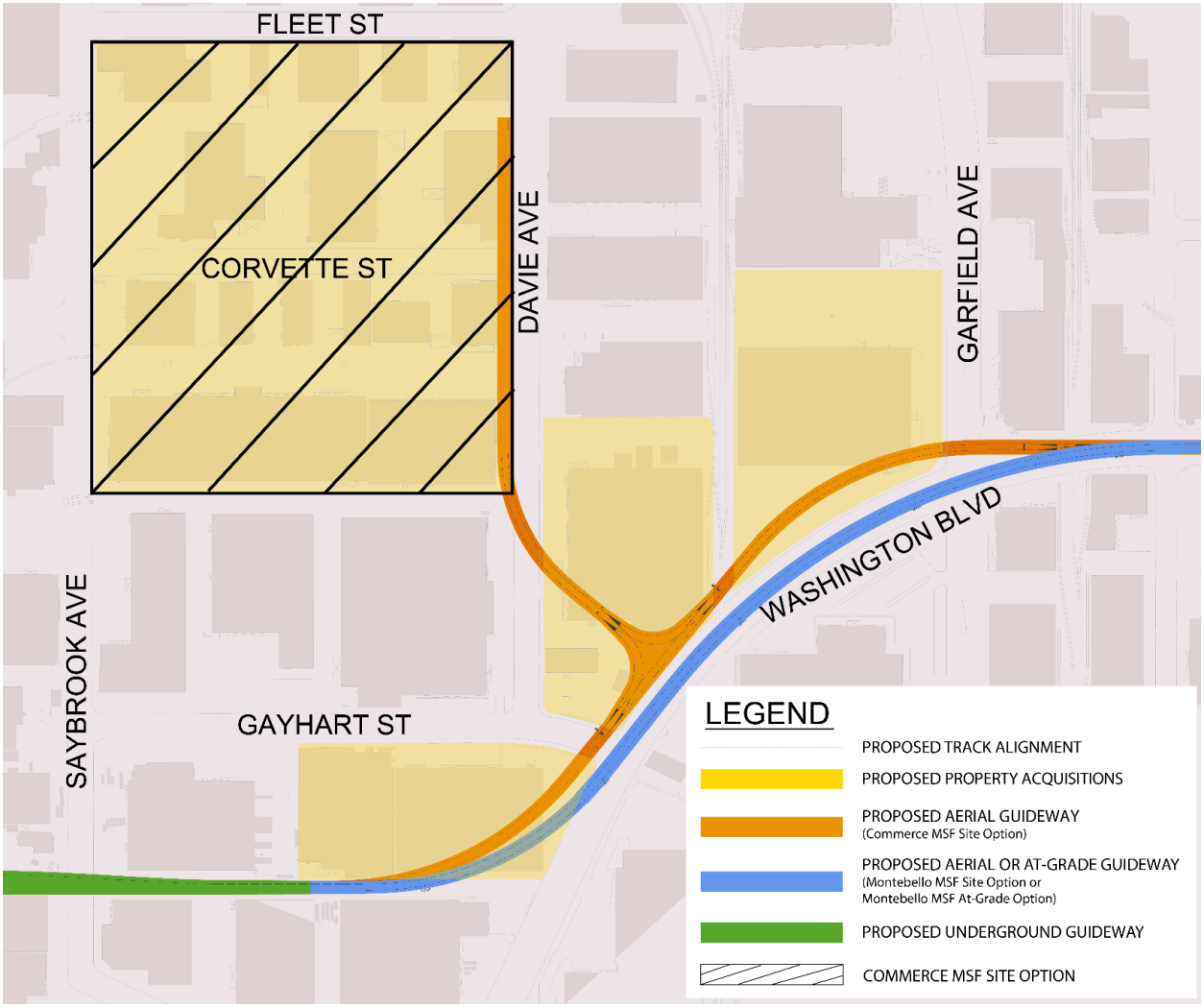
and Washington Boulevard and would run parallel to Washington Boulevard from Gayhart Street to Yates Avenue. The lead tracks to the Commerce MSF site option would be located northeast of the intersection of Gayhart Street and Washington Boulevard and extend in an aerial configuration and then would transition to at-grade within the MSF after crossing Davie Avenue. To construct and operate the Commerce MSF site option, Corvette Street would be permanently closed between Saybrook Avenue and Davie Avenue. Corvette Street is an undivided two-lane road and is functionally classified as a local street under the California Road System. The facility would accommodate storage for approximately 100 LRVs.

2.3.2 Montebello MSF

The Montebello MSF site option is located in the city of Montebello, north of Washington Boulevard and south of Flotilla Street between Yates Avenue and S. Vail Avenue. The site is approximately 30 acres in size and is bounded by S. Vail Avenue to the east, a warehouse structure along the south side of Flotilla Street to the north, Yates Avenue to the west, and a warehouse rail line to the south. Additional acreage would be needed to accommodate the lead track and construction staging. As shown on in a solid line on **Figure 2.5**, as with the Commerce MSF site option, the guideway alignment with the Montebello MSF site option would daylight from an underground to an aerial configuration west of intersection of Gayhart Street and Washington Boulevard. The alignment would be located further east than the alignment with the Commerce MSF site option. The aerial guideway for the Montebello MSF site option would transition to the median of Washington Boulevard at Gayhart Street. Columns that would provide structural support for the aerial guideway would be installed in the median of Washington Boulevard and would require roadway reconfiguration and striping on Washington Boulevard.

The lead tracks would be in an aerial configuration from Washington Boulevard, parallel S. Vail Avenue, and then transition to at-grade as it approaches the MSF. The facility would accommodate storage for approximately 120 LRVs.

The Montebello MSF At-Grade Option includes an at-grade configuration for the lead tracks to the Montebello MSF. This design option would be necessary if the Montebello At-Grade Option is selected under Alternative 1 or Alternative 3. In this design option, the lead tracks would be in an at-grade configuration from Washington Boulevard, paralleling S. Vail Avenue and remain at-grade to connect to the Montebello MSF site option. For this design option, through access on Acco Street to Vail Avenue would be eliminated and cul-de-sacs would be provided on each side of the lead tracks to ensure that access to businesses in this area is maintained. Acco Street is an undivided two-lane road and is functionally classified as a local street under the California Road System.



Source: Metro; ACE Team, January 2022.

Figure 2.5. Montebello MSF S-Curve Alignment

2.4 Ancillary Facilities

The Build Alternatives would require a number of additional elements to support vehicle operations, including but not limited to the OCS, tracks, crossovers, cross passages, ventilation structures, TPSS, train control houses, electric power switches and auxiliary power rooms, communications rooms, radio tower poles and equipment shelters, and an MSF. Alternatives 1, 2, and 3 would have an underground alignment of approximately 3 miles in length between La Verne and Saybrook Avenue. Per Metro's Fire Life Safety Criteria, ventilation shafts and emergency fire exits would be installed along the tunnel portion of the alignment. These would be located at the underground stations or public right-of-way (ROW). The alignment for Alternative 1 and Alternative 3 would travel along the median of the roadway for most of the route. The precise location of ancillary facilities would be determined in a subsequent design phase.

2.5 Proposed Stations

The following stations would be constructed under Alternative 1:

- Atlantic (Relocated/Reconfigured) – The existing Atlantic Station would be relocated and reconfigured to an underground center platform station located beneath Atlantic Boulevard south of Beverly Boulevard in East Los Angeles. The existing parking structure located north of the 3rd Street and Atlantic Boulevard intersection would continue to serve this station.
    - Atlantic Pomona Station Option – The Atlantic/Pomona Station Option would relocate the existing Atlantic Station to a shallow underground open-air station with two side platforms and a canopy. This station design option would be located beneath the existing triangular parcel bounded by Atlantic Boulevard, Pomona Boulevard, and Beverly Boulevard. The existing parking structure located north of the 3rd Street and Atlantic Boulevard intersection would continue to serve this station.
- Atlantic/Whittier – This station would be underground with a center platform located beneath the intersection of Atlantic and Whittier Boulevards in East Los Angeles. Parking would not be provided at this station.
- Commerce/Citadel – This station would be underground with a center platform located beneath Smithway Street near the Citadel Outlets in the city of Commerce. Parking would not be provided at this station.
- Greenwood – This station would be aerial with a side platform located in the median of Washington Boulevard east of Greenwood Avenue in the city of Montebello. This station would provide a surface parking facility near the intersection of Greenwood Avenue and Washington Boulevard.
    - Under the Montebello At-Grade Option, Greenwood station would be an at-grade station located west of the intersection at Greenwood and Washington Boulevard.
- Rosemead – This station would be at-grade with a center platform located in the center of Washington Boulevard west of Rosemead Boulevard in the city of Pico Rivera. This station would provide a surface parking facility near the intersection of Rosemead and Washington Boulevards.
- Norwalk – This station would be at-grade with a center platform located in the median of Washington Boulevard east of Norwalk Boulevard in the city of Santa Fe Springs. This station would provide a surface parking facility near the intersection of Norwalk and Washington Boulevards.
- Lambert – This station would be at-grade with a center platform located south of Washington Boulevard just west of Lambert Road in the city of Whittier. This station would provide a surface parking facility near the intersection of Lambert Road and Washington Boulevard.

Alternative 2 would include Atlantic (Relocated/Reconfigured), Atlantic/Whittier, and Commerce/Citadel stations as described above.

Alternative 3 would include Atlantic (Relocated/Reconfigured), Atlantic/Whittier, Commerce/Citadel, and Greenwood stations as described above.

Station amenities would include items in the Metro Systemwide Station Standards Policy (Metro 2018) such as station pin signs, security cameras, bus shelters, benches, emergency/information telephones, stairs, map cases, fare collection, pedestrian and street lighting, hand railing, station landscaping, trash receptacles, bike racks and lockers, emergency generators, power boxes, fire hydrants, and artwork. Escalators and elevators would be located in aerial and underground stations. Station entry portals would be implemented at underground stations. Station access would be ADA-compliant and also have bicycle and pedestrian connections. Details regarding most of these items, including station area planning and urban design, would be determined at a later phase.

2.6 Description of Construction

Construction of the Project would include a combination of elements dependent upon the locally preferred alternative. The major construction activities include guideway construction (at-grade, aerial, underground); decking and tunnel boring for the underground guideway; station construction; demolition; utility relocation and installation work; street improvements including sidewalk reconstruction and traffic signal installation; retaining walls; LRT operating systems installation including TPSS and OCS; parking facilities; an MSF; and construction of other ancillary facilities. Alternative 1 would include construction of bridge replacements over the San Gabriel and Rio Hondo Rivers.

In addition to adhering to regulatory compliance, the development of the Project would employ conventional construction methods, techniques, and equipment. All work for development of the LRT system would conform to accepted industry specifications and standards, including Best Management Practices (BMP). Project engineering and construction would, at minimum, be completed in conformance with the regulations, guidelines, and criteria, including, but not limited to, Metro Rail Design Criteria (MRDC) (Metro 2018), California Building Code, Metro Operating Rules, and Metro Sustainability Principles.

The construction of the Project is expected to last approximately 60 to 84 months. Construction activities would shift along the corridor so that overall construction activities should be relatively short in duration at any one point. Most construction activities would occur during daytime hours. For specialized construction tasks, it may be necessary to work during nighttime hours to minimize traffic disruptions. Traffic control and pedestrian control during construction would follow local jurisdiction guidelines and the Manual of Uniform Traffic Control Devices (MUTCD) standards. Typical roadway construction traffic control methods and devices would be followed including the use of signage, roadway markings, flagging, and barricades to regulate, warn, or guide road users. Properties adjacent to the Project's alignment would be used for construction staging. The laydown and storage areas for construction equipment and materials would be established in the vicinity of the Project within parking facilities, and/or on parcels that would be acquired for the proposed stations and MSF site options. Construction staging areas would be used to store building materials, construction equipment, assemble the TBM, temporary storage of excavated materials, and serve as temporary field offices for the contractor.

2.7 Description of Operations

The operating hours and schedules for Alternatives 1, 2, and 3 would be comparable to the weekday, Saturday and Sunday, and holiday schedules for the Metro L (Gold) Line (effective 2019). It is anticipated that trains would operate every day from 4:00 am to 1:30 am. On weekdays, trains would operate approximately every 5 to 10 minutes during peak hours, every 10 minutes mid-day and until 8:00 pm, and every 15 minutes in the early morning and after 8:00 pm. On weekends, trains would operate every 10 minutes from 9:00 am to 6:30 pm, every 15 minutes from 7:00 am to 9:00 am and from 6:30 pm to 7:30 pm, and every 20 minutes before 7:00 am and after 7:30 pm. These operational headways are consistent with Metro design requirements for future rail services.

2.8 No Project Alternative

The No Project Alternative establishes impacts that would reasonably be expected to occur in the foreseeable future if the Project were not approved. The No Project Alternative would maintain existing transit service through the year 2042. No new transportation infrastructure would be built within the GSA aside from projects currently under construction or funded for construction and operation by 2042 via the 2008 Measure R or 2016 Measure M sales taxes. The No Project Alternative would include highway and transit projects identified for funding in Metro's 2020 Long Range Transportation Plan (LRTP) and Southern California Association of Governments (SCAG) *Connect SoCal 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy* (2020 RTP/SCS). The No Project Alternative includes existing projects from the regional base year (2019) and planned regional projects in operation in the horizon year (2042).

3.0 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. Where possible, it is noted whether a specific permit would be required for construction of the Build Alternatives, operation, or both; however, exact permit requirements would not be known until design plans are specified for each phase. Permitting requirements could depend on the construction phasing of the Project. Additionally, because the Alternative 1 crosses bodies of water such as the Rio Hondo and San Gabriel River, permit needs and requirements for Alternative 1 may be determined by the contractor(s) responsible for construction.

Table 3-1 summarizes the permits and approving agencies that may be involved in operation and construction of the Build Alternatives. Final permitting requirements would be determined as the design and construction plans are completed.

Table 3-1. Summary of Potential Permits and Approval Agencies

Permit	Approving Agency	Necessary During Operation or Construction
NPDES General Industrial	SWRCB	Operation (MSFs)
NPDES MS4	LARWQCB	Operation; some requirements for construction
Encroachment/Construction Permit	LACDPW, LACFCD	Construction
NPDES General Construction	SWRCB	Construction; post-construction BMPs also apply to operation
CWA Section 404	USACE	Construction
RHA Section 14, (Section 408)	USACE	Construction
CWA Section 401	SWRCB	Construction
California Fish and Game Code Section 1602 – Lake or Streambed Alteration Agreement	CDFW	Construction
WDRs Specified for Discharges to Groundwater in Santa Clara and Los Angeles River Basins (Order No. 93-010)	LARWQCB	Construction
WDRs for Discharge of Non-Hazardous Contaminated Soils and Other Wastes in Los Angeles River and Santa Clara River Basins (Order No. 91-93)	LARWQCB	Construction

Source: CDM Smith/AECOM JV, 2020.
Key:
BMPs = Best Management Practices
CWA = Clean Water Act
LACFCD = Los Angeles County Flood Control District
MS4 = Municipal Separate Storm Sewer System
NPDES = National Pollutant Discharge Elimination System
SWRCB = State Water Resources Control Board
WDRs = Waste Discharge Requirements
CDFW = California Department of Fish and Wildlife
LACDPW = Los Angeles County Department of Public Works
LARWQCB = Los Angeles Regional Water Quality Control Board
MSF = Maintenance and Storage Facility
RHA = Rivers and Harbors Act
USACE = U.S. Army Corps of Engineers

3.1 Federal

The following sections describe federal regulations that are applicable to operation and/or construction of the Build Alternatives.

3.1.1 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 such as setting wastewater standards for industries. 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). Specific sections of the CWA that are applicable to the Project are described below.

The CWA includes the federal Antidegradation Policy which was enacted to require the states to enact policies to fully protect existing water uses and level of water quality required to protect and maintain the existing uses. Additional provisions of the CWA that are applicable to the Project are described below.

3.1.1.1 CWA Section 301

Section 301 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.

3.1.1.2 CWA Section 303(d)

Section 303(d) of the CWA requires states, territories, and authorized tribes to develop a list of water quality-impaired segments of waterways. The 303(d) list includes waterbodies that do not meet water quality standards for the specified beneficial uses of that waterway, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for waterbodies on their 303(d) lists and implement a process, called Total Maximum Daily Loads (TMDLs), to meet water quality standards.

The TMDL process is a tool for implementing water quality standards and is based on the relationship between pollution sources and in-stream water quality conditions. The TMDL establishes the maximum allowable loadings of a pollutant that can be assimilated by a waterbody while still meeting applicable water quality standards. The TMDL provides the basis for the establishment of water quality-based controls that are intended to provide the pollution reduction necessary for a waterbody to meet water quality standards. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point source and non-point sources. The TMDL's allocation calculation for each waterbody must include a margin of safety to ensure that the water body can be utilized for its state-designated beneficial uses. Additionally, the calculation also must account for seasonal variation in water quality.

TMDLs are intended to address all significant stressors that cause or threaten to cause impairments to beneficial uses, including point sources (e.g., sewage treatment plant discharges), non-point sources (e.g., runoff from fields, streets, range, or forest land), and naturally occurring sources (e.g., runoff from undisturbed lands). TMDLs are developed to provide an analytical basis for planning and implementing pollution controls, land management practices, and restoration projects needed to protect water quality. 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.

TMDL Implementation Plans provide a schedule for responsible jurisdictions to implement BMPs to comply with pollutant reduction schedules. BMPs are defined as a technique, measure, or structural control to manage the quantity and improve the quality of stormwater runoff in the most cost-effective manner.

Section 6.0 describes the existing condition of waterways and groundwater in or near the DSAs, established beneficial uses, and associated TMDLs. These water quality regulations are applicable during operation and construction of the Build Alternatives.

3.1.1.3 CWA Section 401

Section 401 of the CWA requires projects permitted under the CWA Section 404 (which as described below, regulates the discharge of dredged or fill material into waters of the U.S.), to obtain a Water Quality Certification. These regulatory requirements would be applicable to construction of Alternative 1 in the vicinity of the Rio Hondo and San Gabriel River.

In California, the SWRCB and RWQCBs are responsible for reviewing proposed projects and issuing Water Quality Certifications.

3.1.1.4 CWA Section 402

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 one acre; and 2) stormwater discharges in municipal stormwater systems where runoff is carried through a developed conveyance system to specific discharge locations.

NPDES permits are discussed in further detail in **Section 3.2.4** and **Section 3.3.1.1**.

3.1.1.5 CWA Section 404

Section 404 of the CWA requires that a permit be obtained from the United States Army Corps of Engineers (USACE) for proposed 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)).

It has been determined in meetings with USACE that 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 therefore,

construction of Alternative 1 would require a Section 404 permit. Specific permitting requirements would be determined once specific construction plans and phasing are determined.

3.1.2 Rivers and Harbors Appropriation Act of 1899

Section 14 of the Rivers and Harbors Act (RHA) of 1899 (33 United States Code (USC) Section 408) provides that the Secretary of the Army, on the recommendation of the Chief of Engineers, 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. The types of 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). A request for alteration or modification of a flood protection system must include an engineering analysis that addresses the full range of loading conditions to determine the impact of the alteration or modification on flood elevations and structural integrity. Approval of any request to temporarily or permanently alter, occupy, or use a federally authorized flood damage reduction project, requires the USACE to determine that the proposed use will not be injurious to the public interest and will not impair the usefulness of the flood damage reduction project for its intended purpose. Construction of Alternative 1 would occur in federally authorized flood control areas (Rio Hondo, San Gabriel River, and the Rio Hondo Spreading Grounds) and, therefore, would require approval under 33 U.S.C. Section 408.

The Section 408 review process includes four main steps outlined below (USACE 2018). Depending on the complexity of a project, Section 408 decisions may be made at the USACE district, division, or headquarters levels. The Section 408 review for this Project is expected to be decided at the district level (i.e., the Los Angeles District).

- **Completeness Determination:** Requesters must submit the information needed to satisfy all basic requirements of Section 408 to the appropriate USACE District office; Districts must submit a completeness determination, or a request for more information, within 30 days of receipt of information.
- **Review and Decision:** USACE will evaluate the submitted information and provide a final decision for either validating use of a categorical permission, a specific milestone, or a complete Section 408 request. This step generally needs to be completed in 90 days.
- **Final Decision Notification:** Within the 90-day review and decision timeline, USACE must issue a signed, written decision to the requester for all final Section 408 decisions.
- **Construction Oversight:** The USACE District will develop procedures for monitoring construction activities; requesters may need to provide as-builts and operation and maintenance manual updates to USACE if requested.

3.1.3 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 6.6**; also see **Figure 6.5**.) The 100-year floodplain is defined as areas that will be inundated by the flood event having a one percent chance of being equaled or exceeded in any given year and corresponds to flood zones A, AE, and AH on the figure. 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 the figure.

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 6.6 provides specific information about the location of floodplains in the vicinity of the proposed alternative alignments, stations, parking facilities, and MSFs. A more in-depth analysis of potential floodplain impacts is included in **Section 7.3.1**.

3.1.4 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. Flood zones are defined as follows:

- **Undetermined Risk Areas**: Zone D is defined as areas with possible but undetermined flood hazards. No flood hazard analysis has been conducted.
- **Moderate to Low Risk Areas**: Zones B, C, and X are defined as areas outside the floodplain with a one percent annual chance of flooding, and no Base Flood Elevations or depths are shown within this zone. Areas with minimal flood risk are zone X, while areas with reduced flood risk due to a levee or areas with a 0.2 percent annual chance of flooding (or the 500-year floodplain) are zone X shaded.
- **High Risk Areas**: Zone A is defined as areas with a one percent annual chance of flooding; however, detailed analyses are not performed for these areas and no depths or base flood elevations are shown on FIRMs. Zone AE is defined as areas that have a one percent annual chance of flooding with base flood elevations provided. Zone AH is defined as areas with a one percent annual chance of shallow flooding, usually in the form of a pond, with an average depth from 1 to 3 deep.

3.2 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 the development and implementation of Water Quality Control Plans (Basin Plans) that address regional beneficial uses, water quality characteristics, and water quality problems. The RWQCB is responsible for implementing the Porter-Cologne Water Quality Control Act discussed below. The RWQCB is also responsible for issuing Water Quality Certifications pursuant to Section 401 of the CWA as described above. The DSAs are within the LARWQCB jurisdiction.

All projects resulting in waste discharges, whether to land or water are subject to Section 13263 of the California Water Code. Through the mandates of this section, 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 (further described below).

3.2.1 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. Basin Plans are required to: 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). Development of Basin Plans and the triennial review of these plans by the SWRCB are necessary for compliance with CWA Section 303 (40 CFR 131).

3.2.2 California Fish and Game Code Section 1602

Section 1602 of the California Fish and Game Code, as 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. CDFW defines streambeds as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life" and lakes as "natural lakes and man-made reservoirs." CDFW jurisdiction includes ephemeral, intermittent, and perennial watercourses, and can extend to habitats adjacent to watercourses.

According to the Lake and Streambed Alteration Notification Instructions, the "Fish and Game Code Section 1602 requires any entity (defined as a person, state or local governmental agency, or public

utility) to notify CDFW before beginning any activity that would do one or more of the following (CDFW 2020):

- Divert or obstruct the natural flow of any river, stream, or lake
- Change the bed, channel, or bank of any river, stream, or lake
- Use material from any river, stream, or lake
- Deposit or dispose of material into any river, stream, or lake

As described above, construction of Alternative 1 would occur in and along the waterways in the DSA of Alternative 1, including the Rio Hondo and San Gabriel River. Notification to CDFW would be required prior to the start of construction in these areas.

3.2.3 State Antidegradation Policy

In accordance with the federal Antidegradation Policy, the state policy was adopted by SWRCB to maintain high quality waters in California. This state policy, implemented by RWQCBs, restricts the degradation of surface and groundwaters in an effort to achieve the federal CWA goals and objectives. Specifically, the policy protects bodies of water where the existing water quality is higher than necessary for the protection of present and anticipated beneficial uses. The policy requires that any activity that produces a waste or increased amount of waste and that discharges into high quality waters must meet WDRs to control the discharge and assure that degradation of the existing water quality not occur (SWRCB 1968). Potentially applicable WDRs are described under **Section 3.3.1.2** and **Section 3.3.1.3.**

3.2.4 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, which are detailed below.

The NPDES Industrial General Permit was established pursuant to amendments made to the CWA in 1987 to require that stormwater associated with industrial activities 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 industrial activities that are regulated under the Industrial General Permit for discharges directly to surface waters or indirectly through municipal storm sewers. The Project's MSF operations would be subject to the regulations of this NPDES permit under Category 8, which includes transportation facilities that have "vehicle maintenance shops, equipment cleaning operations, or airport deicing operations." Vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication) would be covered under this permit. In order to obtain authorization for stormwater discharges associated with industrial activities under this permit, Metro must submit a Notice of Intent (NOI) to the SWRCB.

As with the Industrial General Permit, the SWRCB administers the Construction General Permit, which is applicable to all stormwater discharges associated with construction activity. The NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (the Construction General Permit) was adopted on September 2, 2009. The provisions of the new Construction General Permit (Order #2009-0009-DWQ [State Water Resources Control Board Division of Water Quality]) became effective July 1, 2010 and was amended by Order # 2010-014-DWQ on February 14, 2011, and 2012-0006-DWQ on July 17, 2012. This Order has been administratively extended until a new order is adopted and becomes effective. Order #2009-0009-DWQ supersedes the previous Construction General Permit (Order #99-08-DWQ) (SWRCB 2012). The new Order has similar requirements to the current permit, but it specifies more minimum BMPs that were previously only required as elements of the Stormwater Pollution Prevention Plan (SWPPP) or suggested by guidance.

The main objectives of the Construction General Permit are to:

- Reduce erosion from construction projects or activities
- Minimize or eliminate sediment in stormwater discharges from construction projects
- Prevent materials used at a construction site from contacting stormwater
- Implement a sampling and analysis program to monitor construction site runoff
- Eliminate unauthorized non-stormwater discharges from the construction sites
- Implement appropriate measures to reduce potential impacts on waterways both during and after construction projects
- Establish maintenance commitments on post-construction pollution control measures

The Construction General Permit requirements apply to any construction project that results in the disturbance of at least one acre of land or that is part of a larger common development plan. Additionally, the General Construction Permit is required for related construction or demolition activities, including clearing, grading, grubbing, or excavation, or any other activity that results in greater than one acre of land disturbance.

Minimum stormwater control requirements under the permit are determined by project risk categories. Risk categories include the sediment risk factor and the receiving water risk factor. These are combined to determine a construction site's project risk level. The project risk level governs the applicable minimum BMPs, monitoring requirements, reporting requirements, and the effluent standards used to assess monitoring data and compliance. Once the project risk level is determined, minimum BMP requirements are specified in the Construction General Permit. BMPs are separated into five overall categories:

- Good Site Management "Housekeeping"
- Non-stormwater Management
- Erosion Control

- Sediment Controls
- Run-on and Runoff Controls

Potential BMPs are described in further detail in **Section 8.0**. Monitoring and reporting requirements under the permit are also dependent on the project risk level. Visual monitoring of stormwater and non-stormwater discharges is required of all projects. Water quality sampling and analysis requirements increase with risk category. Monitoring is required during normal construction site hours. Rain events also trigger monitoring in the case that there is a one-half inch or more of precipitation within a period of 48 hours.

In order to obtain coverage under the Construction General Permit, the permit applicant must file the following with the SWRCB:

- NOI
- Risk Assessment
- Site Map
- SWPPP
- Annual Fee
- Signed Certification Statement

Metro would be responsible for compliance with the Industrial General Permit and Construction General Permit. As noted above in **Section 3.0**, specific permitting requirements for the Construction General Permit would be determined once construction plans and construction phasing are specified.

3.2.5 Alquist-Priolo Earthquake Fault Zoning Act

The 1972 Alquist-Priolo Earthquake Fault Zoning Act was created with the purpose of mitigating hazards associated with fault rupture. Structures for human occupancy are prohibited from being placed across the trace of an active fault (California Department of Conservation 2019). This policy and its applicability to the Build Alternatives is discussed in detail in the Eastside Transit Corridor Phase 2 Geology, Soils, Seismicity, and Paleontological Resources Impacts Report; however, it is an important regulation 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. As addressed in the Eastside Transit Corridor Phase 2 Geology, Soils, Seismicity, and Paleontological Resources Impacts Report, there are no Alquist-Priolo Earthquake Fault zones with the in the DSAs and one within the GSA.

3.2.6 Seismic Hazards Mapping Act of 1990

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. The mapping area emphasizes urban areas in Los Angeles, Ventura, and Orange counties in Southern California, and Alameda, San Francisco, San Mateo, and Santa Clara counties in Northern California. The applicability of this policy to the Build Alternatives is discussed in detail in the Eastside Transit Corridor Phase 2 Geology, Soils, Seismicity, and Paleontological Resources Impacts Report; however, it is also important in relation to sites in the DSAs that are susceptible to ground movement due to earthquake and related dam failure and inundation.

3.2.7 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 (e.g., counties, cities, and water 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 further in **Section 6.4.1** and **Section 7.5**.

3.3 Regional

3.3.1 Los Angeles Regional Water Quality Control Board

3.3.1.1 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 on June 16, 2015 and Los Angeles Water Board Order R4-2012-0175-A01 on September 8, 2016, and as modified by LARWQCB on July 9, 2018). 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), with the exception of the City of Long Beach (LARWQCB 2016). The permit covers the permittees for contributions to discharges of stormwater and urban runoff from municipal separate storm sewer systems (MS4s), also called storm drain systems. The discharges flow to water courses within the LACFCD and into receiving waters of the Los Angeles region. This Order also serves as Waste Discharge Requirements pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260).

The objectives of MS4 permits are to effectively 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). Operators of regulated MS4s are required to develop a stormwater management plan (SWMP) that includes measurable goals and to implement needed stormwater management controls (e.g., BMPs). NPDES regulations require assessment and revision of the stormwater management program in order to continue, to the maximum extent practicable, to not cause or contribute to water quality standards exceedances. Stormwater program activities are continually adjusted based on the results of an effectiveness evaluation (USEPA 2008).

The current MS4 permit imposes basic programs, or minimum control measures, that mitigate stormwater quality issues. These programs include public information and participation, industrial/commercial inspection, planning and land development, development construction, public agency activities, and illicit connection/discharge abatement (Los Angeles County 2015). To illustrate, the implementation of temporary construction BMPs, such as erosion control and spill management and safe storage of fluids, are required under the development construction program. Post-construction stormwater BMPs are required for most public and private development under the planning and land development program. MS4 permit requirements would apply to Project operation and construction.

Compared to the previous MS4 permit (authorized under Order No. 01-182), there is an increased emphasis on watershed planning under the current order. Watershed planning is emphasized because it allows permittees to focus on water quality results by analyzing the receiving waters within a watershed; additionally, TMDLs established by the USEPA and LARWQCB apply to a watershed scale. The current MS4 permit allows permittees to develop Watershed Management Programs (WMP) or Enhanced Watershed Management Programs (EWMP) to implement MS4 permit requirements, including the minimum control measures described above, through BMPs, control measures, and customized strategies targeted at the watershed level.

3.3.1.2 Waste Discharge Requirements for Specified Discharges to Groundwater in Santa Clara and Los Angeles River Basins (Order No. 93-010)

SWRCB's Waste Discharge Requirements Program "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 (LARWQCB 1993) allows for the discharge of water resulting from construction dewatering and dust control application that may occur during construction of a project.

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 must comply with applicable water quality standards.

Due to the potential for construction dewatering activities, this WDR applies to the Build Alternatives during construction.

3.3.1.3 Waste Discharge Requirements for Discharge of Non-Hazardous Contaminated Soils and Other Wastes in Los Angeles River and Santa Clara River Basins (Order No. 91-93)

The purpose of this WDR (LARWQCB 1991) is to protect waters of the state from contamination due to disposal of soils that do not meet criteria for designation as hazardous waste, but contain moderate concentrations of petroleum hydrocarbons, heavy metals, and other contaminants. The permit allows the disposal of up to 100,000 cubic yards of non-hazardous contaminated soils and other wastes for a maximum period of 90 days. This WDR requires that waste used as soil backfill shall not contain any substance in concentrations toxic to human, animal, plant, or aquatic life. The Construction General Permit allows for temporary stockpiling of non-hazardous, contaminated soils until they can be appropriately disposed of or reused, per permit conditions.

3.3.1.4 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 both the designated beneficial uses for each water body and the narrative and numeric water quality objectives to meet them. Where multiple designated beneficial uses exist, water quality standards are written to protect the most sensitive use. Also, the *LA Basin Plan* describes the implementation programs and actions necessary to meet the water quality objectives and the monitoring and assessment methods used to determine attainment of the water quality objectives.

3.3.1.5 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 Basin Plan for some pollutants identified on the 303(d) list as causing contamination in the Los Angeles and San Gabriel River Watersheds. TMDLs govern the discharge of wastewater, urban runoff, and stormwater. A TMDL "is a number that represents the assimilative capacity of a receiving water to absorb a pollutant" (LARWQCB 2019a). The Rio Hondo Watershed has established TMDLs (Category 5B) 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). TMDLs applicable to the reaches of the Rio Hondo and San Gabriel River in the DSA of Alternative 1 are described in **Section 6.3**.

3.3.1.6 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).

3.4 Local

The following sections describe local policies (contained in general plans) and ordinances (contained in county and municipal codes) related to water resources, water quality, and floodplains. Not all of the local jurisdictions within the DSAs have specific general plan policies or ordinances related to water resources; applicable policies and regulations are described below.

3.4.1 Los Angeles County

3.4.1.1 Los Angeles County Metropolitan Transportation Authority

3.4.1.1.1 Water Use and Conservation Policy

In addition to complying with local and regional water conservation regulations, Metro developed their own 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
    - 2.1.1 Prioritize facility locations that must be regularly cleaned using pressure washing equipment.
    - 2.1.2 If pressure washing is deemed essential, appropriate water conservation and efficiency measures must be applied.
    - 2.1.3 Conduct pressure washing activities using cost-effective water efficient equipment.
    - 2.1.4 Capture and dispose any generated wastewater to an appropriate facility.
- Procedure 2.2 – Using Potable Water for Construction
    - 2.2.1 Develop a plan for dust suppression purposes to comply with applicable environmental statutes, regulations, and guidelines.
    - 2.2.2 Use of potable water as a dust suppression agent should always be secondary and should only be used if all other dust suppression technologies are not feasible or cost-effective.
- Procedure 2.3 – New Construction Planning, Design and Construction; Existing Buildings Operations

- 2.3.1 Use water conservation and efficiency guidelines outlined in applicable Leadership in Energy and Environmental Design reference books for all planning, procurement, design, construction, operation, and maintenance of Metro's linear and non-linear facilities.
- 2.3.2 Prepare manuals of operation, as applicable, to ensure that water efficiency and conservation technologies are adopted and maintained.

3.4.1.1.2 Metro Rail Design Criteria

Metro has developed Metro Rail Design Criteria (MRDC) to be used in the design of Metro Rail Transit Projects and related work. Criteria and requirements included in the following MRDC Sections can help provide protection for water resources and quality:

- 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."
- Section 10, Operations (Metro 2010): "describes the basin system wide operating and maintenance philosophies and methodologies set forth for Metro Rail Projects".
- Section 11, Yards and Maintenance, or MSFs (Metro 2014): "provides requirements for MSF design" for shop, waste disposal, and other MSF facilities.
- Fire and Life Safety Criteria (Metro 2016b): describes fire and life safety protection requirements for guideway transit systems and associated facilities, including the development of Site Emergency Plans that provide responses to various typical emergencies and incidents that may occur, such as serious flooding.

3.4.1.2 Los Angeles County General Plan

The *Los Angeles County 2035 General Plan* sets specific goals and policies in relation to water resources, water quality, and flooding in the Conservation and Natural Resources Element, and the Safety Element (Los Angeles County 2015). The following are some of the policies that apply to the Build Alternatives in unincorporated county areas. Incorporated areas are regulated by applicable city policies.

3.4.1.2.1 Conservation and Natural Resources Element

- Policy C/NR 5.1: Support the low impact development (LID) philosophy, which seeks to plan and design public and private development with hydrologic sensitivity, including limits to straightening and channelizing natural flow paths, removal of vegetative cover, compaction of soils, and distribution of naturalistic BMPs at regional, neighborhood, and parcel-level scales.
- Policy C/NR 5.2: Require compliance by all County departments with adopted MS4, General Construction, and point source NPDES permits.

- Policy C/NR 5.6: Minimize point and non-point source water pollution.
- Policy C/NR 5.7: Actively support the design of new and retrofit of existing infrastructure to accommodate watershed protection goals, such as roadway, railway, bridge, and other—particularly—tributary street and greenway interface points with channelized waterways.
- Policy C/NR 6.1: Support the LID philosophy, which incorporates distributed, post-construction parcel-level stormwater infiltration as part of new development.
- Policy C/NR 6.2: Protect natural groundwater recharge areas and regional spreading grounds.

3.4.1.2.2 Safety Element

- Policy S 2.1: Discourage development in the County's Flood Hazard Zones.
- Policy S 2.4: Ensure that developments located within the County's Flood Hazard Zones are sited and designed to avoid isolation from essential services and facilities in the event of flooding.
- Policy S 2.6: Work cooperatively with public agencies with responsibility for flood protection, and with stakeholders in planning for flood and inundation hazards.

3.4.1.3 Los Angeles County Code

Los Angeles County's Stormwater and Runoff Pollution Control Ordinance regulates discharges to the storm drain system, runoff management requirements including LID requirements, and specifies penalties for violations of the ordinance within any unincorporated area covered by the NPDES municipal stormwater permit (Chapter 12.80, Parts 3-5) (Los Angeles County 1998).

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).

3.4.1.4 Los Angeles County Low Impact Development Ordinance and Manual

LID is a design strategy using naturalistic, on-site BMPs to lessen the impacts of development on stormwater quality and quantity. Los Angeles County's LID Standards Ordinance provides LID standards for infrastructure projects to lessen adverse impacts of stormwater runoff, minimize pollutant loadings, minimize erosion and hydrologic impacts on natural drainage systems (Los Angeles County 2008).

As of January 1, 2009, Los Angeles County instituted LID requirements for development occurring within unincorporated portions of the county. Los Angeles County prepared the 2014 *Low Impact Development Standards Manual* (LACDPW 2014) to comply with the requirements of the 2012 MS4 Permit. The LID Standards Manual provides guidance for the implementation of stormwater quality control measures in new development and redevelopment projects in unincorporated areas of the county with the intention of improving water quality and mitigating potential water quality impacts from stormwater and non-stormwater discharges.

3.4.1.5 Los Angeles County Department of Public Works

The Los Angeles County Department of Public Works (LACDPW) is responsible for planning and implementation of watershed management within the county. Watershed management plans that pertain to the DSAs include the *San Gabriel River Corridor Master Plan* (2006) and the Los Angeles River Master Plan (LACDPW, LACDPR, and LACDRP 1996, 2021).The main goals of these watershed management plans are the protection and enhancement of the rivers for flood protection, recreation, and environmental services. The Los Angeles River Master Plan is currently in the process of being updated (LACDPW, LACDPR, and LACDRP 2021).

Flood control facilities and wetland areas along the river corridors are regulated by USACE under the CWA and the RHA as described in **Section 3.1.1** and **Section 3.1.2**, respectively. The LACDPW is the local sponsor and owner of the Rio Hondo Spreading Grounds and San Gabriel Coastal Spreading Grounds (San Gabriel Spreading Grounds) which are used for groundwater recharge and regional water supply. Therefore, any construction activity in these areas would require approvals from both of these agencies.

3.4.1.6 Los Angeles County Flood Control District - Enhanced Water Management Plans for Los Angeles County

The LACFCD is a division of the LACDPW that provides flood protection, water conservation, and recreation and aesthetic enhancement within its boundaries. The LACFCD encompasses more than 2,700 square miles and 86 incorporated cities and has jurisdiction over the vast majority of drainage infrastructure with the incorporated and unincorporated areas of the county (LACDPW [no date]). The LACFCD has partnered with dozens of cities to develop EWMP plans (EWMP is discussed in **Section 3.3.1.6**) that call for the implementation of a variety of projects, including green streets, wetland parks, and underground water-retention facilities; the enhancement of existing programs, such as improved street sweeping; and the construction of roadway corridors featuring bioswales and

permeable surfaces. The implementation of these plans is expected to take approximately 20 years (LACDPW 2021b).

3.4.1.7 Los Angeles County Comprehensive Floodplain Management Plan

The *Los Angeles County Comprehensive Floodplain Management Plan* is an important part of the county's participation in the NFIP and Community Rating System. This plan was developed to comply with federal, state, and local requirements for floodplain management planning, coordinate existing programs and plans to prioritize initiatives, and create a linkage between the floodplain management plan and established plans of Los Angeles County (LACDPW 2016).

3.4.2 City of Commerce

3.4.2.1 General Plan

The *City of Commerce 2020 General Plan* (City of Commerce 2008) outlines policies regarding water resources in the Health & Safety Element. In 2018, the city of Commerce initiated a process to review and update its General Plan; this process is not yet complete. The following policy from the current General Plan Health and Safety Element is relevant to water resources in the DSAs.

- Policy 2.3: The City of Commerce will ensure that the public and private water distribution and supply facilities have adequate capacity to meet both the domestic supply needs of the community and the required fire flow.

3.4.2.2 Municipal Code

The Commerce Municipal Code covers stormwater and urban runoff pollution under Chapter 6.17 (City of Commerce 2016). Specifically, this chapter outlines prohibited activities; industrial, commercial, and public facility requirements; and BMPs for reducing runoff and pollution from runoff. Commerce Municipal Code Chapter 19.33 provides requirements to lessen the water quality impacts of development by using smart growth practices and integrating LID design principles to mimic predevelopment hydrology through infiltration, evapotranspiration, and rainfall harvest and use (City of Commerce 2013).

3.4.3 City of Montebello

3.4.3.1 General Plan

The *Montebello 1973 General Plan* was adopted in 1973 and was intended to guide development for 20 years. As the city is built beyond the life of the general plan, Montebello is currently in the process of updating the plan. The Conservation Element of the city of Montebello's *General Plan* describes policies for protecting water resources within the city (City of Montebello 1975). The following policy applies:

- Disposal of liquid wastes should be through the sewer system or by transport to approved disposal sites and not by direct discharge on or under the ground surface.

3.4.3.2 Municipal Code

The Montebello Municipal Code covers stormwater and urban runoff pollution. Title 8, Health and Safety, Chapter 8.36, covers reduction in pollutants in runoff, control of pollutants from industrial activities, and control of pollutants from state permitted construction. Furthermore, Chapter 8.36 requires the use of smart growth tactics and integration of LID practices and standards for stormwater pollution mitigation through infiltration, evapotranspiration, biofiltration, and rainfall harvest and use (City of Montebello 2002). 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).

3.4.4 City of Pico Rivera

3.4.4.1 General Plan

The city of Pico Rivera addresses goals and policies related to water resources in the Environmental Resources and Safety elements of the city of Pico Rivera's *General Plan* (City of Pico Rivera 2014b). Applicable polices are outlined below.

3.4.4.1.1 Environmental Resources Element – Water Resources, Quality and Conservation

- Policies 8.4-1 through 8.4-3: protect surface and groundwater resources as well as the groundwater recharge capabilities along the Rio Hondo and San Gabriel River.
- Policy 8.4-5: Regulate operation and construction activities to incorporate stormwater protection measures and BMPs in accordance with the NPDES Permit.
- Policy 8.4-6: Regulated discharge from industrial users in accordance with local, regional, and State regulations to protect the City's natural waterbodies.
- Policy 8.4-8: Require new development to protect the quality of surface and groundwater bodies and natural drainage systems through site design, stormwater retention and treatment, and implementation of LID measures.
- Policy 8.4-10: Require new development to incorporate water conservation techniques into building and site design including the use of water efficient fixtures, drought-tolerant and native landscaping, efficient irrigation systems, on-site stormwater capture and reuse systems, and water reuse in accordance with state and other relevant standards including the City's Water Efficient Landscape ordinance.

3.4.4.1.2 Safety Element – Flood Hazards

- Policy 9.2-1: coordinate with the LACFCD to ensure that the City's storm drainage system is adequately sized, maintained, rehabilitated, funded to accommodate stormwater runoff and prevent flooding.
- Policy 9.2-2: Prioritize the construction and upgrade of storm drainage infrastructure in areas where localized flooding and efficient storm drainage systems exist.
- Policy 9.2-3: Require new development to demonstrate availability of adequate capacity in storm drainage system to accommodate projected flows and not exacerbate existing deficiencies.
- Policy 9.2-4: Ensure that new development constructs, dedicates, and/or pays for its fair share of contribution to the storm drainage system improvements necessary to serve the demands created by the development.

3.4.4.2 Municipal 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). Title 16, Environment, Chapter 16.04, regulates stormwater and urban runoff pollution prevention within the city (City of Pico Rivera 2014a).

3.4.5 City of Santa Fe Springs

3.4.5.1 General Plan

The city of Santa Fe Spring's *Re-Imagine Santa Fe Springs 2040 General Plan* addresses goals and policies related to water resources in the Conservation and Open Space and Safety Elements of the city's general plan (City of Santa Fe Springs 2021). Applicable polices are outlined below.

3.4.5.1.1 Conservation and Open Space Element

The Conservation and Open Space Element of the *Re-Imagine Santa Fe Springs 2040 General Plan* discusses surface water and groundwater resources in the city and promotes the protection of these resources through low impact development practices (City of Santa Fe Springs 2021). The following standards may be applicable to the operation and construction of the Build Alternatives:

- Policy COS-4.3: Groundwater Contamination. Evaluate all proposed non-residential development plans, activities, and uses for their potential to create groundwater contamination hazards from point and non-point sources and confer with other appropriate agencies to assure adequate review.

- Policy COS-4.4: Runoff Pollution Prevention. Require that new developments incorporate features into site drainage plans that reduce impermeable surface area, increase surface water infiltration, and minimize surface water runoff during storm events. Such features may include additional landscape areas, parking lots with bio-infiltration systems, permeable paving designs, and stormwater detention basins.

3.4.5.1.2 Safety Element

The city of Santa Fe's *Re-Imagine Santa Fe Springs 2040 General Plan* Safety Element outlines goals and policies for mitigation of hazards related to natural disasters, including flood and dam inundation hazards, and general public safety issues (City of Santa Fe Springs 2021). The following standards may be applicable to the operation and construction of the Build Alternatives:

- Policy S-2.1: Storm Drainage System. Consult with Los Angeles County Public Works to ensure that existing and future regional storm drain facilities within and adjacent to Santa Fe Springs are designed, operated, and maintained to accommodate projected drainage needs associated with major storm events and climate change effects.

- Policy S-2.2: Localized Ponding Mitigation. Require developers to address localized ponding, where it may exist, as part of site improvements.

3.4.5.2 Municipal Code

Title V, Public Works, Chapter 52, Stormwater Management and Discharge Control, establishes provisions to protect surface and groundwater quality in the city from polluted runoff (City of Santa Fe Springs 2014). Similar to the municipal codes of the cities described above, the Santa Fe Springs code regulates illicit discharges and non-stormwater discharges as well as control of pollutants from construction and industrial activities and enforcement. Additionally, Chapter 52 requires LID measures and BMPs that must be incorporated into design plans for development or redevelopment projects. Chapter 54, Water Conservation, provides regulations to prevent the waste and unreasonable use of water (City of Santa Fe Springs 2015).

Title XV, Land Usage, Chapter 151, Flood Damage Prevention, aims to protect public health and safety and minimize flood losses. This chapter adopts FEMA's special food hazard areas by reference; outlines flood hazard reduction standards relating to construction, utilities, subdivisions, manufactured homes, recreational vehicles, and floodways; and discusses procedures for variances from the requirements of the flood damage prevention code (Santa Fe Springs 1987).

3.4.6 City of Whittier

3.4.6.1 General Plan

3.4.6.1.1 Resource Management Element

The city of Whittier's *Envision Whittier General Plan* Resource Management Element promotes the protection of natural resources, including water resources (City of Whittier 2021). The following policies may be applicable to operation and construction of the Build Alternatives:

- RM-2.5: Require the use of innovative stormwater best management practices in all new development, including water quality monitoring during construction projects in the vicinity of sensitive water resources.
- RM-2.6: Encourage the use of site and landscape designs that minimize surface runoff and retain or detain stormwater runoff, minimizing volume and pollutant concentrations.
- RM-2.7: Reduce impermeable surface coverage citywide by replacement with natural vegetation and soils to reduce runoff and flood hazards.
- RM-2.10: Encourage the use of native and climate-appropriate and drought tolerant landscaping to reduce overall and per capita water demand.

3.4.6.1.2 Public Safety Element

The Public Safety, Noise, and Health Element of the city's General Plan discusses resilience to local urban flood hazards, including flooding from inadequate drainage systems and impermeable surfaces, and inundation hazards from the Whittier Narrows Dam (City of Whittier 2021). The following policies may be applicable to operation and construction of the Build Alternatives:

- PSNH-6.1: Maximize the resiliency of essential public facilities to risks and hazards of flooding.
- PSNH-6.4: Encourage natural flood control infrastructure and techniques to capture stormwater, recharge aquifers, and prevent flooding near established drainage systems and channels.
- PSNH-6.5: Encourage site drainage features that reduce impermeable surface area, increase surface water infiltration, and minimize surface water runoff during storm events.

3.4.6.1.3 Municipal Code

Title 8, Health and Safety, Chapter 8.36, Stormwater and Runoff Pollution Control, establishes provisions to protect surface and groundwater quality in the city from polluted runoff. Similar to the municipal codes of the cities described above, Whittier's code regulates illicit discharges and non-stormwater discharges as well as control of pollutants from construction and industrial activities and enforcement (City of Whittier 1999).

Title 15, Buildings and Construction, Chapter 15.40, Flood Damage Prevention, regulates construction and development activities that may increase flood hazards and damage from flooding. The city's code specifies construction standards for all special flood hazard areas (City of Whittier 1988).

4.0 METHODOLOGY

To determine potential impacts on water resources during operations and construction, existing data on surface and groundwater resources, drainage patterns, water quality, water supply, and flooding/inundation hazards are evaluated. Existing water quality conditions and designated beneficial uses in the watersheds within the DSAs are identified, as well as regulations applicable to the Project to maintain and improve current water quality during operations and construction.

The evaluation of operations assesses the potential impacts on water resources from increases in polluted stormwater runoff, increases in impervious surfaces throughout the DSAs (resulting in decreased infiltration to groundwater), and surface water and groundwater contamination in relation to Project compliance with applicable permits and regulations.

The evaluation of construction impacts assesses the potential impacts on water resources from stormwater runoff, construction in or near waters of the U.S. or waters of the state, floodplain impacts, and impacts on existing drainage infrastructure. Additionally, each of the Build Alternatives are 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 in areas with existing soil or groundwater contamination. Where potential impacts on floodplains could occur, the requirements of local floodplain management ordinances are discussed. Proposed construction components requiring CWA Section 404 permitting, CWA Section 401 certification, CDFW Section 1602 notification, and RHA Section 10 and Section 14 permitting are discussed. The applicability and the ability to comply with each of these requirements is assessed 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. The field investigations identified the ordinary high water mark (OHWM) of streams and rivers within or near the DSAs as well as wetlands and state-regulated riparian areas. The OHWM is a jurisdictional benchmark established by USACE for administering its regulatory program under Section 404 of the CWA. The OHWM is the line on the shore that represents the approximate elevation of the ordinary high water as established by fluctuations of water and indicated by physical characteristics such as shelving, destruction of terrestrial vegetation, presence of litter or debris, or changes in the character of the soil. Current conditions were reviewed via aerial photography in spring 2021 and site visits were conducted on March 28, 2021, and April 9, 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.

5.0 THRESHOLDS OF SIGNIFICANCE

In accordance with Appendix G of the State California Environmental Quality Act 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 offsite,**
- **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.

6.0 EXISTING SETTING

6.1 Water Resources Study Area

The water resources study area is the DSA for each of the Build Alternatives, as described in **Section 2.0**. The watersheds in the DSAs are the Los Angeles River Watershed (all Build Alternatives), the Rio Hondo Watershed (Alternatives 1 and 3), and the San Gabriel Watershed (Alternative 1), as shown on **Figure 6.1**. Both the Commerce site option and Montebello MSF site option are located within the Los Angeles River watershed. The watersheds and local surface water bodies are described in **Section 6.2**.

In relation to groundwater resources, the Central Subbasin of the Coastal Plain of Los Angeles underlies the DSAs as described in **Section 6.4**.

6.2 Watershed Setting and Local Surface Water Bodies

As identified above, Alternative 1 is within the Los Angeles River Watershed, the Rio Hondo Watershed, and the San Gabriel River Watershed; Alternative 2 is within the Los Angeles River Watershed; and Alternative 3 is within the Los Angeles River Watershed and the Rio Hondo Watershed (**Figure 6.1)**.

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 significantly with the San Gabriel Mountains receiving an annual average of 34.2 inches and the coastal plain receiving 13.7 inches annually (LARWQCB 2014).

As shown in **Figure 6.2**, Alternative 1 crosses the Rio Hondo and San Gabriel River and Alternative 2 and Alternative 3 do not cross any surface water bodies.

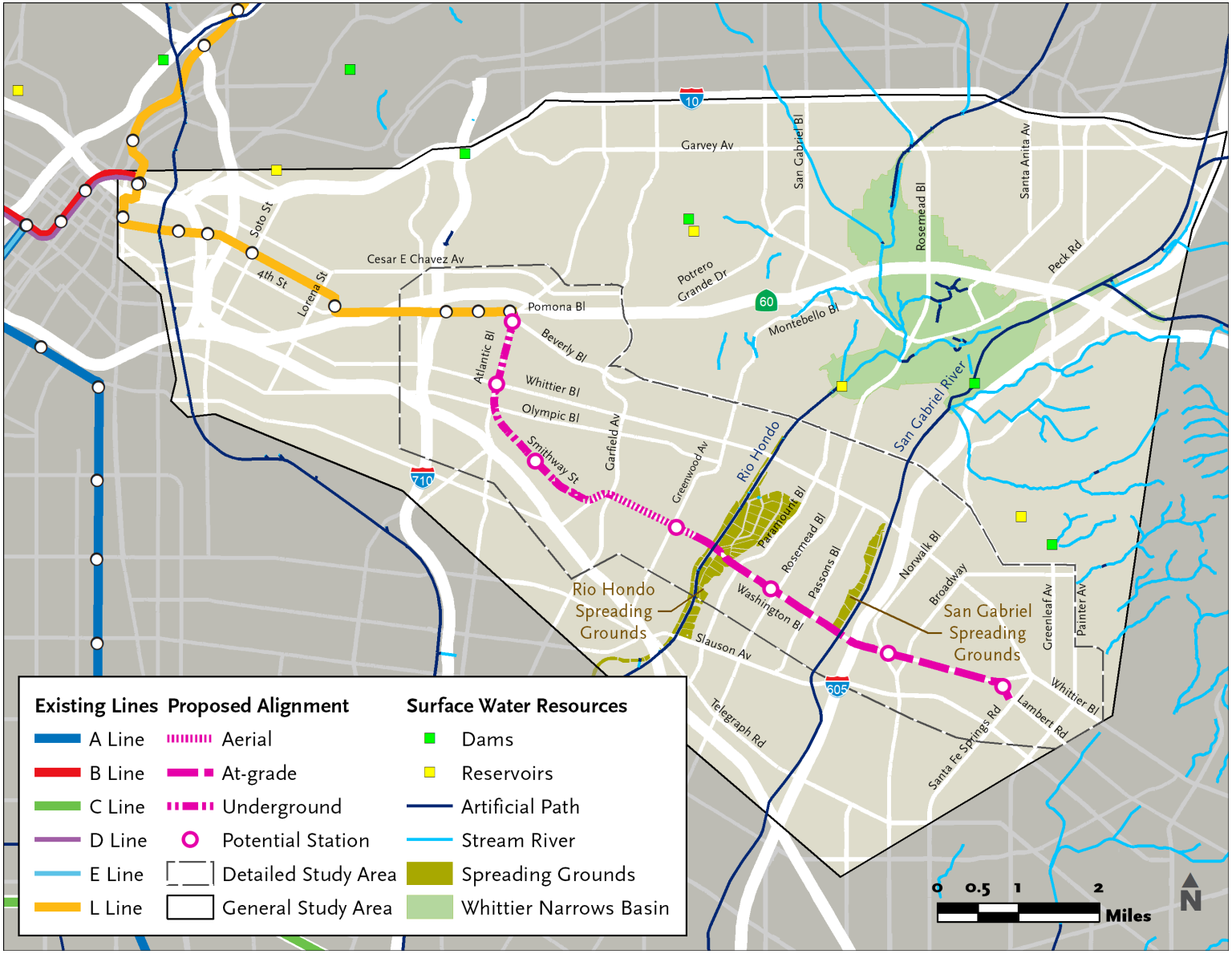
6.2.1 Los Angeles River Watershed

The portion of the Alternatives 1 and 3 alignments along South Atlantic Boulevard, the entire Alternative 2, and both MSF site options are located in the Los Angeles River Watershed.

The watershed covers an area of over 824 square miles from the eastern portions of the Santa Monica Mountains, Simi Hills, and the Santa Susana Mountains in the west to the San Gabriel Mountains in the east (LARWQCB 2014). The Los Angeles River originates at the western end of the San Fernando Valley at the confluence of Arroyo Calabasas and Bell Creek. The six major tributaries along the river are the Tujunga Wash, Burbank Western Storm Drain, Verdugo Wash, Arroyo Secco, Rio Hondo, and Compton Creek. The portion of the DSAs within this watershed are in the middle reach of the Los Angeles River basin (the reach between U.S. Highway 101 and the confluence with the Rio Hondo). **Figure 6.2** depicts a regional view of the surface waterbodies located within the DSA of Alternative 1.

Source: Los Angeles County, 2020.

Figure 6.1. Watersheds in the Alternative 1 Detailed Study Area



Source: U.S. Geological Survey 2019.

Figure 6.2. Surface Water Resources in the Alternative 1 Detailed Study Area

Topography throughout the coastal plain area is generally defined by gradually sloping land from the foothills of the San Gabriel Mountains to the Pacific Ocean. Ground elevations range from 10,000 feet in the San Gabriel Mountains to mean sea level at the mouth of the Los Angeles River; the majority of the coastal plain is less than 1,000 feet in elevation (Greater Los Angeles County [GLAC] 2014). The upper portion of the watershed is covered by forest and open space, and approximately 500 square miles of the middle and lower watershed is highly developed with commercial, industrial, and residential uses (LARWQCB 2014). The vast majority of land in the Los Angeles River Watershed (approximately 80 percent) is developed with urban uses.

6.2.1.1 Los Angeles River and Local Surface Waters

There are no surface waters associated with the Los Angeles River Watershed in the DSAs. The Los Angeles River is approximately two miles to west of the alignment. However, the Rio Hondo Watershed is a sub-watershed of the Los Angeles River Watershed and has surface waters within the Alternative 1 and Alternative 3 DSA as discussed separately below.

6.2.2 Rio Hondo Sub-Watershed

Alternative 1 from Greenwood Avenue to Rosemead Boulevard and the portion of Alternative 3 from Greenwood Avenue to its terminus at the Greenwood station are located in the Rio Hondo Watershed (see **Figure 6.1**).

The Rio Hondo Watershed is a sub-watershed of the Los Angeles River Watershed. Additionally, the Rio Hondo is hydraulically connected to the San Gabriel River because, during major flood events, flows from the two rivers merge within the Whittier Narrows Reservoir located north (upstream) of the DSAs (USACE 2011). As described in the Rio Hondo Watershed Management Plan, the link between these three watersheds is partly from natural hydrology and partly from human intervention (San Gabriel Valley Council of Governments 2004). The watershed covers 142 square miles and multiple landscape types. The upper watershed is defined by the San Gabriel Mountains in the Angeles National Forest (San Gabriel Valley Council of Governments 2004). Further south, the watershed is very urban and encompasses 21 different cities as well as portions of unincorporated Los Angeles County. There are six main subbasins within the larger Rio Hondo Watershed that generally originate in the San Gabriel Mountains and join the Rio Hondo upstream of the DSAs (San Gabriel Valley Council of Governments 2004).

As described above, these subbasins have headwaters in the undeveloped upper watershed of the San Gabriel Mountains and the Angeles National Forest. As water moves downstream from the headwaters, it enters highly urbanized areas below the foothills. The DSAs are located in the lowermost portion of the Rio Hondo Watershed, an area with direct drainage into the Rio Hondo. The Whittier Narrows Dam located at the southern boundary of the Whittier Narrows Recreation Area is a major flood control structure in the watershed; this dam is located within the GSA but outside of the DSAs.

The Rio Hondo Watershed Management Plan categorizes land use types based on SCAG geographic information system (GIS) data derived from aerial photographs from 2000 (San Gabriel Valley Council of Governments 2004). Additionally, the Angeles National Forest in the upper watershed is categorized as “vacant” land in the watershed management plan.

As described in the watershed management plan, with the exception of the Angeles National Forest land, the watershed is largely built out (San Gabriel Valley Council of Governments 2004). Very little of the existing land in the watershed is available for open space and recreation. The majority of developed land (35 percent) in the watershed is residential of varying densities and the next highest percentage of land use in the watershed is comprised of transportation, utilities, and public facilities.

Despite the high percentage of urban development and impervious surfaces in the lower part of the watershed, the Rio Hondo Watershed is an important resource for groundwater recharge and plays an important role in the replenishment of potable groundwater supplies (GLAC 2014). The Rio Hondo Coastal Spreading Grounds (Rio Hondo Spreading Grounds) are the largest and most effective spreading grounds in the county and are located directly along the Alternative 1 (see **Figure 6.2**) (San Gabriel Valley Council of Governments 2004). Other groundwater recharge basins in the watershed are located outside of the DSAs at Eaton Canyon, Big Santa Anita, and Peck Road Water Conservation Park. As described in the *Rio Hondo Watershed Management Plan*, these facilities help compensate for the loss of natural percolation in the watershed due to "the pervasive spread of impermeable surfaces such as buildings, parking lots," and other forms of urban development (San Gabriel Valley Council of Governments 2004).

6.2.2.1 Rio Hondo and Local Surface Waters

Historically, both the Los Angeles River and the San Gabriel River were wide, shallow channels, that would periodically intermingle, and the Rio Hondo formed the main bed of the San Gabriel River. Today, this area has been highly engineered and there are three channels that bring water from the San Gabriel River to the Rio Hondo:

- Buena Vista Channel near Santa Fe Dam
- Lario Creek/Zone 1 Ditch in Whittier Narrows
- Whittier Narrows Crossover Channel

These channels allow water from the San Gabriel River to be delivered to the Rio Hondo for recharge of groundwater at the Rio Hondo Spreading Grounds, and, thus, the Rio Hondo is a distributor channel for the San Gabriel River.

Currently, all but four miles of the Rio Hondo have been channelized with rock or concrete to serve as flood control for the surrounding urban areas. The Rio Hondo is channelized with a concrete bottom and side walls in the DSA of Alternative 1. The confluence of the Rio Hondo and the Los Angeles River southeast of downtown Los Angeles, outside of the DSA of Alternative 1.

6.2.3 San Gabriel River Watershed

As illustrated in **Figure 6.1**, Alternative 1 lies within the San Gabriel Watershed from Rosemead Boulevard to its terminus at the Lambert station.

The San Gabriel River Watershed borders the Rio Hondo Watershed to the east. The entire watershed covers 689 square miles and includes portions of 37 cities in Los Angeles and Orange Counties (LARWQCB 2014, LACDPW 2006). There are four main physiographic areas in the watershed that

define the drainage patterns throughout the watershed including the San Gabriel Mountains, San Gabriel and Pomona Valleys, Whittier Narrows, and the Los Angeles Coastal Plain (LACDPW 2006).

The watershed is hydraulically connected to the Los Angeles River through the Whittier Narrows Reservoir during high flows from storm events. Similar to the Los Angeles River and Rio Hondo Watersheds, the San Gabriel River Watershed consists of substantial areas of undisturbed riparian and woodland habitats in its upper reaches (LARWQCB 2014). More than 30 percent of the upper watershed falls within the Angeles National Forest, including large portions of the San Gabriel Mountains. This portion of the watershed also contains the Merced and San Jose Hills and the Puente-Chino Hills. Approximately 26 percent of the watershed's total area is developed with urban and related land uses (LACDPW 2006).

6.2.3.1 San Gabriel River and Local Surface Waters

The San Gabriel River originates in the San Gabriel Mountains in the Angeles National Forest and flows southwest to empty into the Pacific Ocean at Seal Beach, near the Los Angeles and Orange County border. Within the DSA of Alternative 1, the river flows in a soft-bottomed channel between raised levees (LACDPW 2006). 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 with the exception of the Whittier Narrows area (LACDPW 2006).

Although the San Gabriel River is not a tributary to the Los Angeles River, it is connected to the Los Angeles River via the Rio Hondo through the three channels listed in **Section 6.2.2.1**. As defined in the San Gabriel River Corridor Master Plan, the DSA of Alternative 1 is in Reach 5 (Upper Coastal Plain), which extends from Whittier Narrows to where the river crosses Firestone Boulevard in Downey and Norwalk (LACDPW 2006). In addition to the San Gabriel River, the three main surface water resources in the watershed in the vicinity of the Project are Walnut Creek, San Jose Creek, and Coyote-Carbon Creek (**Figure 6.2**). 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 the operation or construction of the Project.

6.3 Water Quality

6.3.1 Surface Water

6.3.1.1 Rio Hondo Watershed – Rio Hondo

As defined in the *LA Basin Plan*, the DSA of Alternative 1 is located in Rio Hondo Reach 2 which extends from the Santa Ana Freeway to Whittier Narrows Dam. *The LA Basin Plan* lists potential and intermittent beneficial uses in the Rio Hondo Reach 2, which include:

- **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. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs. Recreational access is prohibited by Los Angeles County in the concrete-channel areas.

Waterbodies not meeting the beneficial uses of state water quality standards are placed on the 303(d) List of Water Quality Limited Segments and states are required to develop TMDLs for the pollutants causing the impairment as described in **Section 3.1.1**. The pollutants causing impairments in Reach 2 of the Rio Hondo and associated TMDLs are summarized in **Table 6-1**.

Table 6-1. 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, 2021.
Notes:
1 A = Pollutant requiring a TMDL.
2 B = Pollutant being addressed by USEPA approved TMDL.

The *Basin Plan* provides water quality objectives required to address sources of impairment and protect beneficial uses. The *Basin Plan's* water quality objective for cyanide in inland surface waters states that the maximum contaminant levels for cyanide (for MUN beneficial use) is 0.15 mg/L. *The Basin Plan* includes two objectives for coliform bacteria in inland surface waters, including 1) *E. coli* density shall not exceed 126/100 ml (Geometric Mean Limits); and 2) *E. coli* density shall not exceed 235/100 ml (Single Sample Limits) (LARWQCB 2014).

6.3.1.2 San Gabriel River Watershed – San Gabriel River

As defined in the *LA Basin Plan*, the DSA of Alternative 1 is located in San Gabriel River Reach 2 which extends from Firestorm Boulevard to Whittier Narrows Dam. Water quality in the San Gabriel River is impaired by pollutants transported in runoff from dense residential and commercial development in the middle watershed. In addition, tertiary effluent from several sewage treatment plants enters Reach 2 of the river (LARWQCB 2014).

The *LA Basin Plan* lists the existing beneficial uses for the San Gabriel River for Reach 2 as WILD; Rare, Threatened, or Endangered Species; REC-1; and REC-2 (Non-contact Water Recreation) (LARWQCB 2014). REC-1 uses are prohibited in concrete-channelized areas by Los Angeles County.

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 including, but not limited to, mining, cooling water supply, and fire protection.
- Industrial Process Supply (PROC): for uses of water for industrial activities that depend primarily on water quality.

Table 6-2 summarizes the pollutants causing impairments and the associated TMDLs in Reach 2.

Table 6-2. List of Pollutants Covered by TMDLs, San Gabriel River Reach 2

Pollutant	TMDL Requirement Status	Expected TMDL Completion Date[3]	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, 2021
Notes:
1 A = Pollutant requiring a TMDL.
2 B = Pollutant being addressed by USEPA approved TMDL.

The *Basin Plan's* water quality objective to address cyanide in inland surface waters is described in **Section 6.3.1**. There is no dissolved lead water quality objective for the San Gabriel River. The *Basin Plan's* water quality objective to address temperature provides that, for inland surface waters designated as WARM, water temperature shall not be altered by more than 5 degrees Fahrenheit above the natural temperature. At no time shall these WARM-designated waters be raised above 80 degrees Fahrenheit as a result of waste discharges (LARWQCB 2014).

6.3.2 Groundwater

6.3.2.1 Central Subbasin

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 in the Central Subbasin. The WRD's monitoring for Water Year 2006-2007 found that groundwater in the main producing aquifers of the basin is of good quality; however, volatile organic compounds (VOCs) (primarily perchloroethylene [PCE] and trichloroethylene [TCE]) are present in the Central Subbasin and have impacted many production wells (WRD 2021). VOCs are at low concentrations and are below enforceable regulatory levels.

The Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report describes specific local causes and sources of groundwater contamination within one-quarter mile of the proposed alignments as well as some that are located directly along the Build Alternatives.

Table 6-3 summarizes water quality in public supply wells in the Coastal Plain of Los Angeles Central Subbasin as monitored by the WRD of Southern California for the Water Year 2019-2020 for key water quality constituents.

Table 6-3. Constituents of Concern in the Central Subbasin (Water Year 2019-2020)

Constituent	Units	MCL[1]/SMCL[2]/NL[3]	Summary of Sampling Results
Total Dissolved Solids[4]	mg/L[5]	500-1,000	TDS concentrations relatively low in Central Subbasin; TDS was above SMCL in 10 percent of monitoring wells
Arsenic	µg/L[6]	10	Arsenic was detected at concentrations above the MCL in 4 percent of individual well zones
Chloride	mg/L	250 - 500	Chloride was detected at concentrations above SMCL in 3 percent of monitoring wells.
1,4-Dioxane	µg/L	1	1,4-Dioxane was detected at concentrations above the NL in 13 percent of individual well zones
Volatile Organic Compounds (TCE and PCE[7])	µg/L	5	TCE detected in concentrations above the MCL in 3 percent of individual well zones PCE not detected in concentrations above the MCL in any monitoring wells
Perchlorate	µg/L	6	Perchlorate detected in concentrations above the MCL in less than one percent of individual well zones
Nitrate	mg/L	10	Nitrate detected at concentrations above MCL in one percent of individual well zones
Iron and Manganese	mg/L (iron) µg/L (manganese)	0.3 (iron) 50 (manganese)	Iron was detected above the SMCL in 7 percent of production wells in the Central Subbasin Detected above the NL in 28 percent of production wells in the Central Subbasin
Hexavalent Chromium	µg/L	10	Detected above MCL in 2 percent of individual well zones
Per- and Polyfluoroalkyl Substances (PFAS)	ng/L[8]	5.1 PFOA[9] 6.5 PFOS[10]	PFOA detected in 66 percent of wells tested PFOS detected above NL in 69 percent of wells tested

Source: WRD, 2021.
Notes:
1 MCL = maximum contaminant level – defined as an enforceable drinking water standard that the California Department of Public Health establishes after health effects, risk assessments, detection capability, treatability, and economic feasibility are considered (WRD 2019).
2 SMCL = secondary maximum contaminant level – established for constituents that impact aesthetics of the water, such as taste, odor, and color, but do not impact health (WRD 2019).
3 NL = Notification Level - non-enforceable health-based advisory levels established by the DDW based on preliminary reviews of health effects studies for which enforceable levels have not been established (WRD 2019).
4 TDS = Total Dissolved Solids
5 mg/L = milligrams per liter
6 µg/L = micrograms per liter
7 TCE = trichloroethylene; PCE = perchloroethylene
8 ng/L = nanogram per liter
9 PFOA = Perfluorooctanoic acid
10 PFOS = Perfluorooctanesulfonic acid

In addition to contaminants identified through monitoring performed by WRD of Southern California, the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report identifies sites in the DSAs where groundwater contamination has been documented. Groundwater

contamination along Alternative 1 includes chlorinated solvents, hydrocarbons, gasoline and other fuels (diesel), landfill gases, oil, natural gas, and VOCs.

6.4 Groundwater Supplies and Recharge

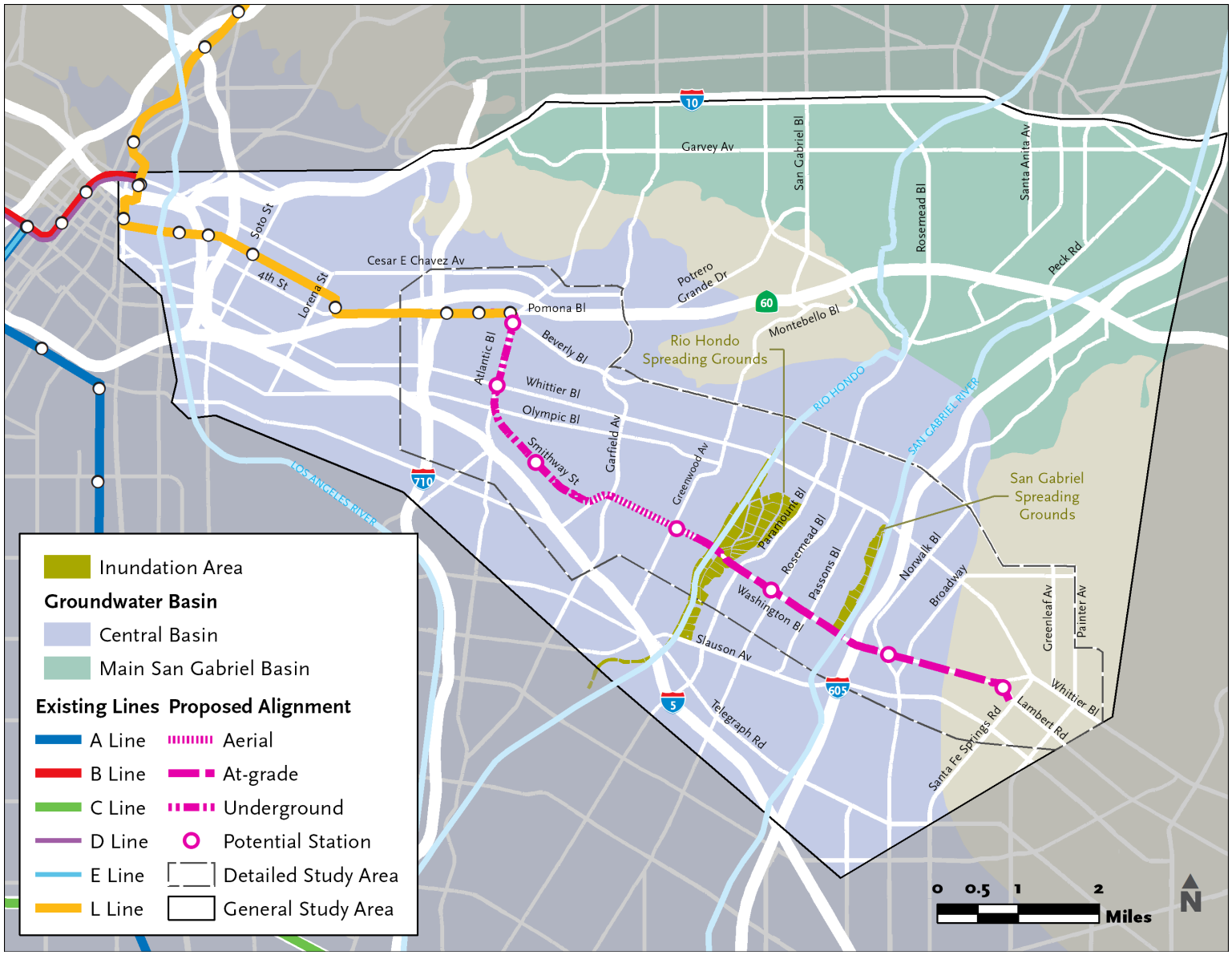
The latest data from LACDPW on groundwater wells in the vicinity of the DSAs show lower groundwater tables (more than 50 feet below ground surface [bgs]) in the western and southern portions of the DSAs and higher (less than 50 feet bgs) groundwater tables near the spreading grounds (LACDPW 2019). Based on LACDPW data (LACDPW 2019) the groundwater wells in the vicinity of the underground alignment are approximately 120 to 180 feet bgs. Based on information reported to LARWQCB, the depth to the first layer of groundwater encountered from the ground surface in the vicinity of the underground guideway ranged between approximately 100 to 130 feet bgs in 2005 (LARWQCB 2005).

Groundwater basins are formed when sediments, including sand and gravel, fill underground formations that then collect water and serve as underground water reservoirs (LACDPW 2006). A major factor in the production capacities of groundwater basins is the recharge of underground water resources. **Figure 6.3** shows the Central Subbasin groundwater basin, which underlies the DSAs and is used for potable water resources. One important way recharge happens in this basin is through infiltration at the spreading grounds. When filled with water, spreading grounds form large ponds to hold water and allow sufficient time for it to percolate into the groundwater layers. As shown on **Figure 6.2 i**n **Section 6.1** the main spreading areas in or near the DSAs are the Rio Hondo and San Gabriel Spreading Grounds, which are owned by the LACFCD and are operated by the LACDPW (LACDPW 2006). The primary areas of groundwater infiltration within the DSA of Alternative 1 are described below:

- **San Gabriel River:** Within the DSA, the 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). Sources of water include area dams (Santa Fe and Whittier Narrows), imported water, and uncontrolled runoff from the surrounding areas.

- **San Gabriel Spreading Grounds:** These grounds are comprised of three shallow basins along the San Gabriel River that replenish the Central Subbasin. Located on the western side of the San Gabriel River south of Whittier Boulevard, the grounds extend south to Washington Boulevard along Alternative 1. Percolation occurs over 96 acres with a storage capacity of 550 acre-feet of water. Sources of water include controlled releases from Whittier Narrows and Santa Fe Dams, as well as imported and reclaimed water.

- **Rio Hondo Spreading Grounds:** These grounds are comprised of 20 shallow basins below Whittier Narrows that replenish the Central Groundwater Subbasin. Primarily located on the eastern side of the Rio Hondo south of Whittier Boulevard, the grounds extend through the DSA to Slauson Avenue. On the western side of the Rio Hondo, the spreading grounds span from 0.2 mile north of Whittier Boulevard through the DSA to south to Foster Bridge Boulevard in Downey. Percolation occurs over 430 acres with a storage capacity of 3,694 acre-feet of water. Sources of water include controlled releases from Whittier Narrows and Santa Fe Dams, uncontrolled runoff via the San Gabriel River and Rio Hondo, and imported and reclaimed water.



Source: Los Angeles County 2020.

Figure 6.3. Groundwater Basins Underlying the Alternative 1 Detailed Study Area

Table 6-4 summarizes the size and capacity of recharge areas in the DSA of Alternative 1.

Table 6-4. Summary of Recharge Basins in the Detailed Study Area

Spreading Basin	Area (acres)	Wetted Area (acres)	Recharge Capacity (AFY)	Water Source	Owner
Rio Hondo Spreading Grounds	570	430	~290,000	Runoff Imported Recycled	LACDPW
San Gabriel River Spreading Grounds	128	96	54,000	Runoff Imported Recycled	LACDPW
San Gabriel River	308	308	54,000	Runoff Imported Recycled	LACDPW
TOTAL	1,006	834	~398,000	--	--

Source: Adapted from MWD of Southern California, 2007.
Key:
AFY = acre feet per year
LACDPW = Los Angeles County Department of Public Works

6.4.1 Central Subbasin

The Central Subbasin is part of the Los Angeles Coastal Plain Groundwater Basin, which is incorporated into the Coastal Plain Hydrographic Subunit. The Coastal Plain Hydrographic Subunit contains the Central, West Coast, Santa Monica, and Hollywood Basins. The Central Subbasin, one of the most important basins in the hydrographic subunit, directly underlies the DSAs (City of Los Angeles Planning Department 1995). The northeastern portion of the Central Subbasin underlies the Rio Hondo and San Gabriel River Watersheds and the northwestern and western portions of the subbasin underlie the Los Angeles River Watershed. The subbasin is formed by the Whittier Narrows Fault Zone on the northeast and the Newport-Inglewood Fault on the southwest (LACDPW 2006).

The Central Subbasin extends over much of the Coastal Plain and holds most of its groundwater. The subbasin underlies the service areas of the Metropolitan Water District member agencies including the Central Basin Municipal Water District and the city of Los Angeles (MWD of Southern California 2007). Total water storage in the subbasin is 13.8 million acre-feet and the natural safe yield is 125,805 acre-feet per year. In comparison, the managed safe yield of the subbasin is 217,367 acre-feet per year. This higher number is possible due to artificial recharge maintained by WRD of Southern California (MWD of Southern California 2007). The depth of the Central Subbasin is between 1,600 and 2,200 feet (MWD of Southern California 2007). The Central Subbasin is further divided into the Los Angeles Forebay, the Montebello Forebay, and the Whittier and Central Basin Pressure Areas. The alignment is located in the vicinity of the Montebello Forebay Area, which includes the Rio Hondo and San Gabriel Spreading Grounds as well as unlined reaches of the San Gabriel River (LACDPW 2006).

The Central Subbasin is an unconfined aquifer with soils that allow water to percolate through the basin (LACDPW 2006). Groundwater resources are replenished in the Central Subbasin through surface and subsurface flow and by direct percolation of precipitation, stream flow, and applied water in the forebay areas (Department of Water Resources [DWR] 2004). Natural replenishment of groundwater happens in the forebay areas where permeable sediment is exposed at ground surface (DWR 2004). For the Central Subbasin, this takes place largely in the Whittier Narrows area near the

Rio Hondo. As described in the *San Gabriel River Corridor Master Plan*, the Central Subbasin relies on five main sources of water, including (LACDPW 2006):

- Imported water purchased from the MWD of Southern California
- Reclaimed water from local water reclamation plants
- Local runoff and rainfall
- "Make-up"[1] water from the Main San Gabriel Basin
- Subsurface flows from adjacent basins

The main source of potable groundwater in the Central Subbasin is from the deeper aquifers of the San Pedro Formation (including the Lynwood, Silverado, and Sunnyside Aquifers). The shallower aquifers of the Alluvium and Lakewood Formation locally produce smaller volumes of potable water. In the forebay area, many of the aquifers merge and allow for direct recharge into the deeper aquifers (MWD of Southern California 2007). Historically, groundwater flow within the basin tended to be from the recharge areas in the northeast to the southwest toward the Pacific Ocean. Central Subbasin water levels ranged from a high of about 160 feet above mean sea level in the northeast portion of the basin to a low of approximately 90 feet below mean sea level in the Long Beach area (MWD of Southern California 2007).

During scoping for the Eastside Transit Corridor Phase 2 Project Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR), DWR commented on March 26, 2010 that all water rights in the Central Subbasin have been allocated to parties to the Central Basin Judgment. DWR was designated as Watermaster to monitor groundwater extractions in the subbasin. Therefore, no groundwater extraction would be allowed from the subbasin without obtaining water rights in the subbasin.

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. Each basin's priority determines which provisions of California Statewide Groundwater Elevation Monitoring and SGMA apply (the SGMA is discussed in more detail in **Section 3.2.7**). Because of its low priority rating, development of a groundwater sustainability plan for the basin underlying the DSAs is not required under the SGMA.

[1] The concept of "make-up" water stems from the Long Beach Judgment water rights adjudication, which divided the water supply of the San Gabriel River system. Under the judgment, the area downstream of Whittier Narrows receives a specific quantity of usable water annually from the San Gabriel River system from the area upstream of Whittier Narrows. Provision is made for the supply of "make-up" water for years in which the guaranteed entitlement is not received by the downstream area (City of Alhambra 2005).

6.5 Drainage

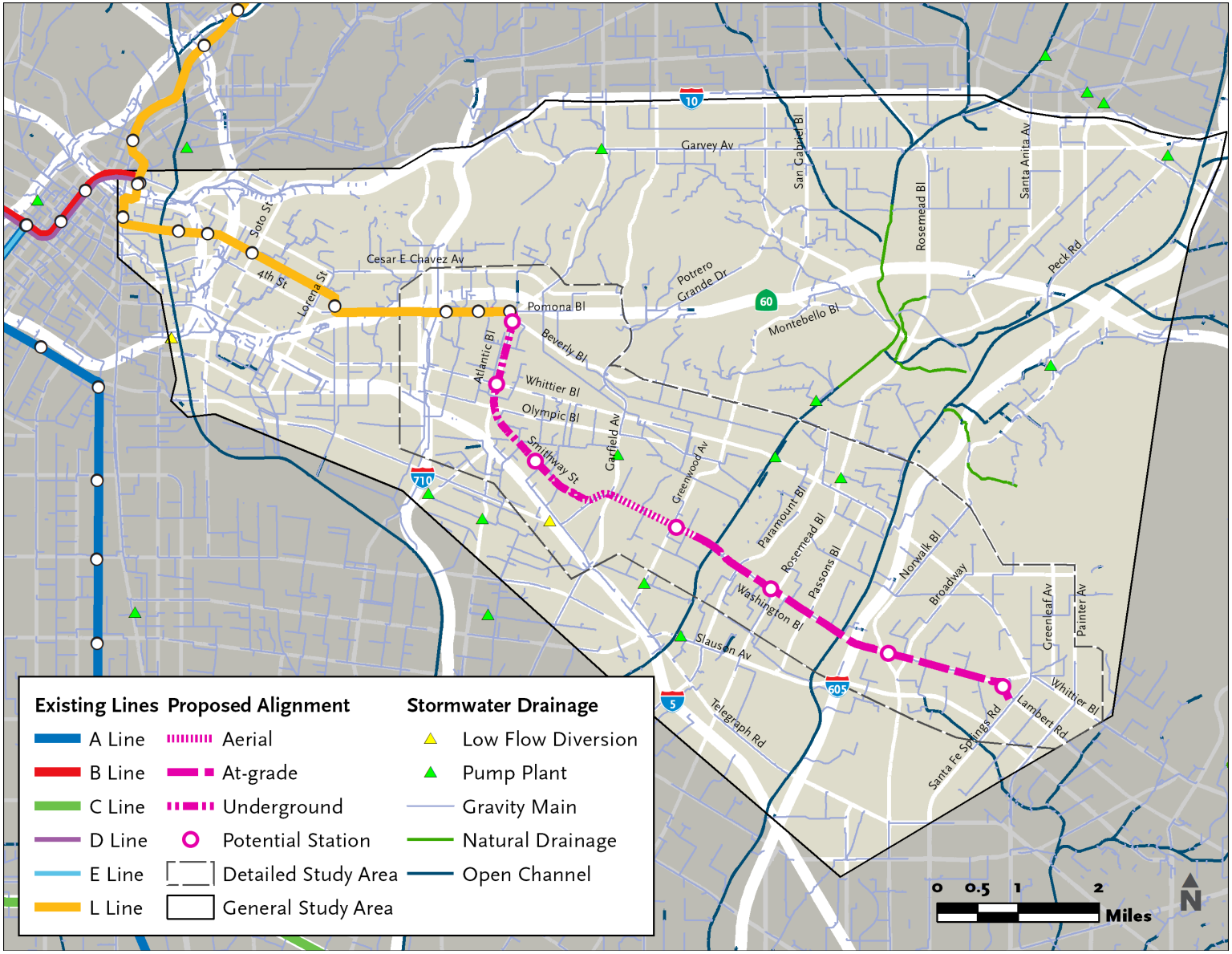
Based on aerial imagery and site visits to the DSAs, land in the county and cities within the DSAs is urbanized and largely covered with impervious surfaces, such as areas of asphalt, concrete, buildings, and other land uses which concentrate storm runoff. Areas of pervious surfaces include the Rio Hondo Spreading Grounds and San Gabriel River and to a minimal extent, landscaped medians and setbacks, parks, and residential yards within the DSAs. Stormwater and other surface water runoff is conveyed to municipal storm drains (**Figure 6.4**). Most local drainage networks are controlled by structural flood control measures. The majority of the length of the Build Alternatives is along major arterials with curb and gutter features. There are multiple storm drains and drainage features within the DSAs.

In the vicinity of the San Gabriel River within the DSA of Alternative 1, the drainage pattern is generally from the northeast to the south and southwest. Within and upstream of the DSAs, stormwater flows through constructed drainages (both at-grade and underground) where it is transported downstream to the Rio Hondo and San Gabriel River (LACDPW 2006). The stormwater then infiltrates into the groundwater at the spreading grounds and soft bottom portions of the channel or flows into the Pacific Ocean. Since topography plays an important role in stormwater drainage, the storm drain system that exists today generally mimics the historical locations of rivers and tributaries in the watersheds. Additionally, many of the original natural drainages have been engineered to serve as stormwater drainage for the LACDPW (LACDPW 2006). Jurisdiction over the drainages, tributaries, and rivers in the DSAs is shared between local jurisdictions, LACDPW, and USACE (San Gabriel Valley Council of Governments 2004).

Major storm drains observed during field visits to the Alternative 1 DSA are located along the alignment, directly west of the intersection with Calobar Avenue, and at smaller concrete drainages south of Washington Boulevard including Sorensen drain, Effingwell Creek, and La Cañada Verde Creek.

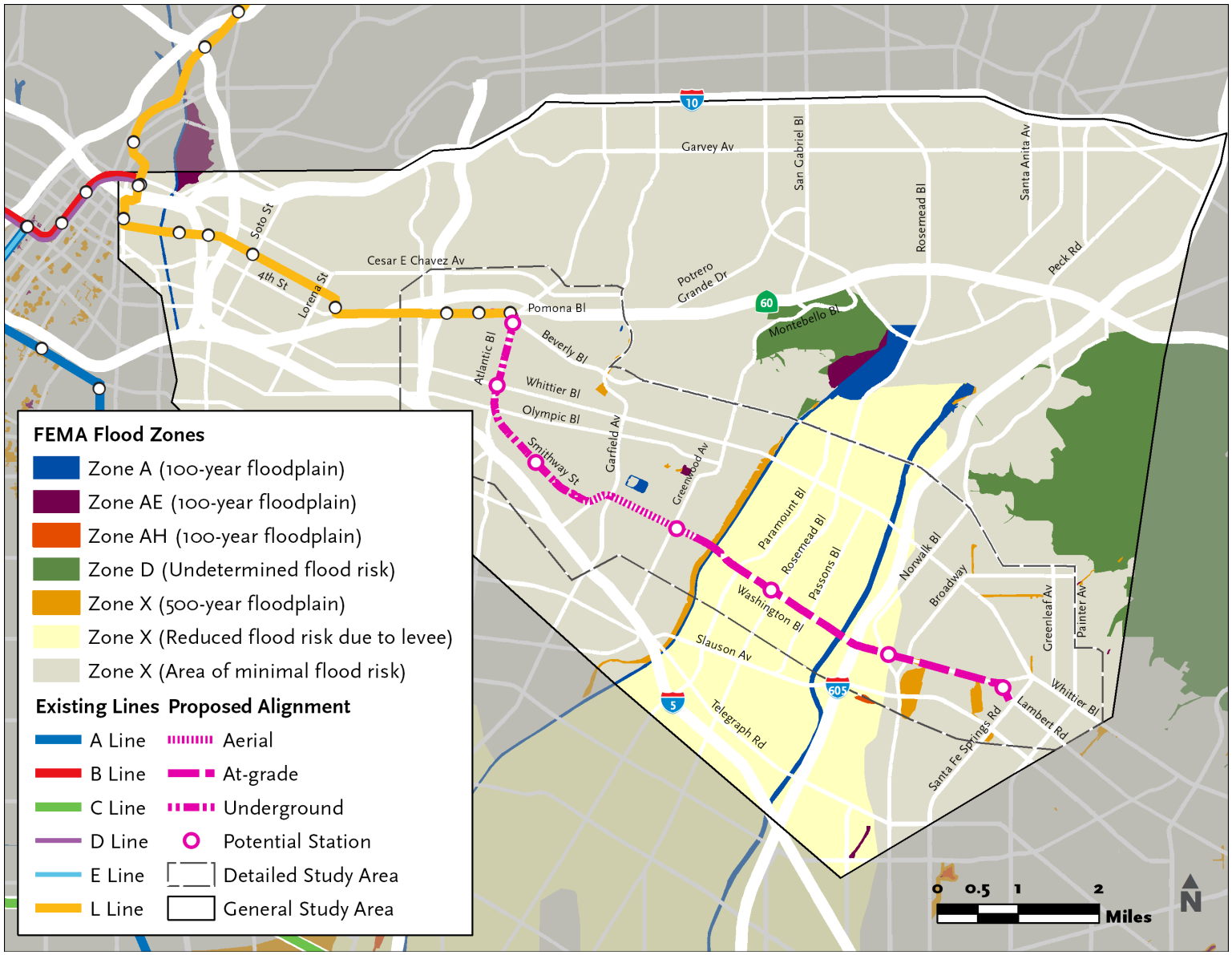
6.6 Flooding and Inundation

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 the MSF site options. FIRM panels that were referred to in order to determine the potential flood hazards associated with the Build Alternatives are: 06037C1645F, 06037C1810F, 06037C1830F, and 06037C1835F. **Figure 6.5** shows flood zones in the DSAs.



Source: Los Angeles County 2021a.

Figure 6.4. Stormwater Drainage Infrastructure in the Alternative 1 Detailed Study Area



Source: FEMA 2021.

Figure 6.5. FEMA Flood Zones in the Alternative 1 Detailed Study Area

6.6.1 Build Alternatives Alignments

6.6.1.1 Flood Zones

The DSAs are dominated by urban development with an extensive engineered stormwater drainage infrastructure. As shown in **Figure 6.5**, the majority of the DSAs are outside of the 100-year and 500-year flood zones and thus would not be susceptible to these storm events as defined by FEMA. FEMA-defined flood zones are described in **Section 3.1.3** and **Section 3.1.4**. The majority of the area where the Build Alternatives are located is in flood zone X, defined as areas of minimal flood risk. In the DSA of Alternative 1 within the cities of Montebello, Pico Rivera, and Santa Fe Springs, there is an area designated as flood zone X shaded where the flood risk has been reduced because of a levee. This area is generally bounded by the Rio Hondo on the west, I-605 on the east, Whittier Narrows on the north, and I-5 on the south. Because flood risk has been reduced in this area, it is not considered part of the floodplain. 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 proposed Montebello MSF site option is also within Zone A, as described further in **Section 6.6.2**.

Improvements to regional drainage infrastructure help protect cities along the Build Alternatives alignments from flooding during major storm events. The 100-year flood zone is used as the benchmark in administering the NFIP, a voluntary program managed by FEMA through which communities enforce floodplain management ordinances in return for federally backed flood insurance (City of Los Angeles Planning Department 1995). Local flooding issues are described in some of the general plans of cities in the DSAs, as discussed in **Section 3.4**. Flooding impacts may occur when development is placed in floodplain areas.

6.6.1.2 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 are located in the DSA of 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.

Earthquake activity can cause large waves to form in enclosed bodies of water. Known as seiches, these waves have the potential to cause inundation. Along the same lines, tsunamis are tidal waves generated in large bodies of water by fault displacement or major ground movement. The nearest enclosed waterbodies to the Build Alternatives are Garvey Reservoir and Legg Lake. Both are located more than 3 miles north of the Build Alternatives. Legg Lake is broken up into several smaller, shallow lake areas, which would greatly reduce the potential for large waves to form on the lake surface. The Build Alternatives are located more than 20 miles from the ocean. 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 6.5** 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 2021). 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).

As described in Eastside Transit Corridor Phase 2 Geology, Soils, Seismicity, and Paleontological Resources Impacts Report, catastrophic failure of a major dam in the vicinity of the Build Alternatives as a result of an earthquake is considered unlikely.

6.6.2 Maintenance and Storage Facilities

The proposed Commerce MSF site option is outside of the 100-year and 500-year flood zones and thus would not be susceptible to flooding during storm events as defined by FEMA.

The proposed Montebello MSF site option is mapped within a 100-year flood zone (FEMA flood zone A). Historically, this area was a rock quarry that collected stormwater and flooded. The area has been filled in and developed, and now has an engineered stormwater system that directs stormwater to the municipal stormwater management system. Therefore, the area no longer floods and does not contain any of the natural functions and values of a floodplain.

6.7 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. Due to the county's dependence on imported water supply sources and its vulnerability to drought, the county is constantly working to develop a diverse range of water resources (Los Angeles County 2015).

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, including information regarding the regional and local water suppliers within the DSAs, is provided in the Eastside Transit Corridor Phase 2 Energy Conservation and Utilities/Service System Impacts Report.

The LACDPW maintains a database of groundwater supply wells (LACDPW 2019). According to this database, the majority of groundwater wells are near the Rio Hondo and San Gabriel River. Additionally, there are ten municipal water wells located within approximately 0.5 mile of the 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 mile 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. A former municipal well near the Commerce MSF site option has been destroyed.

7.0 IMPACTS

7.1 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?

7.1.1 Alternative 1 Washington

7.1.1.1 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 6.3.1**). 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 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, the DSA is already highly urbanized and experiences high levels of vehicle use. Further, 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), LARWQCB's MS4 Permit, and as set forth in PM HWQ-1 in **Section 8.0**, 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 the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report, 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 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 by 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. 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, as described above, implementation of post-construction BMPs as required by the NPDES General Construction Permit and compliance with the MS4, 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, the DSA is primarily covered with impervious surface, which prevents surface water from percolating to groundwater; thus, potential impacts on groundwater quality from percolation of contaminated surface water during operation of Alternative 1 would be primarily limited to the spreading grounds. As discussed above, compliance with permit requirements would minimize stormwater pollution. 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 be noted that, as identified in the Eastside Transit Corridor Phase 2 Transportation and Traffic Impacts Report, Alternative 1 would result in reduced VMT compared to the No Project Alternative. An overall reduction in VMT in the DSA could decrease the pollutants associated with transportation operations (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.

Design Options

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option would have similar effects on surface water and groundwater quality as 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. Operations 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 6.3.1**).

The Project would comply with post-construction BMPs as required by SWRCB's Construction General Permit, LARWQCB's MS4 Permit, and as set forth by PM HWQ-1 (**Section 8.0**). Furthermore, the Project would comply with hazardous materials laws and regulations, as described in the Eastside

Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report. 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 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 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

If the Montebello At-Grade Option were selected, the operational impacts on surface and groundwater would be similar to those described under the base Alternative 1. Operations 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 6.3.1**).

Potential direct impacts on surface water quality could include increased stormwater runoff that could contaminate local surface water resources in the DSA with pollutants typically associated with transit projects (e.g., oil and grease). The Project would include post-construction BMPs as required by SWRCB's Construction General Permit, LARWQCB's MS4 Permit, and as set forth by PM HWQ-1 (**Section 8.0**). With implementation of post-construction BMPs, such as those identified above, no substantial degradation of surface water quality from runoff generated by operation of Alternative 1 would occur.

Potential direct impacts on water quality could also result from the accidental release of hazardous materials involved in operational activities, including fuels (for maintenance vehicles), paints, lubricating fluids, and solvents used for maintenance. As described in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report, 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. Thus, operation of Alternative 1 with the Montebello At-Grade Option would not violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality; impacts would be less than significant.

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 reach surface water resources in the DSA and result in adverse impacts on surface water quality. As mentioned 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 operation of

trains would not violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality; impacts would be less than significant.

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, as described above, implementation of the NPDES General Construction Permit post-construction BMPs as well as compliance with the MS4, would minimize stormwater and non-stormwater runoff from the DSA during operation. Thus, percolation of polluted water to groundwater basins underlying the DSA would be unlikely. Additionally, because the DSA is primarily covered with impervious surface, which prevents surface water from percolating to groundwater, potential impacts on groundwater quality from percolation of contaminated surface water would be limited. Therefore, operation of Alternative 1 with the Montebello At-Grade Option 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 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.

7.1.1.2 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. Details of SWPPP requirements are discussed in **Section 8.0**. 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. The potential for erosion is generally greater when ground disturbing activities are performed during the rainy season, as disturbed soil can be exposed to rainfall and storm runoff. If ground disturbing activities must take place during the rainy season, 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. 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 8.0**.

Construction of Alternative 1 would involve construction across the Rio Hondo and San Gabriel River and the Rio Hondo Spreading Grounds. The existing bridge over the Rio Hondo would be demolished and replaced with a new bridge that carries both the LRT facility and the roadway. The proposed replacement bridge be wider than the existing bridge to accommodate the light rail guideway and would include one column in the Rio Hondo and one column in the spreading grounds. The bridge that currently crosses the San Gabriel River would also have to be removed and replaced with a new structure to carry both the LRT facility and four-lane roadway. A total of four bridge piers within the San Gabriel River would be replaced. Construction activities associated with replacing bridge piers has the potential to impact water quality. 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 by PM HWQ-3 (**Section 8.0**), 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 in the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River, 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 9.1.1**, would reduce this impact to less than significant.

There is the potential during construction to encounter, dewater, and dispose of shallow 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 Eastside Transit Corridor Phase 2 Geology and Soils Impacts Report). If groundwater is encountered, it would be pumped out, treated if required, and disposed. 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." With this method, the hole is kept filled with a drilling fluid during the entire operation of drilling the hole and placing the reinforcing and concrete. The drilling fluid may consist of water if the hole is stable against collapse, or a prepared slurry designed to maintain stability of the hole. The drilling slurry is formed by adding either mineral bentonite or synthetic polymers to water and is maintained inside the drilled hole at least five or more feet higher than the groundwater level. The expelled slurry would be pumped out of the hole and contained for disposal.

If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. MM HAZ-2, discussed in **Section 9.1.1**, 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 Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report.

As described above in **Section 6.3.2** and in greater detail in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report, known and/or suspected groundwater contamination exists in the vicinity of Alternative 1. While construction of Alternative 1 would not occur directly within any of the known contaminated sites, construction could encounter groundwater contaminated with hazardous materials from other sources such as underground storage tanks. Contaminated groundwater may contain pollutants covered by TMDLs (i.e., lead and cyanide) in the portions of the Rio Hondo and San Gabriel River within the DSA of Alternative 1 (**Section 6.3.1**). Thus, construction of Alternative 1 may release contaminated groundwater into nearby surface water and groundwater bodies and a potentially significant impact could occur. MM HAZ-3 is discussed in **Section 9.1.1** 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 potential impacts on groundwater quality from hazardous and contaminated materials, is discussed in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report.

See **Section 9.1.1** for the proposed mitigation and impacts after incorporation of mitigation.

Design Options

Atlantic/Pomona Station Option

Construction of Alternative 1 with the Atlantic/Pomona Station Option would have similar effects on surface water and groundwater quality as construction of 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. To reduce any potential impacts related to stormwater runoff from construction sites, a SWPPP would be prepared to comply with the NPDES Construction General Permit. SWPPP requirements are described in more detail in **Section 8.0**. 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. 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 (**Section 8.0**).

Construction of Alternative 1 with the Atlantic/Pomona Station Option would not affect construction across the Rio Hondo and 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 by PM HWQ-3 (**Section 8.0**), 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 9.1.1**, 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 9.1.1**, 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 the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report.

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 9.1.1**, 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 the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report.

See **Section 9.1.1** for the proposed mitigation and impacts after incorporation of mitigation.

Montebello At-Grade Option

The Montebello At-Grade Option would include a longer at-grade segment, in place of an aerial segment, within the city of Montebello. Similar to the base Alternative 1, water quality impacts could potentially result from construction of Alternative 1 with the Montebello At-Grade Option. As discussed in **Section 7.1.1.2**, construction activities 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 the event of a storm, 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. 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.

To reduce any potential impacts related to stormwater runoff, a SWPPP would be prepared to comply with the SWRCB's NPDES Construction General Permit. SWPPP requirements are described in more detail in **Section 8.0**. 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.

As with the aerial alignment at this location, 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 construction must occur during the rainy season, the selected BMPs would focus on erosion control and keeping soil and sediment in place. End-of-pipe soil/sediment control measures (e.g., basins and traps) would be used as secondary measures. Entry and egress from construction sites would be carefully controlled to minimize off-site tracking of soil.

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 (**Section 8.0**).

Construction of Alternative 1 with the Montebello At-Grade Option would not affect construction across the Rio Hondo and 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 by PM HWQ-3 (**Section 8.0**), 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 9.1.1**, 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 9.1.1**, 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 the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report.

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 9.1.1**, 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 the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report.

See **Section 9.1.1** for the proposed mitigation and impacts after incorporation of mitigation.

7.1.2 Alternative 2 Atlantic to Commerce/Citadel IOS

7.1.2.1 Operational Impacts

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. Alternative 2 is not near the Rio Hondo Reach 2 or San Gabriel River Reach 2. Further, operation of Alternative 2 would not generate pollutants covered by TMDLs in the Rio Hondo or San Gabriel River. Operation of Alternative 2 has the potential to increase the concentration and accumulation of pollutants typically

associated with transit projects (e.g., oil and grease. In compliance with SWRCB's Construction General Permit and MS4 NPDES permit, and as set forth in PM HWQ-1 in **Section 8.0**, post-Project BMPs would be installed to minimize stormwater pollution. With implementation of post-construction BMPs, operation of Alternative 2 would not result in substantial degradation of 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 2 including fuels (for maintenance vehicles), paints, lubricating fluids, and solvents used for maintenance. As described in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report, 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. Thus, operation of Alternative 2 would not violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality from the use of hazardous materials; impacts would be less than significant.

Operation of Alternative 2 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 near the DSA of Alternative 2 and result in adverse impacts on surface water quality. 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. Thus, operation of Alternative 2 would have less than significant indirect impacts on surface water quality.

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. However, as described above, implementation of post-construction BMPs required by the NPDES General Construction Permit and compliance with the MS4 and set forth in PM HWQ-1 would reduce stormwater and non-stormwater runoff from the DSA during operation to a less than significant level. Treatment of stormwater runoff using infiltration BMPs would reduce the risk that polluted water would percolate into groundwater basins underlying the DSA. Additionally, the DSA is primarily covered with impervious surface, which prevents surface water from percolating to groundwater; thus, potential impacts on groundwater quality from percolation of contaminated surface water during operation of Alternative 2 would be limited. Therefore, operation of Alternative 2 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 2 would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Thus, operation of Alternative 2 would have less than significant impacts on surface water and groundwater quality.

It should be noted that, as identified in the Eastside Transit Corridor Phase 2 Transportation and Traffic Impacts Report, operation of Alternative 2 would result in reduced VMT compared to the No Project Alternative. An overall reduction in VMT in the DSA 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.

Design Option

Atlantic/Pomona Station Option

Operation of Alternative 2 with the Atlantic/Pomona Station Option would have similar effects on surface water and groundwater quality as the base Alternative 2. As with the base Alternative 2, Alternative 2 with the Atlantic/Pomona Station Option has the potential to degrade surface water quality. Operation of Alternative 2 with the Atlantic/Pomona Station Option would not generate pollutants covered by TMDLs in the Rio Hondo or the San Gabriel River (as discussed in **Section 6.3.1**).

The Project would comply with post-construction BMPs as required by SWRCB's Construction General Permit, would comply with LARWQCB's MS4 Permit, and PM HWQ-1 (**Section 8.0**). Furthermore, as described in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report, the Project would comply with hazardous materials laws and regulations. Thus, operation of Alternative 2 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.

Because the implementation of BMPs required by NPDES permits and set forth in PM HWQ-1 would reduce stormwater and non-stormwater runoff from the DSA of Alternative 2 during operation to a less than significant level, 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 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, operation of Alternative 2 with the Atlantic/Pomona Station Option would have less than significant impacts on surface water and groundwater quality.

7.1.2.2 Construction Impacts

Water quality impacts could potentially result from construction of Alternative 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. 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. SWPPP requirements are described in more detail in **Section 8.0**. 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.

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. The potential for erosion is generally greater when ground disturbing activities are performed during the rainy season, as disturbed soil can be exposed to rainfall and storm runoff. If ground disturbing activities must take place during the rainy season, 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 plan would include BMPs, such as those identified in **Section 8.0**, as appropriate. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are set forth in PM HWQ-2 (**Section 8.0**).

Under Alternative 2, 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 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 in **Section 7.1.1.2** and discussed in **Section 9.1.2**, would help minimize the spread of contaminated groundwater and would reduce this potential impact from construction of Alternative 2 to less than significant.

As described above in **Section 6.3.2** and in greater detail in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report, known and/or suspected groundwater contamination exists in the vicinity of Alternative 2. While construction of Alternative 2 would not occur directly within any of the identified contaminated sites, construction could encounter groundwater contaminated with hazardous materials from other sources such as underground storage tanks. Contaminated groundwater may contain pollutants covered by a TMDL (i.e., cyanide). Thus, construction may release contaminated groundwater into surface waters and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized in **Section 7.1.1.2** and discussed in **Section 9.1.2**, would reduce this potential impact from construction of Alternative 2 to less than significant.

See **Section 9.1.2** for the proposed mitigation and impacts after incorporation of mitigation. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report.

Design Option

Atlantic/Pomona Station Option

Construction of Alternative 2 with the Atlantic/Pomona Station Option would have similar effects on surface water and groundwater quality as construction of the base Alternative 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. To reduce any potential impacts related to stormwater runoff from construction sites, a SWPPP would be prepared to comply with the NPDES Construction General Permit. SWPPP requirements are described in more detail in **Section 8.0**. 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. 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 (**Section 8.0**).

Under Alternative 2 with the Atlantic/Pomona Station Option, 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 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 in **Section 7.1.1.2** and discussed in **Section 9.1.2**, would help minimize the spread of contaminated groundwater and would reduce this potential impact from construction of Alternative 2 with the Atlantic/Pomona Station Option to less than significant.

As described above in **Section 6.3.2** and in greater detail in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report, known and/or suspected groundwater contamination exists in the vicinity of Alternative 2 with the Atlantic/Pomona Station Option. While construction would not occur directly within any of the contaminated sites, construction could encounter groundwater contaminated with hazardous materials from other sources such as underground storage tanks. Contaminated groundwater may contain pollutants covered by a TMDL (i.e., cyanide). Thus, construction may release contaminated groundwater into surface waters and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized in **Section 7.1.1.2** and discussed in **Section 9.1.2**, would reduce this potential impact from construction of Alternative 2 with the Atlantic/Pomona Station Option to less than significant.

See **Section 9.1.2** for the proposed mitigation and impacts after incorporation of mitigation. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report.

7.1.3 Alternative 3 Atlantic to Greenwood IOS

7.1.3.1 Operational Impacts

Potential direct impacts on surface water quality could include increased stormwater runoff from surface facilities that could contaminate local surface water resources. Operation of Alternative 3 would not generate pollutants covered by TMDLs in the portions of the Rio Hondo near Alternative 3 (as discussed in **Section 6.3.1**). The San Gabriel River would not be near Alternative 3, and thus, would not be affected by Alternative 3. The operation of Alternative 3 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 8.0**, post-Project BMPs would be installed to minimize stormwater pollution. With implementation of post-construction BMPs, operation of Alternative 3 would not result in substantial degradation of 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 3 including fuels (for maintenance vehicles), paints, lubricating fluids, and solvents used for maintenance. As described in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report, 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 3 would not violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality; impacts would be less than significant.

Operation of Alternative 3 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 near Alternative 3 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. Thus, operation of Alternative 3 would have less than significant indirect impacts.

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 of Alternative 3. However, as described above, implementation of post-construction BMPs required by the NPDES permits and set forth in PM HWQ-1 would reduce stormwater and non-stormwater runoff from the DSA following construction to a less than significant level. Treatment of stormwater runoff using infiltration BMPs would reduce the risk that polluted water would percolate into groundwater basins underlying the DSA. Additionally, the DSA is primarily covered within impervious surface, which prevents surface water from percolating to groundwater; thus, potential impacts on groundwater quality from percolation of contaminated surface water during operation of Alternative 3 would be limited. Therefore, operation of Alternative 3 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 3 would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Thus, operation of Alternative 3 would have less than significant impacts on surface water and groundwater quality.

It should be noted that, as identified in the Eastside Transit Corridor Phase 2 Transportation and Traffic Impacts Report, operation of Alternative 3 would result in reduced VMT compared to the No Project Alternative. An overall reduction in VMT in the DSA 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.

Design Option

Atlantic/Pomona Station Option

Operation of Alternative 3 with the Atlantic/Pomona Station Option would have similar effects on surface water and groundwater quality as the base Alternative 3. As with the base Alternative 3, Alternative 3 with the Atlantic/Pomona Station Option has the potential to degrade surface water quality. Operations would not generate pollutants covered by TMDLs in the portions of the Rio Hondo near Alternative 3 and would not affect the San Gabriel River (as discussed in **Section 6.3.1**).

The Project would comply with post-construction BMPs as required by SWRCB's Construction General Permit, would comply with LARWQCB's MS4 Permit, and PM HWQ-1 (**Section 8.0**). Furthermore, as described in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report, the Project would comply with hazardous materials laws and regulations. Thus, operation of Alternative 3 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.

Because the implementation of BMPs required by NPDES permits and set forth in PM HWQ-1 would reduce stormwater and non-stormwater runoff from the DSA of Alternative 3 during operation to a less than significant level, 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 3 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 3 with the Atlantic/Pomona Station Option would have less than significant impacts on surface water and groundwater quality.

Montebello At-Grade Option

If the Montebello At-Grade Option were selected, the operational impacts on surface and groundwater would be similar to those described under the base Alternative 3. Potential direct impacts on surface water quality could include increased stormwater runoff that could contaminate local surface water resources near Alternative 3 with the Montebello At-Grade Option, primarily the Rio Hondo, with pollutants typically associated with transit projects (e.g., oil and grease). However, operations would not generate pollutants covered by TMDLs in the portions of the Rio Hondo near Alternative 3 (**Section 6.3.1**). Furthermore, the DSA of Alternative 3 is already highly urbanized and experiences high levels of vehicle use. Operations would include post-construction BMPs as required by SWRCB's Construction General Permit (Order #2009-0009-DWQ) and comply with LARWQCB's MS4 Permits (Order No. R4-2012-0175 and NPDES No. CAS004001). With implementation of post-construction BMPs, such as those identified in **Section 8.0**, no substantial degradation of surface water quality from runoff generated by operation of Alternative 3 with the Montebello At-Grade Option would occur.

Potential direct impacts on water quality could also result from the accidental release of hazardous materials involved in operation Alternative 3 with the Montebello At-Grade Option including fuels (for maintenance vehicles), paints, lubricating fluids, and solvents used for maintenance. As described in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report, 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. Thus, operation of Alternative 3 with the Montebello At-Grade Option would not violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality; impacts would be less than significant.

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 reach surface water resources in the DSA and result in adverse impacts on surface water quality. As mentioned 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; impacts would be less than significant.

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, as described above, implementation of the NPDES General Construction Permit post-construction BMPs as well as compliance with the MS4 would reduce stormwater and non-stormwater runoff from the DSA during operation to a less than significant level. Thus, percolation of polluted water to groundwater basins underlying the DSA would be unlikely. Additionally, because the DSA is primarily covered with impervious surfaces, which prevents surface water from percolating to groundwater, potential impacts on groundwater quality from percolation of contaminated surface water during would be limited. Therefore, operation of Alternative 3 with the Montebello At-Grade Option 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 3 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 3 with the Montebello At-Grade Option would have less than significant impacts on surface water and groundwater quality.

7.1.3.2 Construction Impacts

Water quality impacts could potentially result from construction of Alternative 3. 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.

To reduce any potential impacts related to stormwater runoff, a SWPPP would be prepared to comply with the SWRCB's NPDES Construction General Permit. SWPPP requirements are described in more detail in **Section 8.0**. 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.

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. The potential for erosion is generally greater when ground disturbing activities are performed during the rainy season, as disturbed soil can be exposed to rainfall and storm runoff. If ground disturbing activities must take place during the rainy season, 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 (**Section 8.0**).

Under Alternative 3, 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 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 in **Section 7.1.1.2** and discussed in **Section 9.1.3**, would help minimize the spread of contaminated groundwater and would reduce this potential impact from construction of Alternative 3 to less than significant.

As described above in **Section 6.3.2** and in greater detail in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report, known and/or suspected groundwater contamination exists in the vicinity of Alternative 3. While construction of Alternative 3 would not occur directly within any of the identified contaminated sites, construction could encounter groundwater contaminated with hazardous materials from other sources such as underground storage tanks. Contaminated groundwater may contain pollutants covered by a TMDL (i.e., cyanide) (**Section 6.3.1**). Thus, construction may release contaminated groundwater into surface waters and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized in **Section 7.1.1.2** and discussed in **Section 9.1.3**, would reduce this potential impact from construction of Alternative 2 to less than significant.

See **Section 9.1.3** for the proposed mitigation and impacts after incorporation of mitigation. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report.

Design Options

Atlantic/Pomona Station Option

Construction of Alternative 3 with the Atlantic/Pomona Station Option would have similar effects on surface water and groundwater quality as construction of the base Alternative 3. 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. To reduce any potential impacts related to stormwater runoff from construction sites, a SWPPP would be prepared to comply with the

SWRCB's NPDES Construction General Permit. SWPPP requirements are described in more detail in **Section 8.0**. 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. 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 (**Section 8.0**).

Under Alternative 3 with the Atlantic/Pomona Station Option, 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 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 in **Section 7.1.1.2** and discussed in **Section 9.1.3**, would help minimize the spread of contaminated groundwater and would reduce this potential impact from construction of Alternative 3 with the Atlantic/Pomona Station Option to less than significant.

As described above in **Section 6.3.2** and in greater detail in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report, known and/or suspected groundwater contamination exists in the vicinity of Alternative 3 with the Atlantic/Pomona Station Option. While construction would not occur directly within any of the identified contaminated sites, construction could encounter groundwater contaminated with hazardous materials from other sources such as underground storage tanks. Contaminated groundwater may contain pollutants covered by a TMDL (i.e., cyanide). Thus, construction may release contaminated groundwater into surface waters and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized in **Section 7.1.1.2** and discussed in **Section 9.1.3**, would reduce this potential impact from construction of Alternative 3 with the Atlantic/Pomona Station Option to less than significant.

See **Section 9.1.3** for the proposed mitigation and impacts after incorporation of mitigation. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report.

Montebello At-Grade Option

The Montebello At-Grade Option would include a longer at-grade segment, in place of an aerial segment, within the city of Montebello, which would potentially have more ground disturbance. 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 in order to comply with the SWRCB's NPDES Construction General Permit. SWPPP requirements are described in more detail in **Section 8.0**. 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.

As with the aerial alignment at this location, 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 construction must occur during the rainy season, the selected BMPs would focus on erosion control and keeping soil and sediment in place.

Additionally, in compliance with LARWQCB's MS4 permit, an erosion and sediment control plan would be established prior to the initiation of construction activities subject to approval by LARWQCB. The plan would include BMPs, as appropriate, examples of which are provided in **Section 8.0**. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2 (**Section 8.0**).

Under Alternative 3 with the Montebello At-Grade Option, 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 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 in **Section 7.1.1.2** and discussed in **Section 9.1.3**, would help minimize the spread of contaminated groundwater and would reduce this potential impact from construction of Alternative 3 with the Montebello At-Grade Option to less than significant.

The Montebello At-Grade Option portion might require increased surface-level ground disturbance to construct a longer at-grade segment. Furthermore, the Montebello At-Grade Option would still be associated with construction of the underground alignment. If groundwater is encountered, the walls of the excavation would be supported with the use of drilling muds, or the "wet method of construction," as explained under **Section 7.1.1.2**. As described above in **Section 6.3.2** and in greater detail in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report, known and/or suspected groundwater contamination exists in the vicinity Alternative 3 with the Montebello At-Grade Option. While construction of Alternative 3 with the Atlantic/Pomona Station Option would not occur directly within any of the identified contaminated sites identified in the DSA, construction could encounter groundwater contaminated with hazardous materials from other sources such as underground storage tanks. Contaminated groundwater may contain pollutants covered by a TMDL (i.e., cyanide). Thus, construction may release contaminated groundwater into surface waters and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized in **Section 7.1.1.2** and discussed in **Section 9.1.3**, would reduce this potential impact from construction of Alternative 3 with the Montebello At-Grade Option to less than significant.

See **Section 9.1.3** for the proposed mitigation and impacts after incorporation of mitigation. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report.

7.1.4 Maintenance and Storage Facilities

7.1.4.1 Operational Impacts

7.1.4.1.1 Commerce MSF

The proposed Commerce MSF site 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 that have the potential to affect water quality, would conform with MRDC 11.5 as described in **Section 3.4.1.1.2**. Additionally, operation of the MSF site option 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 8.0**) would be implemented. Operation of the Commerce MSF site option would not affect TMDLs in the Rio Hondo or San Gabriel River as it would not generate pollutants covered by TMDLs in the rivers. The Commerce MSF site option is in a developed area with an established stormwater and drainage system. It is already primarily covered with impervious surfaces and no change in impervious surface area would occur; thus, no change in the amount of runoff from precipitation would occur. Thus, operation of the Commerce MSF site 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.

7.1.4.1.2 Montebello MSF

The proposed Montebello MSF site 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 that have the potential to affect water quality, would conform with MRDC 11.5. Operation of the MSF site option 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 8.0**) would be implemented. Operation of the Montebello MSF site option would not affect TMDLs in the Rio Hondo or San Gabriel River as it would not generate pollutants covered by TMDLs in the rivers. The Montebello MSF site option is already primarily covered with impervious surfaces and no change in impervious surface area would occur; thus, no change in the amount of runoff from precipitation would occur. Thus, operation of the Montebello MSF site 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.

Design Options

Montebello MSF At-Grade Option

Operation of the Montebello MSF At-Grade Option would have similar impacts associated with the Montebello MSF site option. No increase in impervious surfaces would occur as the location is already

primarily covered with impervious surfaces; thus, no change in the amount of runoff from precipitation would occur. Operation of the at-grade option would comply with MRDC 11.5, LARWQCB's MS4 permit, and the Industrial General Permit. BMPs required by these permits and set forth in PM HWQ-1 (discussed in **Section 8.0**) would be implemented. Thus, operation of 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; impacts would be less than significant.

7.1.4.2 Construction Impacts

7.1.4.2.1 Commerce MSF

Water quality impacts could potentially result from construction of the Commerce MSF site 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 Commerce MSF site option 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 8.0**.

There is the potential to encounter, dewater, and dispose of groundwater during construction of the Commerce MSF site option. If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 7.1.1.2** and discussed in **Section 9.1.4**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

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). Implementation of MM HAZ-3, summarized in **Section 7.1.1.2** and discussed in **Section 9.1.4**, would minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

See **Section 9.1.4** for the proposed mitigation and impacts after incorporation of mitigation. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report.

7.1.4.2.2 Montebello MSF

Water quality impacts could potentially result from construction of the Montebello MSF site 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 Montebello MSF site option 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 8.0**.

There is the potential to encounter, dewater, and dispose of groundwater during construction of the Montebello MSF site option. If groundwater needs to be dewatered, a significant impact would occur if

the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 7.1.1.2** and discussed in **Section 9.1.4**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

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). Implementation of MM HAZ-3, summarized in **Section 7.1.1.2** and discussed in **Section 9.1.4**, would minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

See **Section 9.1.4** for the proposed mitigation and impacts after incorporation of mitigation. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report.

Design Options

Montebello MSF At-Grade Option

Construction of the Montebello MSF At-Grade Option would have similar impacts associated with the Montebello MSF site option as an aerial crossing at this site option. Water quality impacts could potentially result from construction activities that disturb the ground, such as excavation and grading, which have the potential to increase erosion and sedimentation around proposed construction areas. Construction of the Montebello MSF At-Grade Option 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 8.0**.

There is the potential to encounter, dewater, and dispose of groundwater during construction of the Montebello MSF At-Grade Option. If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 7.1.1.2** and discussed in **Section 9.1.4**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

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). Implementation of MM HAZ-3, summarized in **Section 7.1.1.2** and discussed in **Section 9.1.4**, would minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

See **Section 9.1.4** for the proposed mitigation and impacts after incorporation of mitigation. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report.

7.2 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?

7.2.1 Alternative 1 Washington

7.2.1.1 Operational Impacts

As discussed in greater detail in **Section 7.2.1.2**, 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. Potential impacts associated with this minor increase are addressed in **Section 7.2.1.2**. 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 6.4**. Potential operational impacts on groundwater quality are discussed in **Section 7.1.1.1**. 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

Operation of Alternative 1 with the Atlantic/Pomona Station Option would have similar effects on groundwater supplies and recharge as operation of the base Alternative 1. The Atlantic/Pomona station and underground alignment would be above the groundwater table and would not affect groundwater movement or infiltration. Operation of Alternative 1 with the Atlantic/Pomona Station Option would not affect the Rio Hondo and spreading grounds and the San Gabriel River differently than under the base Alternative 1. There may 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

Operation of Alternative 1 with the Montebello At-Grade Option would have similar effects on groundwater supplies and recharge as operation of 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 impervious surface that would be constructed as compared to an aerial alignment at this location and no significant impacts on groundwater recharge would occur. As with an aerial-grade alignment at this location, there may 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. 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.

7.2.1.2 Construction Impacts

There could be potential impacts on groundwater supplies and recharge under Alternative 1 from dewatering activities, which 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 (**Section 6.7**), 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. Based on LACDPW data (LACDPW 2019) the groundwater wells in the vicinity of the underground alignment are approximately 120 to 180 feet bgs. Furthermore, based on information reported to LARWQCB, the depth to the first layer of groundwater encountered from the ground surface in the vicinity of the underground guideway ranged between approximately 100 to 130 feet bgs in 2005 (LARWQCB 2005). The tunnel would 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. Potential construction impacts on groundwater quality are discussed in **Section 7.1.1.2**.

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. The Rio Hondo is channelized with a concrete bottom and side walls in the DSA and therefore does not facilitate groundwater replenishment. 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. Construction of replacement bridge piers in the Rio Hondo Spreading Grounds and San Gabriel River would require ongoing communication with the county at later stages of Project design. Final design would also determine the potential impact on groundwater recharge from construction of new bridge piers. Thus, 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 9.2.1**, 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, as discussed in **Section 3.4.1.5**, a construction permit from the county would be necessary. The construction permit would dictate approaches for minimizing construction-related impacts, such as soil compaction and erosion, on the spreading basins. BMPs required by this permit are also set forth in PM HWQ-2, discussed in **Section 8.0.** 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.

See **Section 9.2.1** for the proposed mitigation and impacts after incorporation of mitigation.

Design Options

Atlantic/Pomona Station Option

Construction of Alternative 1 with the Atlantic/Pomona Station Option would have similar effects on groundwater supplies and recharge as construction of the base Alternative 1. 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 spreading grounds or the San Gabriel River where most of the groundwater replenishment occurs.

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. Potential construction impacts on groundwater quality are discussed in **Section 7.1.1.2**.

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. The new bridge piers could reduce recharge capacity if they are slightly larger than the existing bridge piers. Thus, construction of Alternative 1 with the Atlantic/Pomona Station Option 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, as summarized above and discussed in **Section 9.2.1**, 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 Los Angeles County would be necessary and the permit 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, discussed in **Section 8.0**. 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.

See **Section 9.2.1** for the proposed mitigation and impacts after incorporation of mitigation.

Montebello At-Grade Option

Construction of Alternative 1 with the Montebello At-Grade Option would include a longer at-grade segment in the city of Montebello and a shorter aerial segment. The construction of the Montebello At-Grade Option would be similar to the construction of an aerial alignment at this location, although the shorter aerial alignment would reduce the amount of new impervious 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. Potential construction impacts on groundwater quality are discussed in **Section 7.1.1.2**.

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 with the base Alternative 1, the replacement bridge piers in the Rio Hondo Spreading Grounds and the San Gabriel River might reduce recharge capacity if they are slightly larger than the existing bridge piers. Thus, construction of Alternative 1 with the Montebello At-Grade Option 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, as summarized above and discussed in **Section 9.2.1**, 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. As the spreading grounds are owned and operated by LACDPW, as discussed in **Section 3.4.1.5**, a construction permit from the county would be necessary. The construction permit would dictate approaches for minimizing construction-related impacts, such as soil compaction and erosion, on the spreading basins. BMPs required by this permit are also set forth in PM HWQ-2, discussed in **Section 8.0**. 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.

See **Section 9.2.1** for the proposed mitigation and impacts after incorporation of mitigation.

7.2.2 Alternative 2 Atlantic to Commerce/Citadel IOS

7.2.2.1 Operational Impacts

Alternative 2 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 Alternative 2 would not impact groundwater supplies or recharge. Potential impacts on groundwater quality from operation of Alternative 2 are discussed in **Section 7.1.2.1**.

Design Option

Atlantic/Pomona Station Option

Operation of Alternative 2 with the Atlantic/Pomona Station Option would have similar effects on groundwater supplies and recharge as operation of the base Alternative 2. The Atlantic/Pomona station and underground alignment would be above the groundwater table and would not affect groundwater movement or infiltration. Alternative 2 with the Atlantic/Pomona Station Option would not cross the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River. Potential impacts on groundwater quality are discussed in **Section 7.1.2.1**. Thus, operation of Alternative 2 with the Atlantic/Pomona Station Option would not impact groundwater supplies or recharge.

7.2.2.2 Construction Impacts

Under Alternative 2, 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, under Alternative 2, no construction would occur in the Rio Hondo Spreading Grounds or the San Gabriel River where most of the groundwater replenishment occurs.

There could be potential impacts on groundwater supplies and recharge under Alternative 2 from dewatering activities related to the construction of the underground guideway and stations. 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 underground guideway (See **Section 6.7**); and thus, dewatering would not be expected to affect groundwater wells. Additionally, groundwater depths, and therefore well depths, are relatively deep near the underground alignment, which would reduce the likelihood that groundwater would be encountered during construction of the tunnel. Based on LACDPW data (LACDPW 2019) and information reported to LARWQCB (LARWQCB 2005), the groundwater wells in the vicinity of the underground alignment are approximately 100 to 180 feet bgs, while the tunnel would be up to 60 feet deep. 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. Potential impacts on groundwater quality from construction of Alternative 2 are discussed in **Section 7.1.2.2**.

Thus, construction of Alternative 2 would have less than significant impacts on groundwater recharge and groundwater supplies.

Design Option

Atlantic/Pomona Station Option

Construction of Alternative 2 with the Atlantic/Pomona Station Option would have similar effects on groundwater supplies and recharge as construction of the base Alternative 2. 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.

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 2, 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. Potential impacts on groundwater quality from construction of Alternative 2 are discussed in **Section 7.1.2.2**.

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

7.2.3 Alternative 3 Atlantic to Greenwood IOS

7.2.3.1 Operational Impacts

Alternative 3 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 be above the groundwater table. Potential impacts on groundwater quality from operation of Alternative 3 are discussed in **Section 7.1.3.1**. Thus, operation of Alternative 3 would not impact groundwater supplies or recharge.

Design Options

Atlantic/Pomona Station Option

Operation of Alternative 3 with the Atlantic/Pomona Station Option would have similar effects on groundwater supplies and recharge as operation of the base Alternative 3. The Atlantic/Pomona station and underground alignment would be above the groundwater table and would not affect groundwater movement or infiltration. Alternative 3 with the Atlantic/Pomona Station Option would not cross the Rio Hondo, spreading grounds, or the San Gabriel River. Thus, operation of Alternative 3 with the Atlantic/Pomona Station Option would not impact groundwater supplies or recharge.

Montebello At-Grade Option

The operation of Alternative 3 with the Montebello At-Grade Option would have similar effects on groundwater supplies and recharge as operation of the base Alternative 3. 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 impervious surface as compared to an aerial alignment at this location and no significant impacts on groundwater recharge would occur. Alternative 3 with the Montebello At-Grade Option would not cross the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River and would have no operational impacts on groundwater supplies or recharge capacity. Thus, operation of Alternative 3 with the Montebello At-Grade Option would not impact groundwater supplies or recharge.

7.2.3.2 Construction Impacts

Under Alternative 3, 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, under Alternative 3, no construction would occur in the Rio Hondo Spreading Grounds or San Gabriel River where most of the groundwater recharge occurs.

There could be potential impacts on groundwater supplies and recharge under Alternative 3 from dewatering activities related to the construction of the underground guideway and stations. 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 underground guideway (See **Section 6.7**); and thus, dewatering would not be expected to affect groundwater wells. Additionally, groundwater depths, and therefore well depths, are relatively deep near the underground alignment, which would reduce the likelihood that groundwater would be encountered during construction of the tunnel. Based on LACDPW data (LACDPW 2019) and information reported to LARWQCB (LARWQCB 2005), the groundwater wells in the vicinity of the underground alignment are approximately 100 to 180 feet bgs, while the tunnel would be up to 60 feet deep. 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. Potential construction impacts on groundwater quality from Alternative 3 are discussed in **Section 7.1.3.2**.

Thus, construction of Alternative 3 would have less than significant impacts on groundwater recharge and groundwater supplies.

Design Options

Atlantic/Pomona Station Option

Construction of Alternative 3 with the Atlantic/Pomona Station Option would have similar effects on groundwater supplies and recharge as construction of the base Alternative 3. 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.

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 2, 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. Potential impacts on groundwater quality are discussed in **Section 7.1.3.2**.

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

Montebello At-Grade Option

Construction of Alternative 3 with the Montebello At-Grade Option would have similar impacts related to construction of an aerial alignment at this location, although the shorter aerial alignment would reduce the amount of new impervious surface that would be constructed as compared to an aerial alignment at this location. The construction of the Montebello At-Grade Option would not affect groundwater recharge or supplies as it would not occur in the Rio Hondo Spreading Grounds or San Gabriel River or require deep excavation. Construction activities would be temporary and would not significantly impact the recharge capabilities of the watershed as there would be a minimal increase in area of impervious surface compared to the existing condition. Furthermore, no construction would occur in the spreading grounds where most of the groundwater replenishment occurs.

There could be potential impacts on groundwater supplies and recharge under Alternative 3 with the Montebello At-Grade Option from dewatering activities. 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 3. 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. Potential construction impacts on groundwater quality are discussed in **Section 7.1.3.2**.

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

7.2.4 Maintenance and Storage Facilities

7.2.4.1 Operational Impacts

7.2.4.1.1 Commerce MSF

The Commerce MSF site option is currently impervious. 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, operation of the Commerce MSF site option would have no impacts on groundwater supplies or recharge capacity.

7.2.4.1.2 Montebello MSF

The Montebello MSF site option is currently impervious. 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, operation of the Montebello MSF site option would have no impacts on groundwater supplies or recharge capacity.

Design Option

Montebello MSF At-Grade Option

The Montebello MSF At-Grade Option 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, operation of the Montebello MSF At-Grade Option would have no impacts on groundwater supplies or recharge capacity.

7.2.4.2 Construction Impacts

7.2.4.2.1 Commerce MSF

Construction of the Commerce MSF site 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 of the Commerce MSF site option would have no impact on groundwater recharge or supplies.

7.2.4.2.2 Montebello MSF

Construction of the Montebello MSF site 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 of the Montebello MSF site option would have no impact on groundwater recharge or supplies.

Design Option

Montebello MSF At-Grade Option

The construction of the Montebello MSF At-Grade Option would be the same as the construction of an aerial alignment at this location. Construction of the Montebello MSF At-Grade Option, specifically the connection between the alignment and MSF site option (MSF lead tracks), 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, the Montebello MSF At-Grade Option would have no impact on groundwater recharge or supplies.

7.3 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?**

7.3.1 Alternative 1 Washington

7.3.1.1 Operational Impacts

Operation of Alternative 1 would not result in substantial erosion or siltation or substantially alter the course of any streams or rivers. However, the replacement of bridge piers in the Rio Hondo Spreading Grounds and San Gabriel River would result in a minimal increase in impervious surface. Impacts associated with this potential increase are addressed in **Section 7.3.1.2**. Operational activities are not expected to 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 8.0**). 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. 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 offsite 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 of Alternative 1 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. 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 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 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 as described in **Section 6.6.1**. 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

Erosion and Siltation

Operation of Alternative 1 with the Atlantic/Pomona Station Option would have the same impacts on erosion and siltation as the base Alternative 1. Operation 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 8.0**). 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.

Surface Runoff

Operation of Alternative 1 with the Atlantic/Pomona Station Option would have the same impacts on surface runoff as the base Alternative 1. Operation 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. 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 offsite and impacts would be less than significant.

Stormwater Drainage

Operation of Alternative 1 with the Atlantic/Pomona Station Option would have the same impacts on stormwater drainage as the base Alternative 1. Operational activities 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. 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.

Flood Flows

Operation of Alternative 1 with the Atlantic/Pomona Station Option would have the same impacts on flood flows as the base Alternative 1. Although the Atlantic/Pomona Station Option would not be within floodplain areas, small portions of Alternative 1 would still be operated in or near 100-year and 500-year floodplain areas, as described in **Section 6.6.1**. As with the base Alternative 1, the potential slight increase in the size of the bridge piers in these areas 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. 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

Erosion and Siltation

Implementation of the Montebello At-Grade Option would be similar to an aerial alignment at this location. Operation 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 8.0**). 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.

Surface Runoff

Implementation of the Montebello At-Grade Option would be similar to an aerial alignment at this location. Operation 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. 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 offsite and impacts would be less than significant.

Stormwater Drainage

Implementation of the Montebello At-Grade Option would be similar to an aerial alignment at this location. Operational activities 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. 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.

Flood Flows

Implementation of the Montebello At-Grade Option would be similar to an aerial alignment at this location. Although the Atlantic/Pomona Station Option would not be within floodplain areas, small portions of Alternative 1 would still be operated in or near 100-year and 500-year floodplain areas, as described in **Section 6.6.1**. As with the base Alternative 1, the potential slight increase in the size of the bridge piers in these areas 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. 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.

7.3.1.2 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 and spreading grounds and in the San Gabriel River would require a Section 1602 Lake and Streambed Alteration Agreement with CDFW. Section 1602 is discussed in **Section 3.2.2**.

Erosion and Siltation

As explained in **Section 7.1.1.2**, construction of Alternative 1 could increase erosion and sedimentation around proposed construction and staging areas. 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. To reduce potential impacts related to erosion and siltation, a SWPPP would be prepared in compliance with SWRCB's Construction General Permit. Additionally, LARWQCB's MS4 permit requires 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 8.0**). 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.

As required by PM HWQ-3 (**Section 8.0**), construction work would occur in the dry season when there is no water in the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River at the construction location 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, construction of Alternative 1 could cause substantial erosion and siltation and impacts would be significant. Implementation of MM HWQ-1, as summarized in **Section 7.1.1.2** and discussed in **Section 9.3.1**, would reduce the potential for construction to cause erosion and siltation in water, and would thus reduce impacts to less than significant. See **Section 9.3.1** for the proposed mitigation and impacts after incorporation of mitigation.

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 of Alternative 1. 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.

Replacing 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 width and/or number of piers would be greater than the existing piers. This would be determined during the final design of the bridge. The proposed Rio Hondo bridge span would be wider than the existing bridge to accommodate the light rail guideway. Based on the conceptual bridge design, the replacement Rio Hondo bridge would increase the area of impervious surface by approximately 7,900 square feet as compared to the existing bridge. This potential increase in impervious surface would only affect infiltration of rainwater that falls directly on the bridge because the amount of pervious surface below the bridge would not change and would still allow for infiltration of runoff. As described in **Section 7.2.1.2**, 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 offsite and impacts would be less than significant.

Stormwater Drainage

As described in **Section 6.5**, there is extensive engineered stormwater drainage infrastructure in the DSA of Alternative 1. Surface runoff in the watershed is carried through municipal infrastructure to the Rio Hondo and San Gabriel River, spreading grounds, 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, 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. Additionally, permits from other relevant agencies would need to be obtained (LACDPW Building and Safety [no date]). 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. Where the alignment transitions 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 not impact the direction, flow, or capacity of the stormwater drainage system, in compliance with MRDC 3.3.2 and 3.8 and LACDPW requirements. 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.

As shown on **Figure 6.5**, 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 existing bridge over the Rio Hondo would be demolished and replaced with a new wider bridge that carries both the LRT facility and the roadway. The proposed replacement bridge would include one column in the Rio Hondo and one column in the spreading grounds. The bridge that currently crosses the San Gabriel River is a newer bridge, but it does not have the capacity to accommodate the load of the LRT train. Therefore, the current bridge would have to be removed and a new structure to carry both the LRT facility and four-lane roadway would be constructed. This new 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 supports 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 (**Section 3.1.1** and **Section 3.1.2**), 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. 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 9.3.1**, 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. Construction of Alternative 1 with the Atlantic/Pomona Station Option would not substantially alter the course of any streams or rivers. However, as with the

base Alternative 1, replacement of bridge piers in the Rio Hondo and spreading grounds and in the San Gabriel River would require a Section 1602 Lake and Streambed Alteration Agreement with CDFW. Section 1602 is discussed in **Section 3.2.2**.

Erosion and Siltation

Construction of Alternative 1 with the Atlantic/Pomona Station Option would have the same impacts on erosion and siltation as the base Alternative 1. Construction of Alternative 1 with the Atlantic/Pomona Station Option could increase erosion and sedimentation around proposed construction and staging areas particularly within the Rio Hondo Spreading Grounds and San Gabriel River. 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 8.0**). 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.

As set forth in PM HWQ-3 (**Section 8.0**), construction work would occur in the dry season when there is no water in the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River at the construction location, 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, construction of Alternative 1 with the Atlantic/Pomona Station Option could cause substantial erosion and siltation and impacts would be significant. Implementation of MM HWQ-1, as summarized in **Section 7.1.1.2** and discussed in **Section 9.3.1**, would reduce the potential for construction to cause erosion and siltation in water, and would thus reduce impacts to less than significant. See **Section 9.3.1** for the proposed mitigation and impacts after incorporation of mitigation.

Surface Runoff

Construction of Alternative 1 with the Atlantic/Pomona Station Option would have the same impacts on surface runoff as the base Alternative 1. 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 of Alternative 1. As described in **Section 7.2.1.2**, a construction permit 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 offsite and impacts would be less than significant.

Stormwater Drainage

Construction of Alternative 1 with the Atlantic/Pomona Station Option would have the same impacts on surface runoff as the base Alternative 1. Construction activities 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. 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 8.0**. 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

Construction of Alternative 1 with the Atlantic/Pomona Station Option would have the same impacts on flood flows as the base Alternative 1. 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.

As shown in **Figure 6.5**, 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). As with the base Alternative 1, the replacement of bridge piers would require CWA Section 404 and RHA Section 408 Permits from USACE (**Section 3.1.1** and **Section 3.1.2**) and would comply with local floodplain ordinances. However, construction of Alternative 1 with the Atlantic/Pomona Station Option, 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 9.3.1**, would reduce impacts on flood flows 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. Construction of Alternative 1 with the Montebello At-Grade Option would not substantially alter the course of any streams or rivers. However, replacement of bridge piers in the Rio Hondo and spreading grounds and in the San Gabriel River would require a Section 1602 Lake and Streambed Alteration Agreement with CDFW. Section 1602 is discussed in **Section 3.2.2**.

Erosion and Siltation

If the Montebello At-Grade Option is selected, impacts would be similar to an aerial crossing at this location. Construction of Alternative 1 with the Montebello At-Grade Option could increase erosion and sedimentation around proposed construction and staging areas. Particularly, the Rio Hondo Spreading Grounds and San Gabriel River have soft, dirt bottoms with more potential for erosion and sedimentation. To reduce potential impacts related to erosion and siltation from construction of Alternative 1, a SWPPP would be prepared in compliance with SWRCB's Construction General Permit. Additionally, LARWQCB's MS4 permit requires 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 8.0**). 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.

As set forth in PM HWQ-3 (**Section 8.0**), construction work would occur in the dry season when there is no water in the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River at the construction location, 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, construction could cause substantial erosion and siltation and impacts would be significant. Implementation of MM HWQ-1, as summarized in **Section 7.1.1.2** and discussed in **Section 9.3.1**, would reduce the potential for construction to cause erosion and siltation in water, and would thus reduce impacts to less than

significant. See **Section 9.3.1** for the proposed mitigation and impacts after incorporation of mitigation.

Surface Runoff

As with the base Alternative 1, construction of Alternative 1 with the Montebello At-Grade Option would add a minimal amount of impervious surface to the watershed as the majority of the DSA of Alternative 1 is currently developed with urban land uses. Under construction 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 Replacing bridge piers in the Rio Hondo Spreading Grounds and San Gabriel River may add a minimal amount of impervious surface to these areas. Based on the conceptual bridge design, the replacement Rio Hondo bridge would increase the area of impervious surface by approximately 7,900 square feet as compared to the existing bridge. This increase in impervious surface would only affect infiltration of rain water that falls directly on the bridge as the amount of pervious surface below the bridge would not change and would still allow infiltration of runoff. Additionally, minimal areas of pervious surface, such as landscaped medians along the alignment, may be replaced by impervious surface. As described in **Section 7.2.1.2**, 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. Construction activities would be temporary and would avoid these drainage structures along most of Alternative 1, 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 8.0**. 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.

As shown in **Figure 6.5**, 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). As with the base Alternative 1, the replacement of bridge piers would require CWA Section 404 and RHA Section 408 Permits from USACE (**Section 3.1.1** and **Section 3.1.2**) and would comply with local floodplain ordinances. However, construction of Alternative 1 with the Montebello At-Grade Option, 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 9.3.1**, would reduce impacts on flood flows to less than significant.

7.3.2 Alternative 2 Atlantic to Commerce/Citadel IOS

7.3.2.1 Operational Impacts

Erosion and Siltation

Ground-disturbing activities have the potential to generate erosion and siltation. Operation of Alternative 2 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 8.0**). Therefore, operation of Alternative 2 would not result in substantial erosion on- or off-site and impacts would be less than significant.

Surface Runoff

Under operation of Alternative 2, 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 Alternative 2 would comply with post-construction measures in applicable NPDES permits, LID standards required Los Angeles County, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1. Therefore, operation of Alternative 2 would not substantially change 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

Under operation of Alternative 2, 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 Alternative 2 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. 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 2 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

Alternative 2 is entirely within an area of minimal flood risk (FEMA-defined flood zone X). Thus, operation of Alternative 2 would not impede or redirect flood flows and no impacts would occur.

Design Option

Atlantic/Pomona Station Option

Erosion and Siltation

Operation of Alternative 2 with the Atlantic/Pomona Station Option would have the same impacts on erosion and siltation as the base Alternative 2. Operation would not result in ground disturbance and there would be no change in erosion or siltation. Additionally, operational activities 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 8.0**). Therefore, operation of 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

Operation of Alternative 2 with the Atlantic/Pomona Station Option would have the same impacts on surface runoff as the base Alternative 2. Operation would comply with post-construction measures in applicable NPDES permits, LID standards required Los Angeles County, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1. Therefore, operation of 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 offsite and impacts would be less than significant.

Stormwater Drainage

Operation of Alternative 2 with the Atlantic/Pomona Station Option would have the same impacts on stormwater drainage as the base Alternative 2. Operation 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. 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 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

Operation of Alternative 2 with the Atlantic/Pomona Station Option would have the same impacts on flood flows as the base Alternative 2. Alternative 2 with the Atlantic/Pomona Station Option is entirely within an area of minimal flood risk (FEMA-defined flood zone X) and would therefore not impede or redirect flood flows; no impacts would occur.

7.3.2.2 Construction Impacts

Construction of Alternative 2 would not cross the Rio Hondo and spreading grounds, or the San Gabriel River, and would therefore not alter the course of any streams or river or require a Section 1602 Lake and Streambed Alteration Agreement with CDFW.

Erosion and Siltation

Ground-disturbing activities have the potential to generate erosion and siltation. As explained in **Section 7.1.1.2**, construction of Alternative 2 could increase erosion and sedimentation around proposed construction and staging areas. To reduce potential impacts related to erosion and siltation, a SWPPP would be prepared in compliance with SWRCB's Construction General Permit. Additionally, LARWQCB's MS4 permit requires an erosion and sediment control plan. 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 8.0.** Additionally, 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 Alternative 2 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 of Alternative 2 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 Alternative 2 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

As described in **Section 6.5**, there is an extensive engineered stormwater drainage infrastructure in the DSA of Alternative 2. Surface runoff in the watershed is carried through municipal infrastructure to the Rio Hondo and San Gabriel River, spreading grounds and ultimately to the Pacific Ocean. Concrete drainages were observed during field visits along major roadways in the DSA. Construction activities 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 and San Gabriel River and spreading grounds. 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.

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 are in compliance with applicable codes, such as LID requirements. Additionally, permits from other relevant agencies would need to be obtained (LACDPW Building and Safety [no date]). The contractor would be responsible for preparing the drainage and grading plans and obtaining approval of the plans prior to the start of construction. Applicable BMPs that may be included in the drainage plan are described in **Section 7.3.1.2**.

Thus, construction of Alternative 2 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

Alternative 2 is entirely within an area of minimal flood risk (FEMA-defined flood zone X). Thus, construction of Alternative 2 would not impede or redirect flood flows and no impacts would occur.

Design Option

Atlantic/Pomona Station Option

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

Erosion and Siltation

Construction of Alternative 2 with the Atlantic/Pomona Station Option would have the same impacts on erosion and siltation as the base Alternative 2. Construction could increase erosion and sedimentation around proposed construction and staging areas. 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 8.0**). As discussed in **Section 7.3.2.2**, the topography of the DSA of Alternative 2 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. Therefore, construction of 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

Construction of Alternative 2 with the Atlantic/Pomona Station Option would have the same impacts on surface runoff as the base Alternative 2. There would not be an increase in impervious surfaces as the majority of the DSA of Alternative 2 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 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 offsite and impacts would be less than significant.

Stormwater Drainage

Construction of Alternative 2 with the Atlantic/Pomona Station Option would have the same impacts on stormwater drainage as the base Alternative 2. Construction activities 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 and San Gabriel River and spreading grounds. 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. Thus, construction of 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

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

7.3.3 Alternative 3 Atlantic to Greenwood IOS

7.3.3.1 Operational Impacts

Erosion and Siltation

Ground-disturbing activities have the potential to generate erosion and siltation. Operation of Alternative 3 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 8.0**). Therefore, operation of Alternative 3 would not result in substantial erosion on- or off-site and impacts would be less than significant.

Surface Runoff

Under operation of Alternative 3, 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. Operation of Alternative 3 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. Therefore, operation of Alternative 3 would not substantially change 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

Under operation of Alternative 3, there would be a minimal increase in impervious surface. This could affect stormwater drainage within the DSA of Alternative 3 by reducing the area that allows for infiltration and concentrating pollutants, which can be transferred into nearby waterbodies via stormwater runoff. Operation of Alternative 3 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. 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 project 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

Alternative 3 is entirely within an area of minimal flood risk (FEMA-defined flood zone X). Thus, operation of Alternative 3 would not impede or redirect flood flows and no impacts would occur.

Design Option

Atlantic/Pomona Station Option

Erosion and Siltation

Operation of Alternative 3 with the Atlantic/Pomona Station Option would have the same impacts on erosion and siltation as the base Alternative 3. Operation would not result in ground disturbance and there would be no change in erosion or siltation. Additionally, operational activities 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 8.0**). Therefore, operation of Alternative 3 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

Operation of Alternative 3 with the Atlantic/Pomona Station Option would have the same impacts on surface runoff as the base Alternative 3. Operation would comply with post-construction measures in applicable NPDES permits, LID standards required Los Angeles County, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1. Therefore, operation of Alternative 3 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 offsite and impacts would be less than significant.

Stormwater Drainage

Operation of Alternative 3 with the Atlantic/Pomona Station Option would have the same impacts on stormwater drainage as the base Alternative 3. Operation 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. 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 3 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

Operation of Alternative 3 with the Atlantic/Pomona Station Option would have the same impacts on flood flows as the base Alternative 3. Alternative 3 with the Atlantic/Pomona Station Option is entirely

within an area of minimal flood risk (FEMA-defined flood zone X) and would therefore not impede or redirect flood flows; no impacts would occur.

Montebello At-Grade Option

Erosion and Siltation

Implementation of the Montebello At-Grade Option would be similar to an aerial alignment at this location. Operation 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 8.0**). Therefore, operation of Alternative 3 with the Montebello At-Grade Option would not result in substantial erosion on- or off-site and impacts would be less than significant.

Surface Runoff

Implementation of the Montebello At-Grade Option would be similar to an aerial alignment at this location. Operation 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. Therefore, operation of Alternative 3 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 offsite and impacts would be less than significant.

Stormwater Drainage

Implementation of the Montebello At-Grade Option would be similar to an aerial alignment at this location. Operational activities 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. 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 3 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.

Flood Flows

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

7.3.3.2 Construction Impacts

Construction of Alternative 3 would not cross the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River, and would therefore not alter the course of any streams or river or require a Section 1602 Lake and Streambed Alteration Agreement with CDFW.

Erosion and Siltation

As explained in **Section 7.1.1.2**, construction of Alternative 3 could increase erosion and sedimentation around proposed construction and staging areas. To reduce potential impacts related to erosion and siltation, a SWPPP would be prepared in compliance with SWRCB's Construction General Permit. Additionally, LARWQCB's MS4 permit requires an erosion and sediment control plan. 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 8.0**. Additionally, the topography of the DSA of Alternative 3 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 Alternative 3 would not result in substantial erosion on- or off-site and impacts would be less than significant.

Surface Runoff

Under construction of Alternative 3, 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 of Alternative 3 is currently developed with urban land uses 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 Alternative 3 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

As described in **Section 6.5**, there is extensive engineered stormwater drainage infrastructure in the DSA of Alternative 3. Surface runoff in the watershed is carried through municipal infrastructure to the Rio Hondo and San Gabriel River, spreading grounds, and ultimately to the Pacific Ocean. Concrete drainages were observed during field visits along major roadways in the DSA. 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 and San Gabriel River and spreading grounds. 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.

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 are in compliance with applicable codes, such as LID requirements. Additionally, permits from other relevant agencies would need to be obtained (LACDPW Building and Safety [no date]). 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**.**

Thus, construction of Alternative 3 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

Alternative 3 is entirely within an area of minimal flood risk (FEMA-defined flood zone X). Thus, construction of Alternative 3 would not impede or redirect flood flows and no impacts would occur.

Design Option

Atlantic/Pomona Station Option

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

Erosion and Siltation

Construction of Alternative 3 with the Atlantic/Pomona Station Option would have the same impacts on erosion and siltation as the base Alternative 3. Construction could increase erosion and sedimentation around proposed construction and staging areas. 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 8.0.** As discussed in **Section 7.3.3.2**, the topography of the DSA of Alternative 3 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. Therefore, construction of Alternative 3 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 Alternative 3 with the Atlantic/Pomona Station 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. 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 Alternative 3 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 offsite and impacts would be less than significant.

Stormwater Drainage

Construction of Alternative 3 with the Atlantic/Pomona Station Option would have the same impacts on stormwater drainage as the base Alternative 3. Construction activities 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 and San Gabriel River and spreading grounds. 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 set forth in by PM HWQ-2.Thus, construction of Alternative 3 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

Construction of Alternative 3 with the Atlantic/Pomona Station Option would have the same impacts on flood flows as the base Alternative 3. Alternative 3 with the Atlantic/Pomona Station Option is entirely within an area of minimal flood risk (FEMA-defined flood zone X). Thus, construction of Alternative 3 with the Atlantic/Pomona Station Option would not impede or redirect flood flows and no impacts would occur.

Montebello At-Grade Option

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

Erosion and Siltation

If the Montebello At-Grade Option is selected, impacts would be similar to an aerial alignment at this location. Construction of Alternative 3 with the Montebello At-Grade Option could increase erosion and sedimentation around proposed construction and staging areas. To reduce potential impacts related to erosion and siltation from construction of Alternative 3, a SWPPP would be prepared in compliance with SWRCB's Construction General Permit. Additionally, LARWQCB's MS4 permit requires an erosion and sediment control plan. 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 8.0.** Additionally, the topography of the DSA of Alternative 3 is relatively flat, which would minimize the risk of erosion and siltation impacts from construction. At the close of construction, areas of exposed soil that were previously paved would be restored to a paved condition. Therefore, construction of Alternative 3 with 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 Alternative 3 with 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. Since the DSA of Alternative 3 is located on already impervious land, it would not substantially increase the volume or peaks of runoff entering the storm drain system. No work would occur in the Rio Hondo, Rio Hondo Spreading Grounds, or San Gabriel River. Therefore, construction of Alternative 3 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 the option would be widened and drainages may be affected at this location. Additionally, drainages would be affected along the remainder of Alternative 3 where road widening occurs. Construction activities 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. 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. Thus, construction of Alternative 3 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

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

7.3.4 Maintenance and Storage Facilities

7.3.4.1 Operational Impacts

7.3.4.1.1 Commerce MSF

Erosion and Siltation

Ground-disturbing activities have the potential to generate erosion and siltation. Operation of the Commerce MSF site option would not result in ground disturbance, so there would be no change in erosion or siltation. Operation of the Commerce MSF site option 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 mandated by PM HWQ-1 (**Section 8.0**). Thus, operation of the Commerce MSF site option 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, there would be a minimal increase in impervious surface, which could increase the rate or amount of stormwater runoff within the DSAs. Operation of the Commerce MSF site option 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. Thus, operation of the Commerce MSF site option 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, 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 Commerce MSF site option 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. 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 Commerce MSF site 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 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.

7.3.4.1.2 Montebello MSF

Erosion and Siltation

Ground-disturbing activities have the potential to generate erosion and siltation. Operation of the Montebello MSF site option would not result in ground disturbance, so there would be no change in erosion or siltation. Operation of the Montebello MSF site option 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. Thus, operation of the Montebello MSF site option would not result in substantial increases in erosion or siltation and impacts would be less than significant.

Surface Runoff

Under operation of the Montebello MSF site 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 the Montebello MSF site option 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. Thus, operation of the Montebello MSF site option 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 Montebello MSF site 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 Montebello MSF site option 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. 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 Montebello MSF site 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 proposed Montebello MSF site option is located in a FEMA-defined 100-year flood zone. As explained in **Section 6.6.2**, 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 as it is developed. Thus, operation of the Montebello MSF site option would not impede or redirect flood flows and no impacts would occur.

Design Option

Montebello MSF At-Grade Option

Erosion and Siltation

Ground-disturbing activities have the potential to generate erosion and siltation. Operation of the Montebello MSF At-Grade Option would not result in ground disturbance, so there would be no change in erosion or siltation. Operation of the proposed Montebello MSF At-Grade Option would comply with the SWRCB Construction General Permit post-construction measures, the Industrial General Permit, LID standards required by the county, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 8.0**). Thus, operation of the Montebello MSF At-Grade Option would not result in substantial increases in erosion or siltation and impacts would be less than significant.

Surface Runoff

Under operation of 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 the proposed Montebello MSF At-Grade Option would comply with the SWRCB Construction General Permit post-construction measures, the Industrial General Permit, LID standards required by the county, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1. Thus, operation of the Montebello MSF At-Grade Option 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 Montebello 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 proposed Montebello MSF At-Grade Option 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. 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 Montebello MSF 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 proposed Montebello MSF site option is located in a FEMA-defined 100-year flood zone and the Montebello MSF At-Grade Option may intersect with this flood zone. As explained in **Section 6.6.2**, 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 Montebello MSF site option does not contain any natural functions or values of a floodplain as it is developed. Thus, operation of the Montebello MSF At-Grade Option would not impede or redirect flood flows and no impacts would occur.

7.3.4.2 Construction Impacts

7.3.4.2.1 Commerce MSF

Construction of the Commerce MSF site option would not alter the course of any streams or river or require a Section 1602 Lake and Streambed Alteration Agreement with CDFW.

Erosion and Siltation

Construction of the Commerce MSF site option could increase erosion and sedimentation around construction areas, particularly during ground disturbing activities, such as excavation and grading. The proposed Commerce MSF site option is already primarily covered with impervious surfaces and is characterized by flat topography. Construction of the Commerce MSF site option 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 8.0.** Thus, construction of the Commerce MSF site option 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, there would be a minimal increase in the amount of impervious surface. Although the Commerce MSF site option is already primarily covered with impervious surfaces and is characterized by flat topography, a minimal amount of pervious surface, such as small, landscaped pockets within the MSF site option, may be converted to impervious surface. Construction of the Commerce MSF site option would comply with the SWRCB Construction General Permit, LID standards, and local policies protecting water quality. Thus,

construction of the Commerce MSF site option 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

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 set forth in PM HWQ-2. The Commerce MSF site option is already primarily covered with impervious surfaces. Additionally, construction of the Commerce MSF site option would comply with the SWRCB Construction General Permit, LID standards, and local policies protecting water quality. Thus, construction of the Commerce MSF site 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 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.

7.3.4.2.2 Montebello MSF

Construction of the Montebello MSF site option would not alter the course of any streams or river or require a Section 1602 Lake and Streambed Alteration Agreement with CDFW.

Erosion and Siltation

Construction of the Montebello MSF site option could increase erosion and sedimentation around construction areas, particularly during ground disturbing activities, such as excavation and grading. The Montebello MSF site option is already primarily covered with impervious surfaces and is characterized by flat topography. Construction of the Montebello MSF site option 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 8.0.** Thus, construction of the Montebello MSF site option would not result in substantial increases in erosion or siltation and impacts would be less than significant.

Surface Runoff

Under construction of the Montebello MSF site option, there would be a minimal increase in the amount of impervious surface. Although the Montebello MSF site option is already primarily covered with impervious surfaces, a minimal amount of pervious surface, such as small, landscaped pockets within the MSF site option, may be converted to impervious surface. Construction of the MSF site

option would comply with the SWRCB Construction General Permit, LID standards, and local policies protecting water quality. Thus, construction of the Montebello MSF site option 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

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. The Montebello MSF site option is already primarily covered with impervious surfaces. Additionally, construction of the MSF Option would comply with the SWRCB Construction General Permit, LID standards required by the county, and local policies protecting water quality. Thus, construction of the Montebello MSF site 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 proposed Montebello MSF site option is located in a FEMA-defined 100-year flood zone. As explained in **Section 6.6.2**, this location used to be 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 as it is developed. Thus, construction of the Montebello MSF site option would not impede or redirect flood flows and no impacts would occur.

Design Option

Montebello MSF At-Grade Option

Construction of the Montebello MSF At-Grade Option would not alter the course of any streams or river or require a Section 1602 Lake and Streambed Alteration Agreement with CDFW.

Erosion and Siltation

Construction of 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 Montebello MSF At-Grade Option would be in an area already primarily covered with impervious surfaces and characterized by flat topography. Construction of the Montebello MSF At-Grade Option would comply with the SWRCB Construction General Permit, LID standards required by the county, 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 8.0.** Thus, construction of the Montebello MSF At-Grade Option would not result in substantial increases in erosion or siltation and impacts would be less than significant.

Surface Runoff

Under construction of the Montebello MSF At-Grade Option, there would be a minimal increase in the amount of impervious surface. Although, the Montebello MSF At-Grade Option would be in an area already primarily covered with impervious surfaces and characterized by flat topography, a minimal amount of pervious surface, such as landscaped medians, may be converted to impervious surface. Construction of the Montebello MSF At-Grade Option would comply with the SWRCB Construction General Permit, LID standards required by the county, and local policies protecting water quality. Thus, construction of the Montebello MSF At-Grade Option 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

Construction activities could affect drainage infrastructure. However, construction activities would be temporary and would avoid these drainage structures. The Montebello MSF At-Grade Option would be in an area already primarily covered with impervious surfaces and characterized by flat topography. However, because this option is at-grade, the roadway within the option may be widened and drainages may be affected. 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. Additionally, construction of the Montebello MSF At-Grade Option would comply with the SWRCB Construction General Permit, LID standards required by the county, and local policies protecting water quality. Thus, construction of the Montebello MSF 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 Montebello MSF At-Grade Option may intersect with a FEMA-defined 100-year flood zone. The Montebello MSF site option is within the 100-year flood zone. As explained in **Section 6.6.2**, this location used to be 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 Montebello MSF At-Grade Option does not contain any natural functions or values of a floodplain as it is developed. Thus, construction of the Montebello MSF At-Grade Option would not impede or redirect flood flows and no impacts would occur.

7.4 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?

7.4.1 Alternative 1 Washington

7.4.1.1 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 in **Figure 6.5** and discussed in **Section 6.6**. 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 are inundated by flood waters, as mandated by OM HWQ-4, discussed in **Section 8.0**. 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, and 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 would also serve to minimize the risk of pollutant release during flood events. These measures are also set forth in PM HWQ-1 (**Section 8.0**). 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 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.

7.4.1.2 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 6.5**. Construction in the 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, such those listed above, 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 by PM HWQ-4 (**Section 8.0**). 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 6.5**. 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 (**Section 8.0**); 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 6.5**. 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 (**Section 8.0**). 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.

7.4.2 Alternative 2 Atlantic to Commerce/Citadel IOS

7.4.2.1 Operational Impacts

Alternative 2 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 Alternative 2 to release pollutants during inundation and no impacts would occur.

Design Option

Atlantic/Pomona Station Option

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 Alternative 2 with the Atlantic/Pomona Station Option to release pollutants during inundation and no impacts would occur.

7.4.2.2 Construction Impacts

Alternative 2 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 to release pollutants during inundation and no impacts would occur.

Design Option

Atlantic/Pomona Station Option

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 with the Atlantic/Pomona Station Option to release pollutants during inundation and no impacts would occur.

7.4.3 Alternative 3 Atlantic to Greenwood IOS

7.4.3.1 Operational Impacts

Alternative 3 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 Alternative 3 to release pollutants during inundation and no impacts would occur.

Design Options

Atlantic/Pomona Station Option

Alternative 3 with the Atlantic/Pomona Station Option 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 Alternative 3 with the Atlantic/Pomona Station Option to release pollutants during inundation and no impacts would occur.

Montebello At-Grade Option

If the Montebello At-Grade Option is selected for Alternative 3, the alignment and associated facilities (e.g., TPSS and parking facilities) would still be located outside of the limits of tsunami, seiche, and flood zones. Thus, there would be no potential for the operation of the Montebello At-Grade Option to release pollutants during inundation and no impacts would occur.

7.4.3.2 Construction Impacts

Alternative 3 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 to release pollutants during inundation and no impacts would occur.

Design Options

Atlantic/Pomona Station Option

Alternative 3 with 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 3 with the Atlantic/Pomona Station Option to release pollutants during inundation and no impacts would occur.

Montebello At-Grade Option

If the Montebello At-Grade Option is selected for Alternative 3, the alignment and associated facilities (e.g., TPSS and parking facilities) would still be located outside of the limits of tsunami, seiche, and flood zones. Thus, there would be no potential for the construction of Alternative 3 with the Montebello At-Grade Option to release pollutants during inundation and no impacts would occur.

7.4.4 Maintenance and Storage Facilities

7.4.4.1 Operational Impacts

7.4.4.1.1 Commerce MSF

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

7.4.4.1.2 Montebello MSF

The Montebello MSF site option is not within the limits of tsunami or seiche zones. As explained in **Section 6.6.2**, the proposed Montebello MSF site option was historically a rock quarry that collected stormwater and flooded. Although the area is still designated by FEMA as a 100-year flood zone, it has since been developed and no longer floods as stormwater is directed in the municipal stormwater management system. Thus, there would be no potential for the operation of the Montebello MSF site option to release pollutants during inundation and no impacts would occur.

Design Option

Montebello MSF At-Grade Option

The proposed Montebello MSF At-Grade Option is not within the limits of a tsunami or seiche zone; however, it may intersect with a FEMA-defined 100-year flood zone. As explained in **Section 6.6.2**, 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. Thus, there would be no potential for the Montebello MSF At-Grade Option to release pollutants during inundation and no impacts would occur.

7.4.4.2 Construction Impacts

7.4.4.2.1 Commerce MSF

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

7.4.4.2.2 Montebello MSF

The proposed Montebello MSF site option is not within the limits of tsunami or seiche zones but is within a FEMA-defined 100-year flood zone. As explained in **Section 6.6.2**, 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. Thus, there would be no potential for the construction of the Montebello MSF site option to release pollutants during inundation and no impacts would occur.

Design Option

Montebello MSF At-Grade Option

The proposed Montebello MSF At-Grade Option, including the connection between the alignment and MSF, is not within the limits of a tsunami or seiche zone. As explained in **Section 6.6.2**, the proposed Montebello MSF site option was historically a rock quarry that collected stormwater and flooded. Although the area is designated by FEMA as a 100-year flood zone, it has since been developed and no longer floods as stormwater is directed in the municipal stormwater management system. Thus, there would be no potential for the construction of the Montebello MSF At-Grade Option to release pollutants during inundation and no impacts would occur.

7.5 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?

7.5.1 Alternative 1 Washington

7.5.1.1 Operational Impacts

As described in **Section 6.4.1**, 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. As described in **Section 6.3.1**, the DSA of Alternative 1 includes the Rio Hondo Reach 2 and San Gabriel River Reach 2. The Basin Plan identifies potential and intermittent beneficial uses for Rio Hondo Reach 2 and San Gabriel River Reach 2, as well as existing beneficial uses for the San Gabriel River Reach 2 (**Section 6.3.1**). 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 8.0**). 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 LARWQCB 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.

Based on the above, 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 not change and would still include the Rio Hondo Reach 2 and San Gabriel River Reach 2 (**Section 6.3**). Operation of the Project would comply with NPDES permits, LID standards, and local policies protecting water quality. Post-construction BMPs are also set forth in PM HWQ-1 (**Section 8.0).** 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 LARWQCB 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. The Basin Plan identifies potential and intermittent beneficial uses for Rio Hondo Reach 2 and San Gabriel River Reach 2, as well as existing beneficial uses for the San Gabriel River Reach 2 (**Section 6.3**). Operation of the Project would comply with NPDES permits, LID standards, and local policies protecting water quality. Post-construction BMPs are also set forth in PM HWQ-1 (**Section 8.0**). 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 LARWQCB TMDL requirements. Therefore, operation would not contribute to degradation of beneficial uses or exceed TMDL requirements in the Rio Hondo or San Gabriel River.

Based on the above, 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.

7.5.1.2 Construction Impacts

As described in **Section 6.4.1**, 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.

As described in **Section 6.3**, the DSA of Alternative 1 includes the Rio Hondo Reach 2 and San Gabriel River Reach 2. The Basin Plan identifies potential and intermittent beneficial uses for Rio Hondo Reach 2 and San Gabriel River Reach 2, as well as existing beneficial uses for the San Gabriel River Reach 2. 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 of Alternative 1 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 8.0**). 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 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 water, which would be a significant impact. Implementation of MM HWQ-1, as summarized in **Section 7.1.1.2** and discussed in **Section 9.5.1**, would reduce the potential for construction to cause erosion and siltation in water and would thus reduce impacts to less than significant.

If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 7.1.1.2** and discussed in **Section 9.5.1**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

As discussed in **Section 6.3.2**, groundwater contamination has been documented in the vicinity of Alternative 1. Construction of Alternative 1 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, summarized in **Section 7.1.1.2** and discussed in **Section 9.5.1**, 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*. See **Section 9.5.1** for the proposed mitigation and impacts after incorporation of mitigation. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in The Eastside Transit Corridor Phase 2 Impacts Report.

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.

Construction of Alternative 1 with the Atlantic/Pomona Station Option would have the same effects as the construction of the base Alternative 1. If the Atlantic/Pomona Station Option is selected, the DSA of Alternative 1 would still include the Rio Hondo Reach 2 and San Gabriel River Reach 2. 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 8.0**). 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, which would be a significant impact. Implementation of MM HWQ-1, as summarized in **Section 7.1.1.2** and discussed in **Section 9.5.1**, would reduce the potential for construction to cause erosion and siltation in water and would thus reduce impacts to less than significant.

If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 7.1.1.2** and discussed in **Section 9.5.1**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

Additionally, 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, summarized in **Section 7.1.1.2** and discussed in **Section 9.5.1**, 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 with the Atlantic/Pomona Station Option would not conflict with the *LA Basin Plan*. See **Section 9.5.1** for the proposed mitigation and impacts after incorporation of mitigation. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in The Eastside Transit Corridor Phase 2 Impacts Report.

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.

If the Montebello At-Grade Option is selected, the DSA of Alternative 1 would still include the Rio Hondo Reach 2 and San Gabriel River Reach 2. 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(**Section 8.0**). 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 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 water, which would be a significant impact. Implementation of MM HWQ-1, as summarized in **Section 7.1.1.2** and discussed in **Section 9.5.1**, would reduce the potential for construction to cause erosion and siltation in water and would thus reduce impacts to less than significant.

If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 7.1.1.2** and discussed in **Section 9.5.1**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

Additionally, 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, summarized in **Section 7.1.1.2** and discussed in **Section 9.5.1**, 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 with the Montebello At-Grade Option would not conflict with the *LA Basin Plan*. See **Section 9.5.1** for the proposed mitigation and impacts after incorporation of mitigation. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in The Eastside Transit Corridor Phase 2 Impacts Report.

7.5.2 Alternative 2 Atlantic to Commerce/Citadel IOS

7.5.2.1 Operational Impacts

As described in **Section 6.4.1**, the groundwater basin underlying Alternative 2 is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Operation of Alternative 2 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. Alternative 2 is not near either the Rio Hondo Reach 2 or San Gabriel River Reach 2. Furthermore, operation of the Project would comply with post-construction measures in NPDES permits, LID standards required by the Los Angeles County, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 8.0**). 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 Alternative 2 would not conflict with or obstruct implementation of the *LA Basin Plan*. The impact would be less than significant.

Design Option

Atlantic/Pomona Station Option

As with the base Alternative 2, the groundwater basin underlying 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. Alternative 2 with Atlantic/Pomona Station Option is not near either the Rio Hondo Reach 2 or San Gabriel River Reach 2. Furthermore, operation of the Project would comply with post-construction BMPs in NPDES permits, LID standards, and local policies protecting water quality. Post-construction BMPs are also set forth in PM HWQ-1 (**Section 8.0**). 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 Alternative 2 with Atlantic/Pomona Station Option would not conflict with or obstruct implementation of the *LA Basin Plan*. The impact would be less than significant.

7.5.2.2 Construction Impacts

As described in **Section 6.4.1**, the groundwater basin underlying Alternative 2 is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Alternative 2 is not near either the Rio Hondo Reach 2 or San Gabriel River Reach 2. 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 of Alternative 2 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 8.0**). Further, only a minimal increase in impervious surface would occur 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 7.1.1.2** and discussed in **Section 9.5.2**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

As discussed in **Section 6.3.2**, groundwater contamination has been documented in the vicinity of Alternative 2. Construction of Alternative 2 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, summarized in **Section 7.1.1.2** and discussed in **Section 9.5.1**, 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 Alternative 2 would not conflict with the *LA Basin Plan*. See **Section 9.5.2** for the proposed mitigation and impacts after incorporation of mitigation. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in The Eastside Transit Corridor Phase 2 Impacts Report.

Design Option

Atlantic/Pomona Station Option

As with the base Alternative 2, the groundwater basin underlying 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.

Alternative 2 with the Atlantic/Pomona Station Option is not near either the Rio Hondo Reach 2 or San Gabriel River Reach 2. 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 of Alternative 2 with the Atlantic/Pomona Station Option 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 (**Section 8.0**). Further, only a minimal increase in impervious surface would occur 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 7.1.1.2** and discussed in **Section 9.5.2**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

Additionally, construction of 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, summarized in **Section 7.1.1.2** and discussed in **Section 9.5.1**, 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 Alternative 2 with the Atlantic/Pomona Station Option would not conflict with the *LA Basin Plan*. See **Section 9.5.2** for the proposed mitigation and impacts after incorporation of mitigation. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in The Eastside Transit Corridor Phase 2 Impacts Report.

7.5.3 Alternative 3 Atlantic to Greenwood IOS

7.5.3.1 Operational Impacts

As described in **Section 6.4.1**, the groundwater basin underlying Alternative 3 is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Operation of Alternative 3 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. Alternative 3 would end near the Rio Hondo Reach 2 and would not be near the San Gabriel River Reach 2. Operation of the Project would comply with post-construction BMPs in NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 8.0**). 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. Therefore, operation of Alternative 3 would not contribute to degradation of beneficial uses or exceed TMDL requirements in the Rio Hondo.

Based on the above, operation of Alternative 3 would not conflict with or obstruct implementation of the LA Basin Plan. The impact would be less than significant.

Design Options

Atlantic/Pomona Station Option

As with the base Alternative 3, the groundwater basin underlying Alternative 3 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. Alternative 3 with Atlantic/Pomona Station Option would end near the Rio Hondo Reach 2 and would not be near the San Gabriel River Reach 2. Operation of the Project would comply with post-construction BMPs in NPDES permits, LID standards, and local policies protecting water quality. Post-construction BMPs are also set forth in PM HWQ-1 (**Section 8.0).** 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. Therefore, operation of Alternative 3 with the Atlantic/Pomona Station Option would not contribute to degradation of beneficial uses or exceed TMDL requirements in the Rio Hondo.

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

Montebello At-Grade Option

The groundwater basin underlying Alternative 3 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. Alternative 3 with the Montebello At-Grade would end near the Rio Hondo Reach 2 and would not be near the San Gabriel River Reach 2. The Basin Plan identifies potential and intermittent beneficial uses for Rio Hondo Reach 2 (**Section 6.3**). Operation of the Project would comply with NPDES permits, LID standards, and local policies protecting water quality.

Post-construction BMPs are also set forth in PM HWQ-1 (**Section 8.0**). 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. Therefore, operation would not contribute to degradation of beneficial uses or exceed TMDL requirements in the Rio Hondo.

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

7.5.3.2 Construction Impacts

As described in **Section 6.4.1**, the groundwater basin underlying Alternative 3 is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Alternative 3 would end near the Rio Hondo Reach 2 but would not be near the San Gabriel River Reach 2. 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 of Alternative 3 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 8.0**). Further, only a minimal increase in impervious surface would occur 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 7.1.1.2** and discussed in **Section 9.5.3**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

As discussed in **Section 6.3.2**, groundwater contamination has been documented in the vicinity of Alternative 3. Construction of Alternative 3 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, summarized in **Section 7.1.1.2** and discussed in **Section 9.5.3**, 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 Alternative 3 would not conflict with the *LA Basin Plan*. See **Section 9.5.3** for the proposed mitigation and impacts after incorporation of mitigation. This mitigation, as well as information about hazardous and

contaminated materials, is discussed in detail in The Eastside Transit Corridor Phase 2 Impacts Report.

Design Options

Atlantic/Pomona Station Option

As with the base Alternative 3, the groundwater basin underlying Alternative 3 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.

Alternative 3 would end at the Rio Hondo Reach 2 and would not be near the San Gabriel River Reach 2. 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 of Alternative 3 with Atlantic/Pomona Station Option 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 (**Section 8.0**). Further, only a minimal increase in impervious surface would occur 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 7.1.1.2** and discussed in **Section 9.5.3**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

As discussed in **Section 6.3.2**, groundwater contamination has been documented in the vicinity of Alternative 3 with Atlantic/Pomona Station Option. Construction 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, summarized in **Section 7.1.1.2** and discussed in **Section 9.5.3**, 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 Alternative 3 with Atlantic/Pomona Station Option would not conflict with the *LA Basin Plan*. See **Section 9.5.3** for the proposed mitigation and impacts after incorporation of mitigation. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in The Eastside Transit Corridor Phase 2 Impacts Report.

Montebello At-Grade Option

As with the base Alternative 3, the groundwater basin underlying Alternative 3 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.

Alternative 3 would end near the Rio Hondo Reach 2 and would not be near San Gabriel River Reach 2. 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 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 (**Section 8.0**). Further, only a minimal increase in impervious surface would occur 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 7.1.1.2** and discussed in **Section 9.5.3**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

As discussed in **Section 6.3.2**, groundwater contamination has been documented in the vicinity of Alternative 3 with the Montebello At-Grade Option. Construction 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, summarized in **Section 7.1.1.2** and discussed in **Section 9.5.3**, 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 Alternative 3 with the Montebello At-Grade Option would not conflict with the *LA Basin Plan*. See **Section 9.5.3** for the proposed mitigation and impacts after incorporation of mitigation. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in The Eastside Transit Corridor Phase 2 Impacts Report.

7.5.4 Maintenance and Storage Facilities

7.5.4.1 Operational Impacts

7.5.4.1.1 Commerce MSF

As described in **Section 6.4.1**, the groundwater basin underlying the Commerce MSF site option is not subject to a sustainable groundwater management plan; thus, no conflict with a sustainable groundwater management plan would occur.

Operation of the Commerce MSF site option would have the potential for adverse effects on surface water and groundwater resources and water quality. 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 site option 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 8.0**). Thus, operation of the Commerce MSF site 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 is less than significant.

7.5.4.1.2 Montebello MSF

As described in **Section 6.4.1**, the groundwater basin underlying the Montebello MSF site 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 Montebello MSF site option would have the potential for adverse effects on surface water and groundwater resources and water quality. 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 site option 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 8.0**). Thus, operation of the Montebello MSF site 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 is less than significant.

Design Option

Montebello MSF At-Grade Option

The groundwater basin underlying Alternative 3 with the Montebello MSF 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 comply with NPDES permits, LID standards required by the Los Angeles County, and local policies protecting water quality. Implementation of post-construction BMPs are also set forth in PM HWQ-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 TMDL requirements. Therefore, operation would not contribute to degradation of beneficial uses or exceed TMDL requirements in the Rio Hondo.

Thus, operation of Montebello MSF At-Grade Option would not conflict with or obstruct implementation of the *LA Basin Plan*. The impact is less than significant.

7.5.4.2 Construction Impacts

7.5.4.2.1 Commerce MSF

As described in **Section 6.4.1**, the groundwater basin underlying the Commerce MSF site option is not subject to a sustainable groundwater management plan and, 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 of the Commerce MSF site option 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 (**Section 8.0**).

If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 7.1.1.2** and discussed in **Section 9.5.4**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

As discussed in **Section 6.3.2**, groundwater contamination has been documented in the vicinity of the Commerce MSF site option. Construction of the Commerce MSF site 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, summarized in **Section 7.1.1.2** and discussed in **Section 9.5.4**, 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 Commerce MSF site option would not conflict with the *LA Basin Plan*. See **Section 9.5.4** for the proposed mitigation and impacts after incorporation of mitigation. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in The Eastside Transit Corridor Phase 2 Impacts Report.

7.5.4.2.2 Montebello MSF

As described in **Section 6.4.1**, the groundwater basin underlying the Montebello MSF site option is not subject to a sustainable groundwater management plan and, 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 of the Montebello MSF site option 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 (**Section 8.0**).

If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 7.1.1.2** and discussed in **Section 9.5.4**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

As discussed in **Section 6.3.2**, groundwater contamination has been documented in the vicinity of the Montebello MSF site option. Construction 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 summarized in **Section 7.1.1.2** and discussed in **Section 9.5.4**, 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 Montebello MSF site option would not conflict with the *LA Basin Plan*. See **Section 9.5.4** for the proposed mitigation and impacts after incorporation of mitigation. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in The Eastside Transit Corridor Phase 2 Impacts Report.

Design Option

Montebello MSF At-Grade Option

The Montebello MSF At-Grade Option does not overlie a groundwater basin that is subject to a sustainable groundwater management plan, as described in **Section 6.4.1**. 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 of the Montebello MSF At-Grade Option 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 (**Section 8.0**).

If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 7.1.1.2** and discussed in **Section 9.5.4**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

As discussed in **Section 6.3.2**, groundwater contamination has been documented in the vicinity of the Montebello MSF At-Grade Option. Construction 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 summarized in **Section 7.1.1.2** and discussed in **Section 9.5.4**, 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 Montebello MSF At-Grade Option would not conflict with the *LA Basin Plan*. See **Section 9.5.4** for the proposed mitigation and impacts after incorporation of mitigation. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in The Eastside Transit Corridor Phase 2 Impacts Report.

8.0 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.

9.0 MITIGATION MEASURES AND IMPACTS AFTER MITIGATION

9.1 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?

9.1.1 Alternative 1 Washington

Operation of the base Alternative 1 would have less than significant impacts under Impact HWQ-1. As discussed in **Section 7.1.1**, construction of the base Alternative 1 would have a significant impact under Impact HWQ-1 because of the potential for construction activities to generate turbidity and release contaminants in water if work occurs in the Rio Hondo, Rio Hondo Spreading Grounds, or San Gabriel River when water is present. Construction activities along the alignment may also encounter, dewater, and dispose of contaminated groundwater.

9.1.1.1 Potential Operational or Construction Mitigation Measures

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

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 MM HAZ-2 above, shall be prepared and implemented.

9.1.1.2 Design Option Potential Operational or Construction Mitigation Measures

Atlantic/Pomona Station Option

MM HWQ-1, MM HAZ-2, and MM HAZ-3, described above, will be implemented during construction. No additional mitigation measures are required for operation or construction of Alternative 1 with the Atlantic/Pomona Station Option.

Montebello At-Grade Option

MM HWQ-1, MM HAZ-2, and MM HAZ-3, described above, will be implemented during construction. No additional mitigation measures are required for operation or construction of Alternative 1 with the Montebello At-Grade Option.

9.1.1.3 Impacts After Mitigation

9.1.1.3.1 Operational Impacts Determination

Operation of the base Alternative 1 would have less than significant impacts under Impact HWQ-1 and no mitigation is required.

Design Option

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option would have less than significant impacts under Impact HWQ-1 and no mitigation is required.

Montebello At-Grade Option

Operation of Alternative 1 with the Montebello At-Grade Option would have less than significant impacts under Impact HWQ-1 and no mitigation is required.

9.1.1.3.2 Construction Impacts Determination

With implementation of MM HWQ-1, MM HAZ-2, and MM HAZ-3, construction of the base Alternative 1 would have less than significant impacts under Impact HWQ-1.

Design Option

Atlantic/Pomona Station Option

With implementation of MM HWQ-1, MM HAZ-2, and MM HAZ-3, construction of Alternative 1 with the Atlantic/Pomona Station Option would have less than significant impacts under Impact HWQ-1.

Montebello At-Grade Option

With implementation of MM HWQ-1, MM HAZ-2, and MM HAZ-3, construction of Alternative 1 with the Montebello At-Grade Option would have less than significant impacts under Impact HWQ-1.

9.1.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operation of the base Alternative 2 would have less than significant impacts under Impact HWQ-1. As discussed in **Section 7.1.2.2**, construction of the base Alternative 2 would have a significant impact under Impact HWQ-1 because of the potential to encounter, dewater, and dispose of contaminated groundwater during construction.

9.1.2.1 Potential Operational or Construction Mitigation Measures

MM HAZ-2 and MM HAZ-3, described in **Section 9.1.1.1**, will be implemented during construction. No additional mitigation is required for the base Alternative 2.

9.1.2.2 Design Option Potential Operational or Construction Mitigation Measures

Atlantic/Pomona Station Option

MM HAZ-2 and MM HAZ-3, described in **Section 9.1.1.1**, will be implemented during construction. No additional mitigation is required for Alternative 2 with the Atlantic/Pomona Station Option.

9.1.2.3 Impacts After Mitigation

9.1.2.3.1 Operational Impacts Determination

Operation of the base Alternative 2 would have less than significant impacts under Impact HWQ-1 and no mitigation is required.

Design Option

Atlantic/Pomona Station Option

Operation of Alternative 2 with the Atlantic/Pomona Station Option would have less than significant impacts under Impact HWQ-1 and no mitigation is required.

9.1.2.3.2 Construction Impacts Determination

With implementation of MM HAZ-2 and MM HAZ-3, construction of the base Alternative 2 would have less than significant impacts under Impact HWQ-1.

Design Option

Atlantic/Pomona Station Option

With implementation of MM HAZ-2 and MM HAZ-3, construction of Alternative 2 with the Atlantic/Pomona Station Option would have less than significant impacts under Impact HWQ-1.

9.1.3 Alternative 3 Atlantic to Greenwood IOS

Operation of the base Alternative 3 would have less than significant impacts under Impact HWQ-1. As discussed in **Section 7.1.3.2**, construction of the base Alternative 3 would have a significant impact under Impact HWQ-1 because of the potential to encounter contaminated groundwater during construction.

9.1.3.1 Potential Operational or Construction Mitigation Measures

MM HAZ-2 and MM HAZ-3, as described in **Section 9.1.1.1**, will be implemented during construction. No additional mitigation is required for the base Alternative 3.

9.1.3.2 Design Option Potential Operational or Construction Mitigation Measures

Atlantic/Pomona Station Option

MM HAZ-2 and MM HAZ-3, as described in **Section 9.1.1.1**, will be implemented during construction. No additional mitigation is required for Alternative 3 with the Atlantic/Pomona Station Option.

Montebello At-Grade Option

MM HAZ-2 and MM HAZ-3, as described in **Section 9.1.1.1**, will be implemented during construction. No additional mitigation is required for Alternative 3 with the Montebello At-Grade Option.

9.1.3.3 Impacts After Mitigation

9.1.3.3.1 Operational Impacts Determination

Operation of the base Alternative 3 would have less than significant impacts under Impact HWQ-1 and no mitigation is required.

Design Option

Atlantic/Pomona Station Option

Operation of Alternative 3 with the Atlantic/Pomona Station Option would have less than significant impacts under Impact HWQ-1 and no mitigation is required.

Montebello At-Grade Option

Operation of Alternative 3 with the Montebello At-Grade Option would have less than significant impacts under Impact HWQ-1 and no mitigation is required.

9.1.3.3.2 Construction Impacts Determination

With implementation of MM HAZ-2 and MM HAZ-3, construction of the base Alternative 3 would have less than significant impacts under Impact HWQ-1.

Design Option

Atlantic/Pomona Station Option

With implementation of MM HAZ-2 and MM HAZ-3, construction of Alternative 3 with the Atlantic/Pomona Station Option would have less than significant impacts under Impact HWQ-1.

Montebello At-Grade Option

With implementation of MM HAZ-2 and MM HAZ-3, construction of Alternative 3 with the Montebello At-Grade Option would have less than significant impacts under Impact HWQ-1.

9.1.4 Maintenance and Storage Facilities

Operation of either the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would have less than significant impacts under Impact HWQ-1. As discussed in **Section 7.1.4**, construction of either the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would have a significant impact under Impact HWQ-1 because of the potential to encounter contaminated groundwater during construction.

9.1.4.1 Commerce Potential Operational or Construction Mitigation Measures

MM HAZ-2 and MM HAZ-3, as described in **Section 9.1.1.1**, will be implemented during construction. No additional mitigation is required for operation or construction of the Commerce MSF site option.

9.1.4.2 Montebello Commerce Potential Operational or Construction Mitigation Measures

MM HAZ-2 and MM HAZ-3, described in **Section 9.1.1.1**, will be implemented during construction. No additional mitigation is required for operation or construction of the Montebello MSF site option.

Design Option

Montebello MSF At-Grade Option

MM HAZ-2 and MM HAZ-3, described in **Section 9.1.1.1**, will be implemented during construction. No additional mitigation is required for operation or construction of the Montebello MSF At-Grade Option.

9.1.4.3 Impacts After Mitigation

9.1.4.3.1 Operational Impacts Determination

Operation of either the Commerce MSF site option or the Montebello MSF site option would have less than significant impacts under Impact HWQ-1 and no mitigation is required.

Design Option

Montebello MSF At-Grade Option

Operation of the Montebello MSF At-Grade Option would have less than significant impacts under Impact HWQ-1 and no mitigation is required.

9.1.4.3.2 Construction Impacts Determination

With implementation of MM HAZ-2 and MM HAZ-3, construction of either the Commerce MSF site option or the Montebello MSF site option would have less than significant impacts under Impact HWQ-1.

Design Option

Montebello MSF At-Grade Option

With implementation of MM HAZ-2 and MM HAZ-3, construction of the Montebello MSF At-Grade Option would have less than significant impacts under Impact HWQ-1.

9.2 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?

9.2.1 Alternative 1 Washington

Operation of the base Alternative 1 would have less than significant impacts under Impact HWQ-2. As discussed in **Section 7.2.1**, construction of the base Alternative 1 would have a significant impact under Impact HWQ-2 because of the replacement of bridge piers in the Rio Hondo Spreading Grounds and the San Gabriel River if the new bridge piers are larger in area than the existing bridge piers.

9.2.1.1 Potential Operational or Construction Mitigation Measures

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. In general, mitigation can occur at or below the elevation of impact and the hydraulics of the mitigation design must function to prevent changes 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 the flood control facility operator.

9.2.1.2 Design Option Potential Operational or Construction Mitigation Measures

Atlantic/Pomona Station Option

MM HWQ-2, described in **Section 9.2.1.1** will be implemented during construction. No additional mitigation is required for operation or construction of Alternative 2 with the Atlantic/Pomona Station Option.

Montebello At-Grade Option

MM HWQ-2, described in **Section 9.2.1.1** will be implemented during construction. No additional mitigation is required for operation or construction of Alternative 2 with the Montebello At-Grade Option.

9.2.1.3 Impacts After Mitigation

9.2.1.3.1 Operational Impacts Determination

Operation of the base Alternative 1 would have less than significant impacts under Impact HWQ-2 and no mitigation is required.

Design Option

Atlantic/Pomona Station Option

Operation of alternative 1 with the Atlantic/Pomona Station Option would have less than significant impacts under Impact HWQ-2 and no mitigation is required.

Montebello At-Grade Option

Operation of Alternative 1 with the Montebello At-Grade Option would have less than significant impacts under Impact HWQ-2 and no mitigation is required.

9.2.1.3.2 Construction Impacts Determination

With implementation of MM HWQ-2, construction of the base Alternative 1 would have less than significant impacts under Impact HWQ-2.

Design Option

Atlantic/Pomona Station Option

With implementation of MM HWQ-2, construction of Alternative 1 with the Atlantic/Pomona Station Option would have less than significant impacts under Impact HWQ-2.

Montebello At-Grade Option

With implementation of MM HWQ-2, construction of Alternative 1 with the Montebello At-Grade Option would have less than significant impacts under Impact HWQ-2.

9.2.2 Alternative 2 Atlantic to Commerce/Citadel IOS

As discussed in **Section 7.2.2**, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have no impact under HWQ-2; construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have a less than significant impact under HWQ-2. Therefore, no mitigation is required.

9.2.3 Alternative 3 Atlantic to Greenwood IOS

As discussed in **Section 7.2.3**, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have no impact under HWQ-2; construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have a less than significant impact under HWQ-2. Therefore, no mitigation is required.

9.2.4 Maintenance and Storage Facilities

As discussed in **Section 7.2.4**, operation and construction of either the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would have no impact under Impact HWQ-2. Therefore, no mitigation is required.

9.3 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 offsite?**
- **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?**

9.3.1 Alternative 1 Washington

As discussed in **Section 7.3.1**, operation and construction of the base Alternative 1 would have a less than significant impact under Impact HWQ-3(ii) (surface runoff) and HWQ-3(iii) (stormwater drainage); therefore, no mitigation is required.

Construction of the base Alternative 1 would have a significant impact under Impact HWQ-3(i) (erosion and siltation) if construction occurs when water is present in the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River. Construction of the base Alternative 1 could also have a significant impact under HWQ-3(iv) (flood flows) during construction work on bridges over the Rio Hondo and spreading grounds and the San Gabriel River. Mitigation for impacts on erosion and siltation and flood flows is described below.

9.3.1.1 Potential Operational or Construction Mitigation Measures

Erosion and Siltation

MM HWQ-1, described in **Section 9.1.1.1** will be implemented to reduce construction impacts from erosion and siltation to a less than significant level.

Flood Flows

MM HWQ-2, described in **Section 9.2.1.1** will be implemented to reduce construction impacts on flood flows to a less than significant level.

9.3.1.2 Design Option Potential Operational or Construction Mitigation Measures

9.3.1.2.1 Atlantic/Pomona Station Option

Erosion and Siltation

MM HWQ-1, described in **Section 9.1.1.1**, will be implemented to reduce construction impacts from erosion and siltation to a less than significant level. No additional mitigation is required for operation or construction of Alternative 1 with the Atlantic/Pomona Station Option.

Flood Flows

MM HWQ-2, described in **Section 9.2.1.1**, will be implemented to reduce construction impacts on flood flows to a less than significant level. No additional mitigation is required for operation or construction of Alternative 1 with the Atlantic/Pomona Station Option.

9.3.1.2.2 Montebello At-Grade Option

Erosion and Siltation

MM HWQ-1, described in **Section 9.1.1.1**, will be implemented to reduce construction impacts from erosion and siltation to a less than significant level. No additional mitigation is required for operation or construction of Alternative 1 with the Montebello At-Grade Option.

Flood Flows

MM HWQ-2, described in **Section 9.2.1.1**, will be implemented to reduce construction impacts on flood flows to a less than significant level. No additional mitigation is required for operation or construction of Alternative 1 with the Montebello At-Grade Option.

9.3.1.3 Impacts After Mitigation

9.3.1.3.1 Operational Impacts Determination

Erosion and Siltation

Operation of the base Alternative 1 would have a less than significant impact under Impact HWQ-3(i) and no mitigation is required.

Flood Flows

Operation of the base Alternative 1 would have no impact under Impact HWQ-3(iv) and no mitigation is required.

Design Option

Atlantic/Pomona Station Option

Erosion and Siltation

Operation of Alternative 1 with the Atlantic/Pomona Station Option would have a less than significant impact under Impact HWQ-3(i) and no mitigation is required.

Flood Flows

Operation of Alternative 1 with the Atlantic/Pomona Station Option would have no impact under Impact HWQ-3(iv) and no mitigation is required.

Montebello At-Grade Option

Erosion and Siltation

Operation of Alternative 1 with the Montebello At-Grade Option would have a less than significant impact under Impact HWQ-3(i) and no mitigation is required.

Flood Flows

Operation of Alternative 1 with the Montebello At-Grade Option would have no impact under Impact HWQ-3(iv) and no mitigation is required.

9.3.1.3.2 Construction Impacts Determination

Erosion and Siltation

With implementation of MM HWQ-1, construction of Alternative 1 would have less than significant impacts under Impact HWQ-3(i).

Flood Flows

With implementation of MM HWQ-2, construction of Alternative 1 would have less than significant impacts under Impact HWQ-3(iv).

Design Option

Atlantic/Pomona Station Option

Erosion and Siltation

With implementation of MM HWQ-1, construction of Alternative 1 with the Atlantic/Pomona Station Option would have less than significant impacts under Impact HWQ-3(i).

Flood Flows

With implementation of MM HWQ-2, construction of Alternative 1 with the Atlantic/Pomona Station Option would have less than significant impacts under Impact HWQ-3(iv).

Montebello At-Grade Option

Erosion and Siltation

With implementation of MM HWQ-1, construction of Alternative 1 with the Montebello At-Grade Option would have less than significant impacts under Impact HWQ-3(i).

Flood Flows

With implementation of MM HWQ-2, construction of Alternative 1 with the Montebello At-Grade Option would have less than significant impacts under Impact HWQ-3(iv).

9.3.2 Alternative 2 Atlantic to Commerce/Citadel IOS

As discussed in **Section 7.3.2**, operation and construction of Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have a less than significant impact under Impact HWQ-3(i-iii) and no impact under HWQ-3(iv); therefore, no mitigation is required.

9.3.3 Alternative 3 Atlantic to Greenwood IOS

As discussed in **Section 7.3.3**, 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 have a less than significant impact under Impact HWQ-3(i-iii) and no impact under HWQ-3(iv); therefore, no mitigation is required.

9.3.4 Maintenance and Storage Facilities

As discussed in **Section 7.3.4**, operation and construction of either the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would have a less than significant impact under Impact HWQ-3(i-iii) and no impact under HWQ-3(iv); therefore, no mitigation is required.

9.4 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?

9.4.1 Alternative 1 Washington

As discussed in **Section 7.4.1**, operation and construction of the base Alternative 1 or Alternative 1 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have a less than significant impact under Impact HWQ-4; therefore, no mitigation is required.

9.4.2 Alternative 2 Atlantic to Commerce/Citadel IOS

As discussed in **Section 7.4.2**, operation and construction of base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have no impact under Impact HWQ-4; therefore, no mitigation is required.

9.4.3 Alternative 3 Atlantic to Greenwood IOS

As discussed in **Section 7.4.3**, 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 have no impact under Impact HWQ-4; therefore, no mitigation is required.

9.4.4 Maintenance and Storage Facilities

As discussed in **Section 7.4.4**, operation and construction of either the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would have no impact under Impact HWQ-4; therefore, no mitigation is required.

9.5 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?

9.5.1 Alternative 1 Washington

Operation of the base Alternative 1 would have no impact under Impact HWQ-5. As discussed in **Section 7.5.1**, construction of Alternative 1 would have a significant impact under Impact HWQ-5 because of the potential for construction activities to generate turbidity and release contaminants in water if work occurs in the Rio Hondo, Rio Hondo Spreading Grounds, or San Gabriel River when water is present. Construction activities along the entire alignment may also encounter, dewater, and dispose of contaminated groundwater. Thus, construction of Alternative 1 could conflict with the *LA Basin Plan*.

9.5.1.1 Potential Operational or Construction Mitigation Measures

MM HWQ-1, MM HAZ-2, and MM HAZ-3, discussed in **Section 9.1.1.1**, will be implemented during construction of the base Alternative 1.

9.5.1.2 Design Option Potential Operational or Construction Mitigation Measures

Atlantic/Pomona Station Option

MM HWQ-1, MM HAZ-2, and MM HAZ-3, discussed in **Section 9.1.1.1**, will be implemented during construction of Alternative 1 with the Atlantic/Pomona Station Option.

Montebello At-Grade Option

MM HWQ-1, MM HAZ-2, and MM HAZ-3, discussed in **Section 9.1.1.1**, will be implemented during construction of Alternative 1 with the Montebello At-Grade Option.

9.5.1.3 Impacts After Mitigation

9.5.1.3.1 Operational Impacts Determination

Operation of the base Alternative 1 would have no impact under Impact HWQ-5 and no mitigation is required.

Design Option

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option would have no impact under Impact HWQ-5 and no mitigation is required.

Montebello At-Grade Option

Operation of Alternative 1 with the Montebello At-Grade Option would have no impact under Impact HWQ-5 and no mitigation is required.

9.5.1.3.2 Construction Impacts Determination

With implementation of MM HWQ-1, MM HAZ-2, and MM HAZ-3, construction of the base Alternative 1 would have less than significant impacts under Impact HWQ-5.

Design Option

Atlantic/Pomona Station Option

With implementation of MM HWQ-1, MM HAZ-2, and MM HAZ-3, construction of Alternative 1 with the Atlantic/Pomona Station Option would have less than significant impacts under Impact HWQ-5.

Montebello At-Grade Option

With implementation of MM HWQ-1, MM HAZ-2, and MM HAZ-3, construction of Alternative 1 with the Montebello At-Grade Option would have less than significant impacts under Impact HWQ-5.

9.5.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operation of the base Alternative 2 would have no impacts under Impact HWQ-5. As discussed in **Section 7.5.2**, construction of the base Alternative 2 would have a significant impact under Impact HWQ-5 because of the potential to encounter contaminated groundwater during construction and thus conflict with the *LA Basin Plan*.

9.5.2.1 Potential Operational or Construction Mitigation Measures

MM HAZ-2 and MM HAZ-3, discussed in **Section 9.1.1.1**, will be implemented during construction of the base Alternative 2.

9.5.2.2 Design Option Potential Operational or Construction Mitigation Measures

Atlantic/Pomona Station Option

MM HAZ-2 and MM HAZ-3, discussed in **Section 9.1.1.1**, will be implemented during construction of Alternative 2 with the Atlantic/Pomona Station Option.

9.5.2.3 Impacts After Mitigation

9.5.2.3.1 Operational Impacts Determination

Operation of the base Alternative 2 would have no impact under Impact HWQ-5 and no mitigation is required.

Design Option

Atlantic/Pomona Station Option

Operation of Alternative 2 with the Atlantic/Pomona Station Option would have no impact under Impact HWQ-5 and no mitigation is required.

9.5.2.3.2 Construction Impacts Determination

With implementation of MM HAZ-2 and MM HAZ-3, construction of the base Alternative 2 would have less than significant impacts under Impact HWQ-5.

Design Option

Atlantic/Pomona Station Option

With implementation of MM HAZ-2 and MM HAZ-3, construction of Alternative 2 with the Atlantic/Pomona Station Option would have less than significant impacts under Impact HWQ-5.

9.5.3 Alternative 3 Atlantic to Greenwood IOS

Operation of the base Alternative 3 would have no impacts under Impact HWQ-5. As discussed in **Section 7.5.3**, construction of the base Alternative 3 would have a significant impact under Impact HWQ-5 because of the potential to encounter contaminated groundwater during construction and thus conflict with the *LA Basin Plan*.

9.5.3.1 Potential Operational or Construction Mitigation Measures

MM HAZ-2 and MM HAZ-3, discussed in **Section 9.1.1.1**, will be implemented during construction of the base Alternative 3.

9.5.3.2 Design Option Potential Operational or Construction Mitigation Measures

Atlantic/Pomona Station Option

MM HAZ-2 and MM HAZ-3, discussed in **Section 9.1.1.1**, will be implemented during construction of Alternative 3 with the Atlantic/Pomona Station Option.

Montebello At-Grade Option

MM HAZ-2 and MM HAZ-3, discussed in **Section 9.1.1.1**, will be implemented during construction of Alternative 3 with the Montebello At-Grade Option.

9.5.3.3 Impacts After Mitigation

9.5.3.3.1 Operational Impacts Determination

Operation of the base Alternative 3 would have no impact under Impact HWQ-5 and no mitigation is required.

Design Option

Atlantic/Pomona Station Option

Operation of Alternative 3 with the Atlantic/Pomona Station Option would have no impact under Impact HWQ-5 and no mitigation is required.

Montebello At-Grade Option

Operation of Alternative 3 with the Montebello At-Grade Option would have no impact under Impact HWQ-5 and no mitigation is required.

9.5.3.3.2 Construction Impacts Determination

With implementation of MM HAZ-2 and MM HAZ-3, construction of the base Alternative 3 would have less than significant impacts under Impact HWQ-5.

Design Option

Atlantic/Pomona Station Option

With implementation of MM HAZ-2 and MM HAZ-3, construction of Alternative 3 with the Atlantic/Pomona Station Option would have less than significant impacts under Impact HWQ-5.

Montebello At-Grade Option

With implementation of MM HAZ-2 and MM HAZ-3, construction of Alternative 3 with the Montebello At-Grade Option would have less than significant impacts under Impact HWQ-5.

9.5.4 Maintenance and Storage Facilities

As discussed in **Section 7.5.4**, construction of either the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option, would have a significant impact under Impact HWQ-5 because of the potential to encounter contaminated groundwater during construction and thus conflict with the *LA Basin Plan*.

9.5.4.1 Commerce Potential Operational or Construction Mitigation Measures

MM HAZ-2 and MM HAZ-3, discussed in **Section 9.1.1.1**, will be implemented during construction of the Commerce MSF site option.

9.5.4.2 Montebello Potential Operational or Construction Mitigation Measures

MM HAZ-2 and MM HAZ-3, discussed in **Section 9.1.1.1**, will be implemented during construction of the Montebello MSF site option.

Design Option

Montebello MSF At-Grade Option

MM HAZ-2 and MM HAZ-3, discussed in **Section 9.1.1.1**, will be implemented during construction of the Montebello MSF At-Grade Option.

9.5.4.3 Impacts After Mitigation

9.5.4.3.1 Operational Impacts Determination

Commerce MSF

Operation of either the Commerce MSF site option or the Montebello MSF site option would have no impact under Impact HWQ-5 and no mitigation is required.

Design Option

Montebello MSF At-Grade Option

Operation of the Montebello MSF At-Grade Option would have no impact under Impact HWQ-5 and no mitigation is required.

9.5.4.3.2 Construction Impacts Determination

With implementation of MM HAZ-2 and MM HAZ-3, construction of either the Commerce MSF or the Montebello MSF site option would have less than significant impacts under Impact HWQ-5.

Design Option

Montebello MSF At-Grade Option

With implementation of MM HAZ-2 and MM HAZ-3, construction of the Montebello MSF At-Grade Option would have less than significant impacts under Impact HWQ-5.

9.6 Mitigation Measure Applicability

As described above, Build Alternatives, design options, and/or MSF site options would have significant hydrology and water quality impacts. Therefore, mitigation measures to reduce these impacts are identified. **Table 9-1** summarizes which mitigation measures are applicable to each Build Alternative and MSF site option. Unless otherwise noted, the Build Alternative mitigation measures apply to the base alternative and alternative with design option(s), and the MSF mitigation measures apply to the Commerce MSF site option, the Montebello MSF site option, and the Montebello MSF At-Grade Option. If there would be no impact or less than significant impacts, no mitigation is required and therefore, as identified in **Table 9-1,** mitigation measures are not applicable (N/A).

Table 9-1. Summary of Mitigation Measure Alternative Applicability

Mitigation Measure	Alternative 1	Alternative 2	Alternative 3	MSF
HWQ-1 Water Quality				
MM HWQ-1	Applicable	N/A	N/A	N/A
MM HAZ-2	Applicable	Applicable	Applicable	Applicable
MM HAZ-3	Applicable	Applicable	Applicable	Applicable
HWQ-2 Groundwater Supplies and Recharge				
MM HWQ-2	Applicable	N/A	N/A	N/A
HWQ-3(i) Erosion and Siltation				
MM HWQ-1	Applicable	N/A	N/A	N/A
HWQ-3(ii) Surface Runoff				
None required	N/A	N/A	N/A	N/A
HWQ-3(iii) Stormwater Drainage				
None required	N/A	N/A	N/A	N/A
HWQ-3(iv) Flood Flows				
MM HWQ-2	Applicable	N/A	N/A	N/A
HWQ-4 Inundation				
None required	N/A	N/A	N/A	N/A
HWQ-5 Water Management				
MM HWQ-1	Applicable	N/A	N/A	N/A
MM HAZ-2	Applicable	Applicable	Applicable	Applicable
MM HAZ-3	Applicable	Applicable	Applicable	Applicable

10.0 NO PROJECT ALTERNATIVE

10.1 No Project Alternative

10.1.1 Description

The No Project Alternative would maintain existing transit service through the year 2042. No new transportation infrastructure would be built within the DSA aside from projects currently under construction or funded for construction and operation by 2042 via the 2008 Measure R or 2016 Measure M sales taxes. This alternative would include the highway and transit projects in Metro's 2020 LRTP Update and the *2020 RTP/SCS*. Under the No Project Alternative, the Project would not be constructed and operated, and thus no significant Project-related impacts would occur.

10.1.2 Impacts

10.1.2.1 Water Quality

Operation of the No Project Alternative would result in no new construction or Project-related operational changes. Already planned transit and roadway projects would comply with federal, state, and local regulations protecting water quality. Thus, there would be a negligible increase in pollutant loadings in stormwater runoff that would percolate to groundwater. There would be less potential for the transit system to replace automobile trips and associated potential reduction in roadway pollutants. However, the No Project Alternative 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.

10.1.2.2 Groundwater

The existing DSAs are urbanized and mostly covered by impervious surfaces. No new Project-related construction or change in operations would occur under the No Project Alternative and it would not impact groundwater resources or recharge areas. Thus, the No Project Alternative would not decrease groundwater supplies or interfere substantially with groundwater recharge such that the sustainable groundwater management of the basin may be impeded, and there would be no Project-related impacts.

10.1.2.3 Drainage Patterns

10.1.2.3.1 Erosion and Siltation

The DSAs are urbanized and mostly covered by impervious surfaces. No new Project-related construction or change in operations would occur under the No Project Alternative. Thus, the No Project Alternative would not result in a substantial erosion or siltation on- or off-site and there would be no Project-related impacts.

10.1.2.3.2 Surface Runoff

The DSAs are urbanized and mostly covered by impervious surfaces. No new Project-related construction or change in operations would occur under the No Project Alternative. Thus, the No Project Alternative would not substantially increase the rate or volume of surface runoff in a manner that would result in flooding on- or offsite and there would be no Project-related impacts.

10.1.2.3.3 Stormwater Drainage

The DSAs are urbanized and mostly covered by impervious surfaces. No new Project-related construction or change in operations would occur. Thus, the No Project Alternative would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff and there would be no Project-related impacts.

10.1.2.3.4 Flood Flows

No new Project-related construction or other change in impervious surfaces would occur under the No Project Alternative. The No Project Alternative would not impede or redirect flood flows and there would be no Project-related impacts.

10.1.2.4 Inundation

The No Project Alternative is not within the limits of tsunami or seiche zones. A portion is located within or near 100-year and 500-year floodplain areas. However, no new Project-related construction or change in operations would occur under the No Project Alternative. Thus, the No Project Alternative would not risk release of pollutants due to project inundation and there would be no Project-related impacts.

10.1.2.5 Water Management

No new Project-related construction or change in operations would occur under the No Project Alternative. The No Project Alternative would not conflict with a sustainable groundwater management plan or the *LA Basin Plan* as the No Project Alternative would not significantly impact surface or groundwater quality; therefore, there would be no Project-related impacts.

11.0 SUMMARY OF ALTERNATIVES

Table 11-1 provides a summary of impacts for the No Project Alternative, three build alternatives, and the MSFs.

Table 11-1. Significant/Adverse Impacts Remaining After Mitigation

Impact Topic	No Project Alternative	Alternative 1	Alternative 2	Alternative 3	MSF
Impact HWQ-1 Water Quality	Less than Significant Impacts	Less than Significant Impacts	Less than Significant Impacts	Less than Significant Impacts	Less than Significant Impacts
Impact HWQ-2 Groundwater	No Impact	Less than Significant Impacts	Less than Significant Impacts	Less than Significant Impacts	Less than Significant Impacts
Impact HWQ-3(i) Erosion and Siltation	No Impact	Less than Significant Impacts	Less than Significant Impacts	Less than Significant Impacts	Less than Significant Impacts
Impact HWQ-3(ii) Surface Runoff	No Impact	Less than Significant Impacts	Less than Significant Impacts	Less than Significant Impacts	Less than Significant Impacts
Impact HWQ-3(iii) Stormwater Drainage	No Impact	Less than Significant Impacts	Less than Significant Impacts	Less than Significant Impacts	Less than Significant Impacts
Impact HWQ-3(iv) Flood Flows	No Impact	Less than Significant Impacts	No Impact	No Impact	No Impact
Impact HWQ-4 Inundation	No Impact	Less than Significant Impacts	No Impact	No Impact	No Impact
Impact HWQ-5 Water Management	No Impact	Less than Significant Impacts	Less than Significant Impacts	Less than Significant Impacts	Less than Significant Impacts

11.1 No Project

The No Project Alternative would have a less than significant impact under Impact HWQ-1 (Water Quality), and no impact under HWQ-2 (Groundwater), HWQ-3(i) (Erosion and Siltation), HWQ-3(ii) (Surface Runoff), HWQ-3(iii) (Stormwater Drainage), HWQ-3(iv) (Flood Flows), HWQ-4 (Inundation). and HWQ-5 (Water Management).

11.2 Alternative 1 Washington + MSF

The operation and construction of the base Alternative 1 and either the Commerce site option or Montebello MSF site option would have a less than significant impact under Impact HWQ-1 (Water Quality) with mitigation, HWQ-2 (Groundwater) with mitigation, HWQ-3(i) (Erosion and Siltation) with mitigation, HWQ-3(ii) (Surface Runoff), HWQ-3(iii) (Stormwater Drainage), HWQ-3(iv) (Flood Flows) with mitigation, HWQ-4 (Inundation), and HWQ-5 (Water Management) with mitigation.

11.2.1 Alternative 1 Washington + MSF + Design Options

The operation and construction of Alternative 1 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option and either the Commerce site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would have a less than significant impact under Impact HWQ-1 (Water Quality) with mitigation, HWQ-2 (Groundwater) with mitigation, HWQ-3(i) (Erosion and Siltation) with mitigation, HWQ-3(ii) (Surface Runoff), HWQ-3(iii) (Stormwater Drainage), HWQ-3(iv) (Flood Flows) with mitigation, HWQ-4 (Inundation), and HWQ-5 (Water Management) with mitigation.

11.3 Alternative 2 Atlantic to Commerce/Citadel IOS + MSF

The operation and construction of the base Alternative 2 and the Commerce MSF site option would have a less than significant impact under Impact HWQ-1 (Water Quality) with mitigation, HWQ-2 (Groundwater), HWQ-3(i) (Erosion and Siltation), HWQ-3(ii) (Surface Runoff), HWQ-3(iii) (Stormwater Drainage), and HWQ-5 (Water Management) with mitigation. There would be no impact under HWQ-3(iv) (Flood Flows) or HWQ-4 (Inundation).

11.3.1 Alternative 2 Atlantic to Commerce/Citadel IOS + MSF + Design Option

The operation and construction of Alternative 2 with the Atlantic/Pomona Station Option and the Commerce MSF site option would have a less than significant impact under Impact HWQ-1 (Water Quality) with mitigation, HWQ-2 (Groundwater), HWQ-3(i) (Erosion and Siltation), HWQ-3(ii) (Surface Runoff), HWQ-3(iii) (Stormwater Drainage), and HWQ-5 (Water Management) with mitigation. There would be no impact under HWQ-3(iv) (Flood Flows) or HWQ-4 (Inundation).

11.4 Alternative 3 Atlantic to Greenwood IOS + MSF

The operation and construction of the base Alternative 3 and either the Commerce site option or Montebello MSF site option would have a less than significant impact under Impact HWQ-1 (Water Quality) with mitigation, HWQ-2 (Groundwater), HWQ-3(i) (Erosion and Siltation), HWQ-3(ii) (Surface Runoff), HWQ-3(iii) (Stormwater Drainage), and HWQ-5 (Water Management) with mitigation. There would be no impact under HWQ-3(iv) (Flood Flows) or HWQ-4 (Inundation).

11.4.1 Alternative 3 Atlantic to Greenwood + MSF + Design Options

The operation and construction of Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option and either the Commerce site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would have a less than significant impact under Impact HWQ-1 (Water Quality) with mitigation, HWQ-2 (Groundwater), HWQ-3(i) (Erosion and Siltation), HWQ-3(ii) (Surface Runoff), HWQ-3(iii) (Stormwater Drainage), and HWQ-5 (Water Management) with mitigation. There would be no impact under HWQ-3(iv) (Flood Flows) or HWQ-4 (Inundation).

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13.0 REFERENCES CITED

California Department of Conservation. 2019. Alquist-Priolo Earthquake Fault Zones. Available at: https://www.conservation.ca.gov/cgs/alquist-priolo. Accessed June 11, 2021.

California Department of Fish and Wildlife (CDFW). 2020. Notification of Lake or Streambed Alternation. Notification Instructions and Process. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=3773&inline. Accessed June 11, 2021.

California Department of Water Resources (DWR). 2004. California's Groundwater Bulletin 118, South Coast Hydrologic Region. Coastal Plain of Los Angeles Groundwater Basin, Central Sub-basin and San Gabriel Valley Groundwater Basin. Updated February 27, 2004.

California DWR. 2010. Comment Letter on the Eastside Transit Corridor Phase 2 Project.

California DWR. 2021. SGMA Basin Priority Dashboard. Available at: https://gis.water.ca.gov/app/bp-dashboard/p2/. Accessed May 5, 2021.

California State Water Resources Control Board (SWRCB). 1968. Resolution No. 68-16. Available at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/1968/rs68_016.pdf. Accessed June 14, 2021.

California SWRCB. 2012. Order No. 2009-0009-DWQ. NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities. Available at: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html. Accessed June 9, 2021.

California SWRCB. 2014. Order No. CAS000001. General Permit for Stormwater Discharges Associated with Industrial Activities. Available at: https://www.waterboards.ca.gov/water_issues/programs/stormwater/industrial.html. Accessed June 14, 2021.

California SWRCB. 2019. The California Water Boards' Annual Performance Report – Fiscal Year 2018-19. Available at: https://www.waterboards.ca.gov/about_us/performance_report_1819/regulate/213_ww_reports.html. Accessed February 11, 2020.

City of Alhambra. 2005. Urban Water Management Plan. October 2005.

City of Commerce. 2008. 2020 General Plan. Available at: https://www.ci.commerce.ca.us/Home/ShowDocument?id=76. Accessed June 14, 2021.

City of Commerce. 2013. Municipal Code. Chapter 19.33 – Low Impact Development. Available at: https://library.municode.com/ca/commerce/codes/code_of_ordinances?nodeId=TIT19ZO_CH19.33LOIMDE. Accessed July 12, 2021.

City of Commerce. 2016. Municipal Code. Chapter 6.17 – Stormwater Runoff and Pollution Control. Available at: https://library.municode.com/ca/commerce/codes/code_of_ordinances?nodeId=TIT6HESA_CH6.17STRUPOCO. Accessed July 12, 2021.

City of Montebello. 1975. General Plan Conservation Element. Available at: https://www.cityofmontebello.com/general-plan.html. Accessed June 14, 2021.

City of Montebello. 1998. Municipal Code. Title 15, Buildings and Construction, Chapter 15.40, Flood Damage Prevention. Available at: https://library.municode.com/ca/montebello/codes/code_of_ordinances. Accessed June 11, 2021.

City of Montebello. 2002. Municipal Code. Title 8, Health and Safety, Chapter 8.36, Stormwater and Urban Runoff Pollution Prevention. Available at: https://library.municode.com/ca/montebello/codes/code_of_ordinances. Accessed June 11, 2021.

City of Pico Rivera. 2014a. Municipal Code. Title 16, Environment, Chapter 16.04, Stormwater and Urban Runoff Pollution Prevention. Available at: http://qcode.us/codes/picorivera/. Accessed June 14, 2021.

City of Pico Rivera. 2014b. Pico Rivera General Plan. Available at: http://www.pico-rivera.org/depts/ced/planning/plan.asp. Accessed June 14, 2021.

City of Pico Rivera. 2016. Municipal Code. Title 15, Buildings and Construction, Chapter 15.50, Floodplain Management. Available at: http://qcode.us/codes/picorivera/. Accessed June 14, 2021.

City of Santa Fe Springs. 1987. Code of Ordinances. Chapter 151 Flood Damage Prevention. Available at: http://santafesprings-ca.elaws.us/bookview. Accessed May 25, 2021.

City of Santa Fe Springs. 2014. Code of Ordinances. Chapter 52 Stormwater Management and Discharge Control. Available at: http://santafesprings-ca.elaws.us/bookview. Accessed May 25, 2021.

City of Santa Fe Springs. 2015. Code of Ordinances. Chapter 54 Water Conservation. Available at: http://santafesprings-ca.elaws.us/bookview. Accessed May 25, 2021.

City of Santa Fe Springs. Re-Imagine Santa Fe Springs 2040 General Plan. Available at: https://www.reimaginesantafesprings.org/documents. Accessed May 27, 2022.

City of Whittier. 1988. Code of Ordinances. Title 15, Buildings and Construction, Chapter 15.40, Flood Damage Prevention. Available at: https://library.municode.com/ca/whittier/codes/code_of_ordinances?nodeId=TIT15BUCO. Accessed May 25, 2021.

City of Whittier. 1999. Code of Ordinances. Title 8, Health and Safety, Chapter 8.36, Stormwater and Runoff Pollution Control. Available at: https://library.municode.com/ca/whittier/codes/code_of_ordinances?nodeId=TIT8HESA. Accessed May 25, 2021.

City of Whittier. 2021. Envision Whittier General Plan. Available at: https://www.cityofwhittier.org/government/community-development/planning-services/general-plan. Accessed February 10, 2022.

Fang, K., and Volker, J. 2017. Cutting Greenhouse Gas Emissions is Only the Beginning: A Literature Review of the Co-Benefits of Reducing Vehicle Miles Traveled. A White Paper from the National Center for Sustainable Transportation.

Federal Emergency Management Agency (FEMA). 2021. Available at: https://www.fema.gov/flood-maps/national-flood-hazard-layer. National Flood Hazard Layer. Accessed June 1, 2021.

Greater Los Angeles County (GLAC). 2014. Integrated Regional Water Management Plan. Available at: https://dpw.lacounty.gov/wmd/irwmp/FileList.aspx?path=docs\2014%20Public%20IRWMP%20Update. Accessed November 25, 2019.

Los Angeles County. 1998. Municipal Code. Title 12, Environmental Protection, Chapter 12.80, Stormwater and Runoff Pollution Control. Available at: https://library.municode.com/ca/los_angeles_county/codes/code_of_ordinances. Accessed June 10, 2021.

Los Angeles County. 2008. Municipal Code. Title 12, Environmental Protection, Chapter 12.84, Low Impact Development Standards. Available at: https://library.municode.com/ca/los_angeles_county/codes/code_of_ordinances. Accessed May 18, 2021.

Los Angeles County. 2015. General Plan. Adopted October 6, 2015. Available at: http://planning.lacounty.gov/generalplan/generalplan. Accessed May 25, 2021.

Los Angeles County. 2018. Municipal Code. Title 11, Health and Safety, Chapter 11.60, Floodways, Water Surface Elevations, and Areas of Special Flood Hazard. Available at: https://library.municode.com/ca/los_angeles_county/codes/code_of_ordinances. Accessed June 3, 2021.

Los Angeles County. 2019a. Municipal Code. Title 22, Planning and Zoning, Chapter 22.118, Flood Control. Available at: https://library.municode.com/ca/los_angeles_county/codes/code_of_ordinances. Accessed June 3, 2021.

Los Angeles County. 2019b. Municipal Code. Title 26, Building Code, Chapter 110.1, Flood Hazard. Available at: https://library.municode.com/ca/los_angeles_county/codes/code_of_ordinances. Accessed June 3, 2021.

Los Angeles County, 2020. Enterprise GIS. Sub Watershed Feature Layer, Ground Water Basins Feature Layer. Accessed September 2020.

Los Angeles County, Department of Public Works (LACDPW). 2006. A Common Thread Rediscovered – San Gabriel River Corridor Master Plan. June. Available at: https://dpw.lacounty.gov/wmd/watershed/sg/mp/mp.cfm. Accessed May 21, 2021.

LACDPW. 2010. Construction Site Best Management Practices Manual. Available at: https://dpw.lacounty.gov/cons/specs/BMPManual.pdf. Accessed June 4, 2021.

LACDPW. 2014. Low Impact Development Standards Manual. February. Available at: https://dpw.lacounty.gov/ldd/lib/fp/Hydrology/Low%20Impact%20Development%20Standards%20Manual.pdf. Accessed May 21, 2021.

LACDPW. 2016. Los Angeles County Comprehensive Floodplain Management Plan. Available at: https://dpw.lacounty.gov/wmd/nfip/fmp/documents/Los%20Angeles%20county%20FMP%20Final%20-%20No%20appendices.pdf. Accessed June 4, 2021.

LACDPW. 2019. Groundwater Wells Map. Available at: https://dpw.lacounty.gov/general/wells/#. Accessed May 18, 2021.

LACDPW. 2021a. Storm Drain System Dataset. Available at: https://data.lacity.org/City-Infrastructure-Service-Requests/Storm-Drain-System/pjh9-xwfn. Accessed June 7, 2021.

LACDPW. 2021b. Collaborative Clean Water Efforts Move Ahead. Available at: https://dpw.lacounty.gov/swq/. Accessed July 20, 2021.

LACDPW. No Date. Los Angeles County Flood Control District. Available at: https://dpw.lacounty.gov/LACFCD/web/. Accessed July 12, 2021.

Los Angeles County, Department of Public Works; Los Angeles County, Department of Parks and Recreation; Los Angeles County, Department of Regional Planning (LACDPW, LACDPR, and LACDRP). 1996. Los Angeles River Master Plan. June. Available at: https://ladpw.org/wmd/watershed/LA/LARMP/. Accessed May 18, 2021.

LACDPW, LACDPR, and LACDRP. 2021. Draft Los Angeles River Master Plan. January. Available at: https://pw.lacounty.gov/wmd/watershed/lar/docs/LARMP-MainVolumeEnglish-PUBLICDRAFT.pdf. Accessed May 18, 2021.

Los Angeles County Metropolitan Transportation Authority (Metro). 2009. General Management Water Use and Conservation Policy Statement. Effective July 27, 2009. Available at: https://partners.skanska.com/usa/clients/lametro/WSE/PreBid/OwnDoc/RFP/InHouse%20Conformed%20RFP/Conformed%20Am.%202/Vol_IV_Manuals/Water%20Use%20and%20Conservation.pdf. Accessed May 18, 2021.

Metro. 2010. Metro Rail Design Criteria. Section 10 Operations.

Metro. 2014. Metro Rail Design Criteria. Section 11 Yards and Shops.

Los Angeles County Metro. 2016a. Metro Rail Design Criteria. Section 8 Mechanical.

Los Angeles County Metro. 2016b. Metro Rail Design Criteria. Fire and Life Safety.

Los Angeles County Metro. 2017. Metro Rail Design Criteria. Section 3 Civil.

Los Angeles Regional Water Quality Control Board (LARWQCB). 1991. Order No. 91-93: General Waste Discharge Requirements for Discharge of Non-Hazardous Contaminated Soils and other Wastes in Los Angeles River and Santa Clara River Basins. Available at: https://www.waterboards.ca.gov/losangeles/board_decisions/adopted_orders/general_orders/wdr-order91-93.pdf. Accessed May 18, 2021.

LARWQCB. 1993. Order No. 93-010. General Waste Discharge Requirements for Specified Discharges to Groundwater in Santa Clara River and Los Angeles River Basins. Available at: https://www.waterboards.ca.gov/losangeles/board_decisions/adopted_orders/general_orders/wdr-order93-010.pdf. Accessed May 18, 2021.

LARWQCB. 2005. UST - Depth to groundwater database. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/ust/groundwater_database.html. Accessed February 21, 2022.

LARWQCB. 2014. Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan/basin_plan_documentation.html. Accessed May 10, 2021.

LARWQCB. 2016. Waste Discharge Requirements for Municipal Separate Storm Sewer System (MS4) Discharges within the Coastal Watersheds of Los Angeles County, Except those Discharges Originating from the City of Long Beach MS4. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/los_angeles_ms4/2016/R4-2012-0175-A01.pdf. Accessed May 10, 2021.

LARWQCB. 2017. 2014 and 2016 California 303(d) List of Water Quality Limited Segments. Available at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2014_16state_ir_reports/category5_report.shtml. Accessed May 10, 2021.

LARWQCB. 2019a. Total Maximum Daily Loads (TMDLs). Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/. Accessed May 24, 2021.

LARWQCB. 2019b. Watershed Management Programs. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/index.html. Accessed May 24, 2021.

LARWQCB. 2021. Final 2018 California Integrated Report Appendix A: 2018 303(d) List of Impaired Waters. Available at: https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2018_integrated_report.html. Accessed March 15, 2022.

Metropolitan Water District (MWD) of Southern California. 2007. Groundwater Assessment Study. September. Available at: https://cawaterlibrary.net/document/final-groundwater-assessment-study-a-status-report-on-the-use-of-groundwater-in-the-service-area-of-the-metropolitan-water-district-of-southern-california/. Accessed May 10, 2021.

Nixon, H., and Saphores, J-D. M. 2007. Impacts of motor vehicle operation on water quality – clean-up costs and policies. Transportation Research Pard D, 12(8). DOI :10.1016/j.trd.2007.08.002. Available at: https://escholarship.org/content/qt8tn1w17s/qt8tn1w17s.pdf?t=lnq4xr. Accessed July 13, 2021.

San Gabriel Valley Council of Governments. 2004. Rio Hondo Watershed Management Plan.

Trumbull, N., and Bae, C. 2000. Transportation and Water Pollution. University of Washington. Available at: https://courses.washington.edu/gmforum/topics/trans_water/trans_water.htm. Accessed July 13, 2021.

United States Army Corps of Engineers (USACE). 2008. Clarification Guidance on the Policy and Procedural Guidance for the Approval of Modifications and Alterations of Corps of Engineer Projects. Memorandum for SEE Distribution. November 17. Available at: https://semspub.epa.gov/work/01/70005575.pdf. Accessed May 10, 2021.

USACE. 2011. Whittier Narrows Dam Basin Master Plan and Draft Environmental Assessment.

USACE. 2018. Policy and Procedural Guidance for Processing Requests to Alter US Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408.

USACE. 2021. Whittier Narrows Dam Safety Modification, CA Construction. Available at: https://www.spl.usace.army.mil/Portals/17/docs/congressional/Fact_Sheets/PPMD/WhittierNarrowsDamSafetyFactSheet.pdf. Accessed January 25, 2022.

U.S. Geological Survey, 2019. National Hydrography Dataset Plus High Resolution for 4-digit Hydrologic Unit - 1807. April 1.

U.S. Environmental Protection Agency (USEPA). 2008. Evaluating the Effectiveness of Municipal Stormwater Programs. Available at: https://www3.epa.gov/npdes/pubs/region3_factsheet_swmp.pdf. Accessed July 13, 2021.

Water Replenishment District of Southern California. 2021. Regional Groundwater Monitoring Report, Water Year 2019-2020, Central and West Coast Basins, Los Angeles County, CA. April. Available at: https://www.wrd.org/reports/regional-groundwater-monitoring-report. Accessed May 24, 2021.