



Section 4.12

Water Resources

This section summarizes the existing water resources in the project area and the potential impacts of the proposed alternatives on these resources. Information in this section is based on, and updated where appropriate from, the Water Resources Technical Memorandum, which is incorporated into this Draft EIS/EIR as Appendix W, as well as Attachments 1 and 2 to the Appendix. Water resources topics include water quality (pollution), drainage, floodplains, and water supply.

4.12.1 Regulatory Framework/Methodology

4.12.1.1 Regulatory Framework

Applicable laws and guidance for the analysis of water resources impacts include federal, state, regional, and local regulations and requirements related to potential water quality and supply, flooding, and hydrology impacts. The following list is a summary of the regulations and permitting requirements pertinent to the proposed alternatives. Permits may be required during construction and operation of the proposed alternatives in order to comply with applicable regulations. Where possible, it is noted whether a specific permit would be required during the construction phases of the proposed alternatives, during operation, or both; however, exact permit requirements will not be known until specific plans for construction are finalized. Specific permitting requirements would depend on the construction phasing of the proposed alternative.

Appendix W, Water Resources Technical Memorandum, includes a full description of the regulatory framework.

4.12.1.1.1 Regulations Requiring a Permit or Formal Approval

Federal

CWA Section 404: The U.S. Army Corps of Engineers (USACE) has jurisdiction over all Waters of the U.S. Under the Clean Water Act (CWA) Section 404, the USACE regulates the discharge of dredged or fill materials (including from construction activities) into Waters of the U.S., which include navigable waters and traditionally navigable waters as defined in 33 CFR 328.3(a) (i.e., the Rio Hondo and San Gabriel River).

Rivers and Harbors Appropriation Act (RHA) of 1899: The USACE has jurisdiction over flood protection systems under Section 14 of the RHA (33 USC § 408). Construction and operation of the alternatives in the Whittier Narrows Dam Flood Control Basin (Basin) and the Rio Hondo or San Gabriel River channel would require review and approval by the USACE through a Section 408 permit.

Federal Regulation of Land Development in Flood Control Basins: The USACE maintains a flowage easement in the vicinity of the proposed Santa Anita Avenue station. Under Policy Guidance Letter No. 32 and Regulation 1110-2-1, the USACE evaluates land development proposals within reservoirs and flood control basins.

National Flood Insurance Program (NFIP): The Federal Emergency Management Agency (FEMA) issues flood zone maps on a countywide level. Volume 44 CFR § 59-65 sets NFIP floodplain management building requirements delineating policies for development in floodplains. Among other provisions, applicable aspects of the NFIP regulations state that if the area of construction is located within a regulatory floodway, as delineated on the Flood Insurance Rate Map, any

development must not increase base flood elevation levels. The term “development” means any man-made change to improved or unimproved real estate including, but not limited to, buildings, other structures, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials. A hydrologic and hydraulic analysis must be performed prior to the start of development and must demonstrate that the development would not cause any rise in base flood levels.

State

Clean Water Act (CWA) Section 401: The State Water Resources Control Board (SWRCB) has jurisdiction over all Waters of the State (i.e., Rio Hondo and San Gabriel River). Under CWA Section 401, the SWRCB must issue a 401 Water Quality Certification to ensure compliance with state water quality standards for any activity resulting in a discharge to a water body (including the placement of structures in the rivers and/or spreading basins in the project area).

CWA Section 402: Through delegated jurisdiction under the federal CWA, the SWRCB regulates point source discharges to Waters of the U.S. under the National Pollution Discharge Elimination System (NPDES). Regulated discharges also include diffuse sources of discharge caused by general construction activities covering an area greater than one acre, and stormwater discharges in municipal separate storm sewer systems (MS4s) in which runoff is carried through a developed conveyance system to specific discharge locations. The SWRCB issues both a construction general permit for protection of water quality from stormwater discharges during construction activities, and an industrial general permit for protection of water quality from stormwater discharges during industrial activities. Under construction and operation of the proposed alternatives, Metro would be responsible for compliance with both of these NPDES permits.

California Fish and Game Code Section 1602: The California Department of Fish and Game (CDFG) has jurisdiction over ephemeral,

intermittent, and perennial waterways, including natural lakes and manmade reservoirs. CDFG’s jurisdiction can also extend over the habitats adjacent to waterways. Under Section 1602, CDFG must be notified of any activity that substantially diverts or obstructs a waterway; changes or uses material from the bed, channel, or bank of a waterway; or deposits or disposes of debris, waste, or other material containing ground pavement where it may pass into any waterway. Notification of CDFG (through a Lake or Streambed Alteration Agreement) would be required prior to the start of construction.

Regional/Local

Los Angeles RWQCB: The Los Angeles Regional Water Quality Control Board (LARWQCB) has jurisdiction over stormwater and urban runoff discharges from 84 incorporated cities within the Los Angeles County Flood Control District (LACFCD), including the cities in the project area. Construction and operation of the proposed alternatives would have to comply with the Los Angeles County Municipal Storm Water Permit (Order No. 01-182, NPDES No. CAS-004001); Waste Discharge Requirement (WDR) Order No. 93-010 (for specified discharges to groundwater in the Santa Clara and Los Angeles River Basins); and WDR Order No. 91-93 for discharge of non-hazardous contaminated soils and other wastes in the Los Angeles and Santa Clara River Basins.

Los Angeles County Department of Public Works: The County’s Department of Public Works (LACDPW) has jurisdiction over the Rio Hondo and San Gabriel River Spreading Grounds as well as some of the drainage network through the Whittier Narrows area. Coordination with the LACDPW, and an encroachment and/or construction permit therefrom, may be required for construction of the LRT alternatives in these areas.

4.12.1.1.2 Other Applicable Laws

Federal

CWA Section 303(d): The U.S. Environmental Protection Agency (USEPA) has authority under the CWA to implement water pollution control programs. In California, this authority is delegated

to the SWRCB. Section 303(d) requires states to develop a list of water-quality-impaired water bodies and to implement total maximum daily loads (TMDLs) for certain pollutants in order to meet water quality standards.

Executive Order 11988, Floodplain

Management: All federal agencies must avoid (to the extent possible) long- and short-term adverse effects associated with the occupancy or modification of floodplains. The Order establishes an eight-step process that agencies should carry out as part of the decision-making process on projects with the potential to impact floodplains. Engineer Regulation (ER)-1165-2-26 describes how the USACE implements Executive Order 11988 to: avoid development in a floodplain unless it is the only practicable alternative; reduce the hazard and risk associated with flooding; minimize the impact of floods on human health, safety and welfare; and restore the beneficial values of floodplains.

Fish and Wildlife Coordination Act: The Fish and Wildlife Coordination Act requires federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) or, in some instances, with the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA/NMFS) and with state fish and wildlife resource agencies (such as the CDFG) before undertaking or approving water projects that would control or modify surface water. Consultation ensures that wildlife concerns receive equal consideration in the development of water resource projects and are coordinated with the features of these projects. Federal agencies are required to fully consider these agencies' recommendations in project reports and to include measures to reduce impacts on fish and wildlife in project plans.

State

Porter-Cologne Water Quality Control Act: The act authorizes the SWRCB to adopt, review, and revise policies for all waters of the state (including both surface and groundwater); regulates discharges to surface and groundwater; and directs the Regional Water Quality Control Boards (RWQCB) to develop regional basin plans.

The Act divides the state of California into nine RWQCB areas. Each RWQCB implements and enforces provisions of the CWA, subject to policy guidance and review by the SWRCB. The project area is located in the LARWQCB Region 4, the Los Angeles Region.

State Anti-degradation Policy: This policy is also enforced by the SWRCB to maintain high quality waters in California. The policy requires that any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge into high quality waters will be required to meet waste discharge requirements (WDRs) to control the discharge and assure that a pollution or nuisance will not occur (USEPA 2010).

Seismic Regulations: Under jurisdiction of the California Department of Conservation, Geological Survey, the Alquist-Priolo Earthquake Fault Zoning Act and the Seismic Hazards Mapping Act regulate the construction and protection of structures used for human occupancy on the surface trace of active faults and non-surface active fault rupture, respectively. State seismic regulations relate to water quality due to potential hazards related to dam failure and inundation caused by earthquake-induced ground shaking or a seiche event, erosion, improper siting and/or design, and rapidly rising floodwaters during heavy storm events.

Regional/Local

Applicable regional and local policies that pertain to the proposed alternatives include:

- L.A. Metro Water Use and Conservation Policy
- County of Los Angeles General Plan
- Los Angeles County Code
- LACFCD – Master Drainage Plan for Los Angeles County
- Multiple city general plans and municipal code requirements, including the cities of Los Angeles, Commerce, Montebello, Monterey Park, Pico Rivera, Rosemead, Santa Fe Springs, South El Monte, and Whittier

These plans and regulations set out policies and guidelines pertaining to water use, water quality, and floodplains. Some local approvals may be required; however, no specific permits pertain to county or city codes and regulations.

More specific information about each of these regulations is provided in Appendix W, Water Resources Technical Memorandum, of this Draft EIS/EIR. **Table 4.12-1** summarizes the potential permits and approval agencies necessary for implementation of the proposed alternatives.

4.12.1.2 NEPA Impact Criteria

In order to address potential impacts, this environmental document evaluates:

- Activities that would generate wastewater and the provisions for containing these possible pollutants; and
- The project’s potential for increasing runoff, and measures that will be used to reduce runoff or prevent pollutants from entering stormwater systems.
- Analysis of environmental effects under NEPA includes consideration of both context and intensity of effects to water resources (CEQ Regulations Part 1508.27). Context means that the significance of an action must be analyzed in several different contexts including the affected region, the affected interests, and the locality. Significance varies with the setting of the action. Intensity refers to the severity of the impact.

Table 4.12-1. Summary of Potential Permits and Approval Agencies

Permit	Approving Agency	Necessary During Construction or Operation
CWA Section 404	USACE	Construction
RHA Section 14, (Section 408)	USACE	Construction
CWA Section 401	SWRCB	Construction
NPDES General Construction	SWRCB	Construction
California Fish and Game Code Section 1602 – Lake or Streambed Alteration Agreement	CDFG	Construction
Encroachment/ Construction Permit	LACDPW	Construction
NPDES General Industrial	SWRCB	Operation
NPDES MS4	LARWQCB	Operation

Source: AECOM, CDM Smith 2011.

Notes:

CWA – Clean Water Act

RHA – Rivers and Harbors Act

LACDPW – Los Angeles County Department of Public Works

USACE – U.S. Army Corps of Engineers

SWRCB – State Water Resources Control Board

CDFG – California Department of Fish and Game

NPDES – National Pollutant Discharge Elimination System

MS4 - Municipal Separate Storm Sewer System

LARWQCB – Los Angeles Regional Water Quality Control Board

4.12.1.3 CEQA Impact Criteria

The *California Environmental Quality Act (CEQA) Guidelines* provide a framework for evaluating potential effects. A significant impact to hydrology and water quality would occur if an alternative would:

- Violate any applicable water quality standards or waste discharge requirements, including those defined in Section 13050 of the Clean Water Act;
- Affect the rate or change the direction of movement of existing groundwater contaminants, or expand the area affected by contaminants;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table;
- Substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site;
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows; or
- Expose people to a significant risk of loss, injury, or death involving flooding.

4.12.1.4 Methodology

In order to determine alternative-specific impacts to water resources, existing data on surface and groundwater resources, drainage patterns, water quality, water supply, and flooding and inundation hazards was evaluated. Impacts are discussed and analyzed separately for each impact category

relative to impacts resulting from construction period activities and operation-related activities.

During construction, the main potential project impacts are likely to arise from stormwater runoff, construction over rivers, potential water quality impacts, floodplain and wetland impacts in the Whittier Narrows/Whittier Narrows Dam area, and impacts to existing drainage infrastructure.

During operation, impacts to water resources would result from increases in polluted stormwater runoff, increases in impervious surfaces throughout the area of potential impact (resulting in decreased infiltration to groundwater), and surface water and groundwater contamination. Each of these potential operational impacts was analyzed in relation to applicable permits and regulations.

Appendix W, Water Resources Technical Memorandum, includes a full description of the methodology for impact analysis.

4.12.2 Affected Environment/Existing Conditions

The alternative alignments and maintenance yard options are located in the Los Angeles River Watershed, the Rio Hondo Watershed, and the San Gabriel River Watershed.

The Los Angeles River Watershed covers an area of over 834 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.

Covering an area of 142 square miles, the Rio Hondo Watershed is a sub-watershed of the Los Angeles River Watershed. The San Gabriel River Watershed borders the Rio Hondo Watershed to the east, extending along Peck Road and the eastern edge of the Whittier Narrows Recreation Area. The entire San Gabriel River watershed covers 689 square miles and includes portions of 37 cities in Los Angeles and Orange counties.

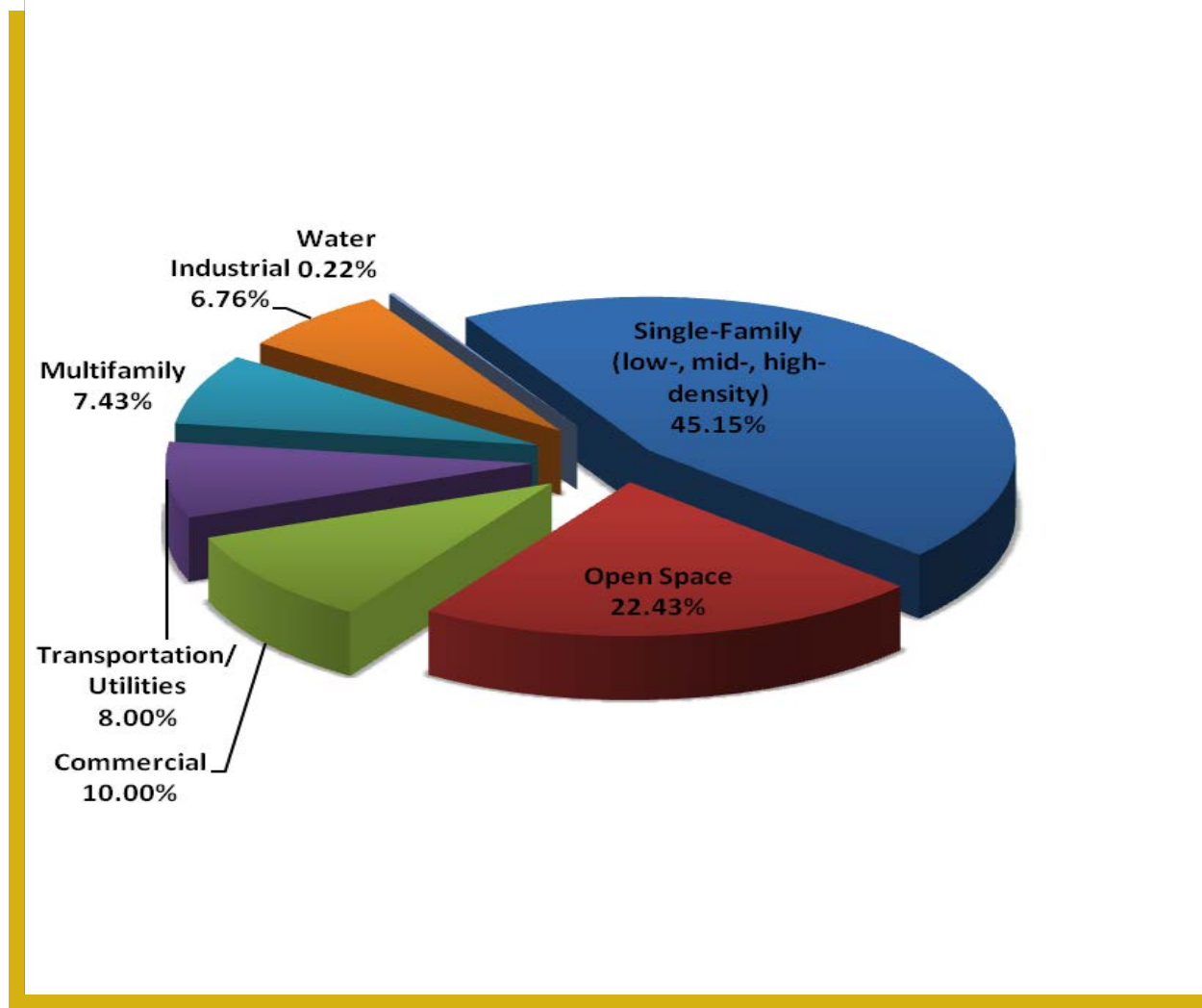
All three watersheds encompass varied topography and land uses. **Figure 4.12-1** illustrates the breakdown of land uses in the Los Angeles River Watershed Management Area. **Figure 4.12-2** shows the three watersheds in which the project is located.

4.12.2.1 Area of Potential Impact

Water resources in the project area are in Region 4 of the State Water Resources Control Board (SWRCB). Region 4 is also known as the Los Angeles Region and is governed by the LARWQCB. As defined by LARWQCB, the area of potential impact (API) for both build alternatives is defined

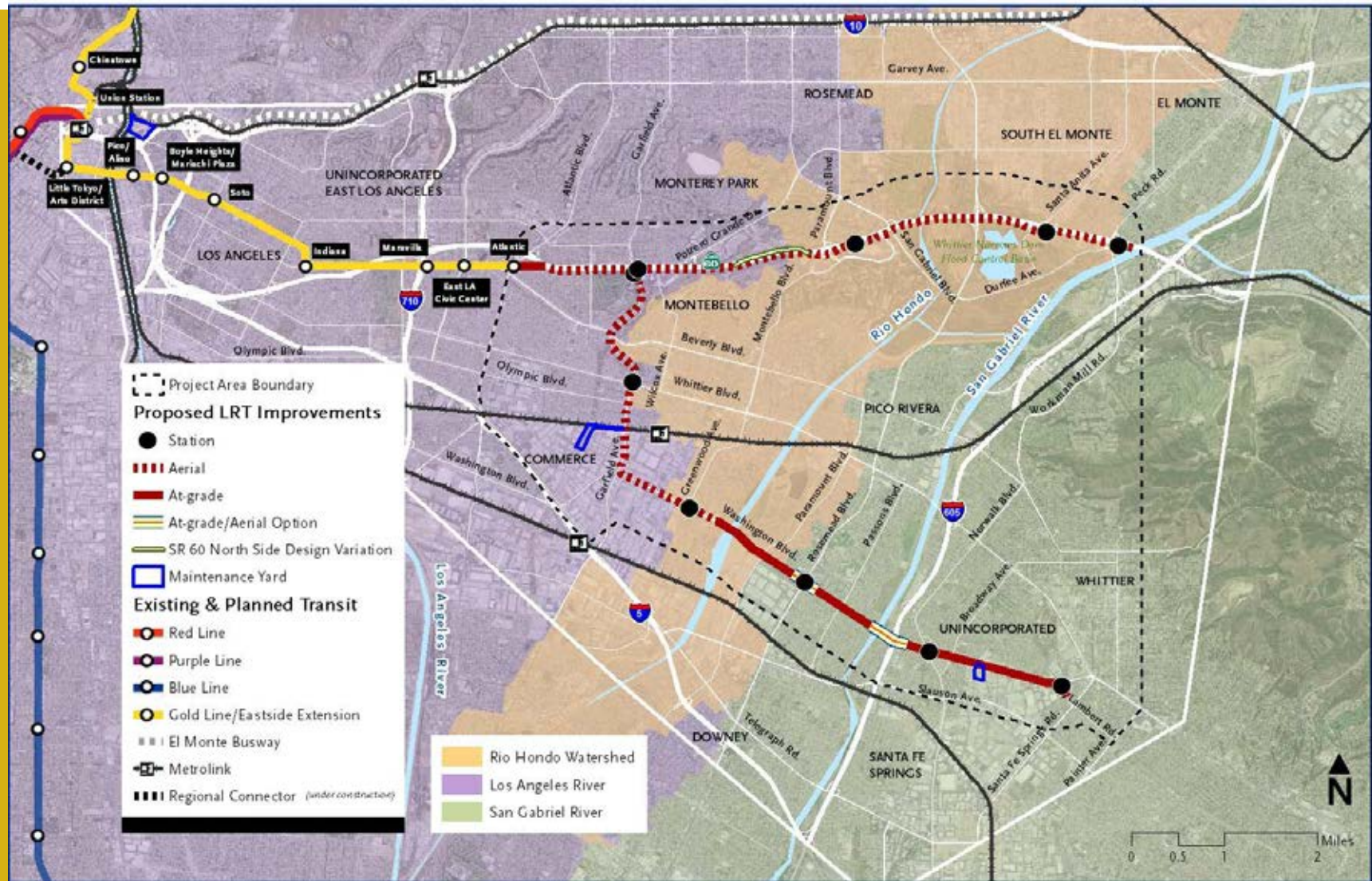
as the Los Angeles River Watershed, Rio Hondo Sub-Watershed, and San Gabriel River Watershed.

In relation to groundwater resources, the Central Sub-Basin of the Coastal Plain of Los Angeles and the San Gabriel Valley Groundwater Basin underlie the project area. The boundaries of these groundwater features were used to define the area where groundwater contamination issues in the project area, as well as any potential impacts from shallow groundwater, were investigated.



Source: LADPW and LADWP 2005.

Figure 4.12-1. Land Use in the Los Angeles River Watershed



Source: AECOM, CDM 2011.

Figure 4.12-2. Watersheds in the Project Area

4.12.2.2 Municipal Water Supply

Local water supply sources in the project area 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.

Municipal water is supplied by local water supply agencies in each of the cities in the project area.

4.12.2.3 Flooding and Inundation

The project area for the alternative alignments is dominated by urban development and extensively engineered stormwater drainage infrastructure. Based on FEMA data, the majority of the project area is located in flood zone X, outside of the 100-year and 500-year flood zones, and thus would not be susceptible to these storm events as defined by FEMA. (100-year and 500-year storms are defined as having a one percent and 0.2 percent chance, respectively, of occurring in any given year.)

An analysis of flood inundation frequency and extent in the Whittier Narrows Dam Flood Control Basin was conducted by the USACE and presented in the *2011 Whittier Narrows Dam Basin Master Plan*. This analysis indicates that portions of the proposed SR 60 alignment within Whittier Narrows would be located in areas that would be inundated during 10-, 50-, and 100-year flood events, as shown in **Figure 4.12-3**.

The proposed options for maintenance yard locations are also mostly 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. **Figure 4.12-4** shows the location of proposed maintenance yards for the alternatives. A small portion of the site in the northwest of the Mission Junction rail facility maintenance yard option, where it borders the Los Angeles River, is located in the 100-year flood zone. The remainder of that site, as well as the other proposed maintenance yard option sites, are located in flood zone X, which is defined as a minimal flood risk.

The Inundation Hazard Zone is defined as including areas that would flood should earthquake-induced failure of up-gradient dams, flood control facilities, or other water retaining structures occur.

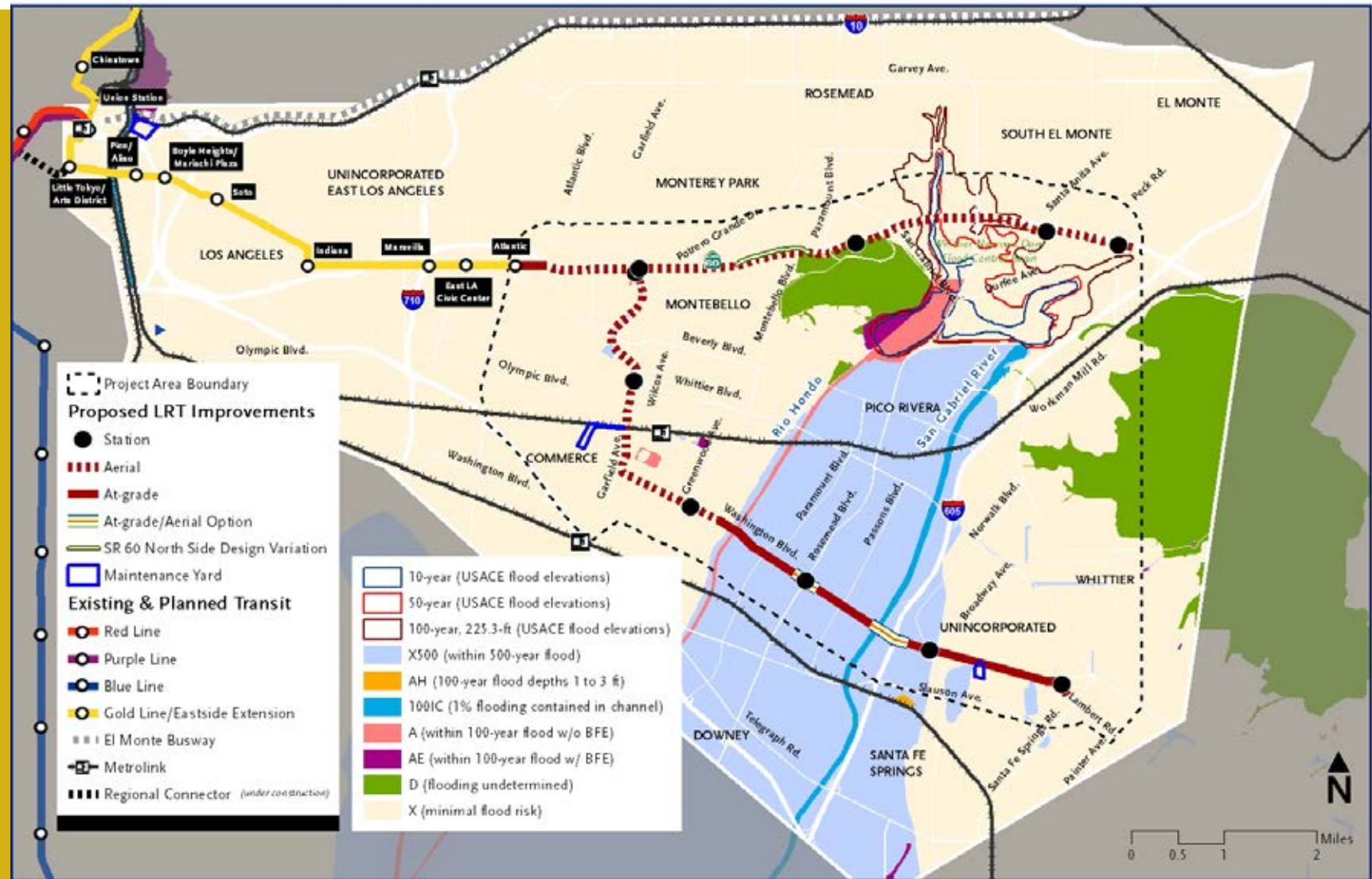
Multiple flood control structures are located in the project area, including the Whittier Narrows Flood Control Basin and Whittier Narrows Dam as well as the channels of the Rio Hondo and San Gabriel River. Flooding or failure of these facilities could cause inundation in the vicinity of the proposed alternative alignments.

The enclosed water bodies nearest to the alignment alternatives are Garvey Reservoir and Legg Lake. At its closest point, Garvey Reservoir is approximately one mile from the SR 60 LRT Alternative alignment where it crosses Potrero Grande Drive. Legg Lake is much closer to the SR 60 LRT Alternative alignment, but it 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 proposed project alignments are located more than 20 miles from the ocean. Therefore, the alignment alternatives are not located within areas potentially impacted by seiches or tsunamis.

Appendices W, Water Resources Technical Memorandum, and V, Geotechnical/Seismic/Hazardous Materials Technical Memorandum, of this Draft EIS/EIR fully describe the location of inundation zones in the project area. The Geotechnical/Seismic/Hazardous Materials Technical Memorandum, Appendix V, concluded that catastrophic failure of a major dam in the vicinity of the alternative alignments as a result of an earthquake is considered unlikely.

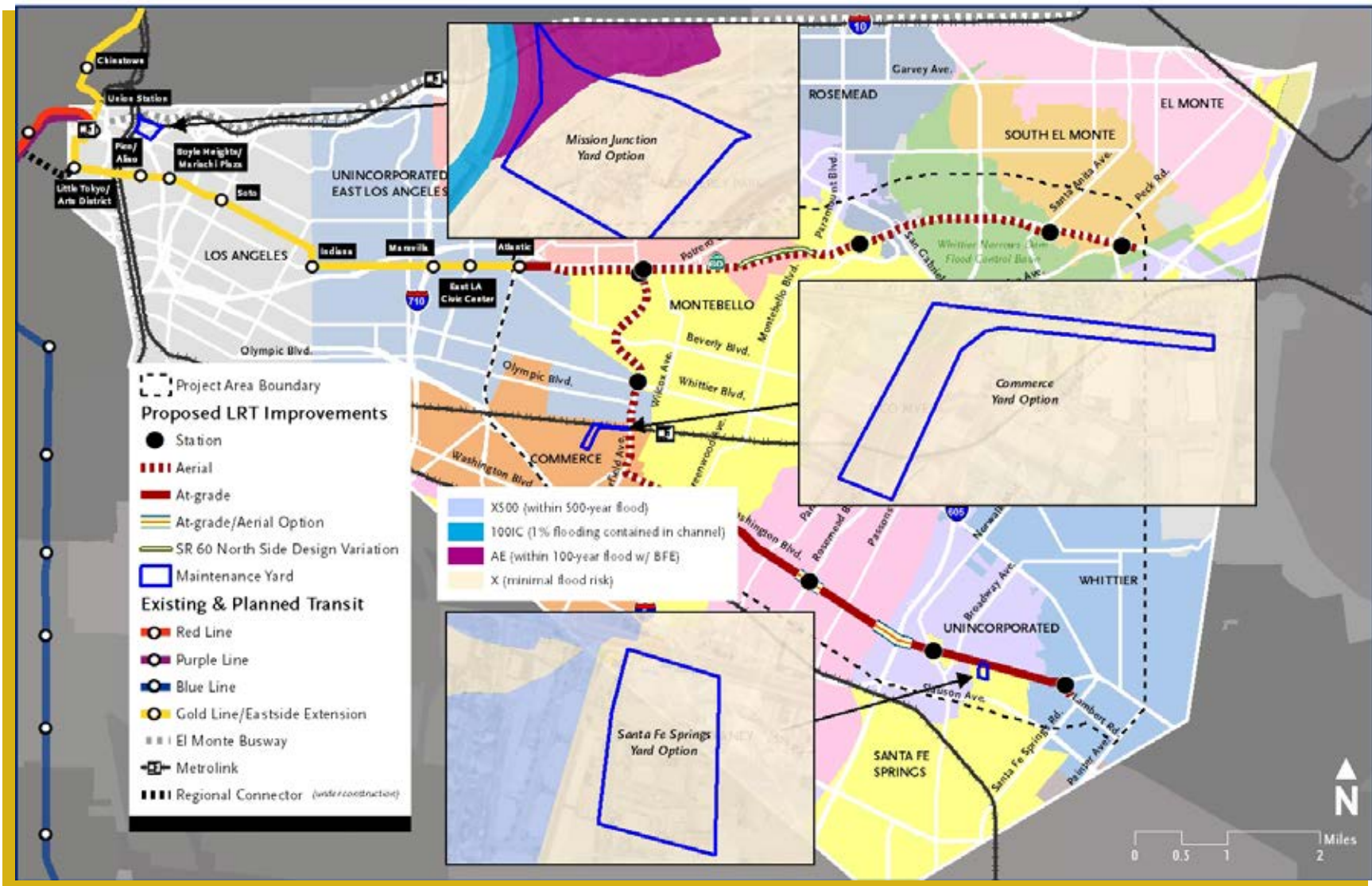
4.12.2.4 Local Surface Water Resources

As depicted in **Figure 4.12-5**, the main surface water resources in the project area include the Rio Hondo, San Gabriel River, and Legg Lake in the Whittier Narrows Dam Flood Control Basin, as well as smaller tributaries and lakes in the watersheds



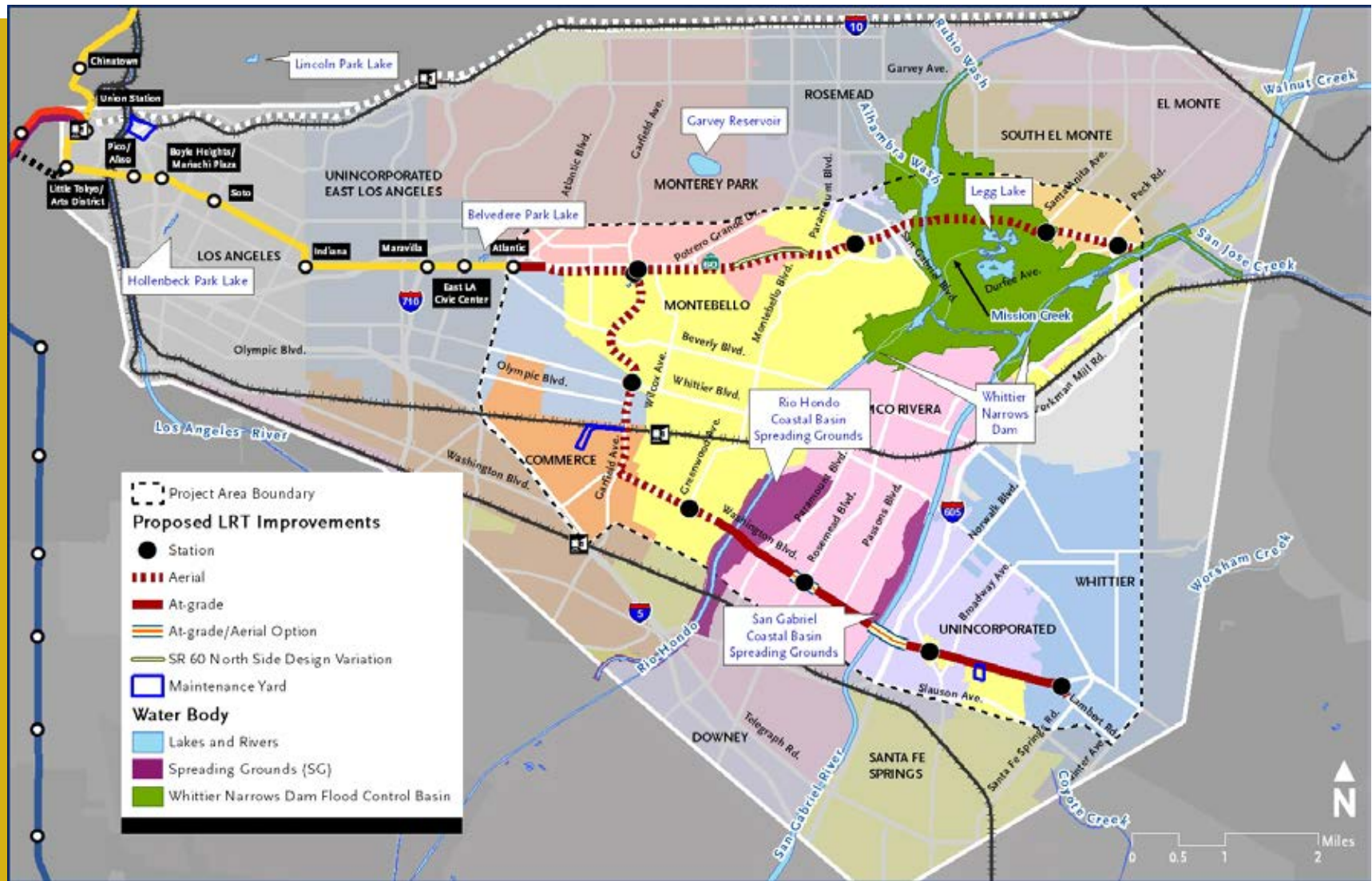
Source: USACE, 1994; FEMA, 2013.

Figure 4.12-3. FEMA Flood Zones in the Project Area



Source: FEMA, 2013.

Figure 4.12-4. FEMA Flood Zones - Maintenance Yard



Source: USACE, 2010; Los Angeles County Department of Public Works, Water Resources Division, 2006.

Figure 4.12-5. Surface Water Resources in the Project Area

The Rio Hondo is hydraulically connected to the San Gabriel River Watershed because flows from the San Gabriel River are routed to Whittier Narrows Reservoir and through the Rio Hondo during larger flood events.

4.12.2.5 Groundwater

Figure 4.12-6 shows the two groundwater basins underlying the project area: the Central Sub-Basin and the Main San Gabriel Basin.

Groundwater resources in these basins are replenished through the spreading grounds in the project area. The main spreading grounds in the project area include the San Gabriel River Spreading Grounds and the Rio Hondo Coastal Basin Spreading Grounds. The San Gabriel River in the project area has a soft, unlined bottom and also serves as a groundwater recharge area.

Table 4.12-2 summarizes the recharge capacity of these areas in the watershed.

Table 4.12-2. Summary of Recharge Basins in the Project Area

Spreading Basin	Area (acres)	Wetted Area (acres)	Recharge Capacity (AFY)	Water Source	Owner
Rio Hondo Coastal Basin 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.

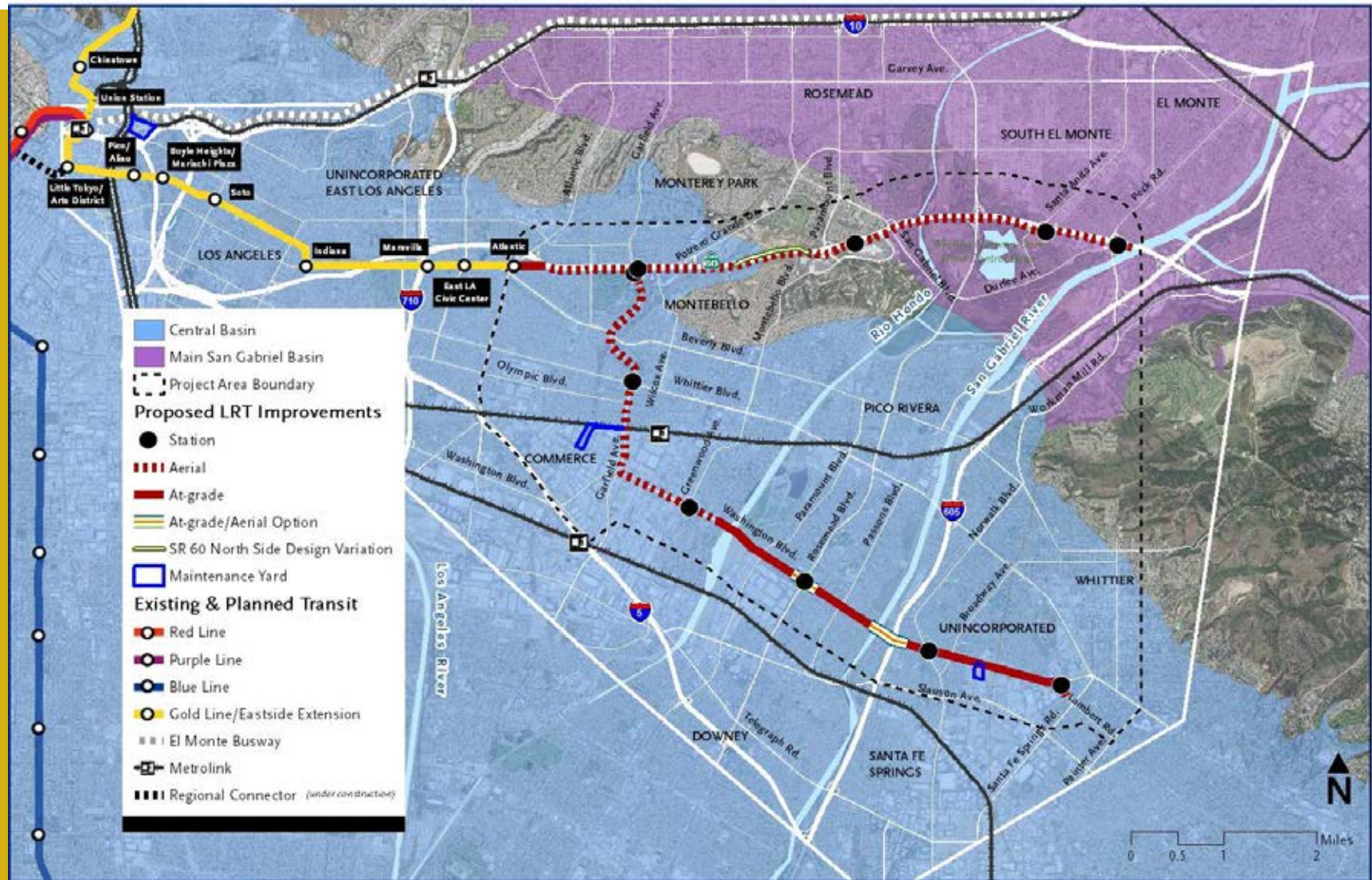
4.12.2.6 Drainage

Along the alternative alignments, stormwater and other surface water runoff is conveyed to municipal storm drains (Figure 4.12-7). Most local drainage networks are controlled by structural flood control measures.

The majority of the length of the alternative alignments is along major arterials with curb and gutter features. There are multiple storm drains and drainage features within the project area. Drainage in the northwestern portion of the project area (near the Mission Junction rail facility proposed maintenance yard location) flows generally southeast and southwest through city and county storm drains into the Los Angeles River, which ultimately discharges into the Pacific Ocean.

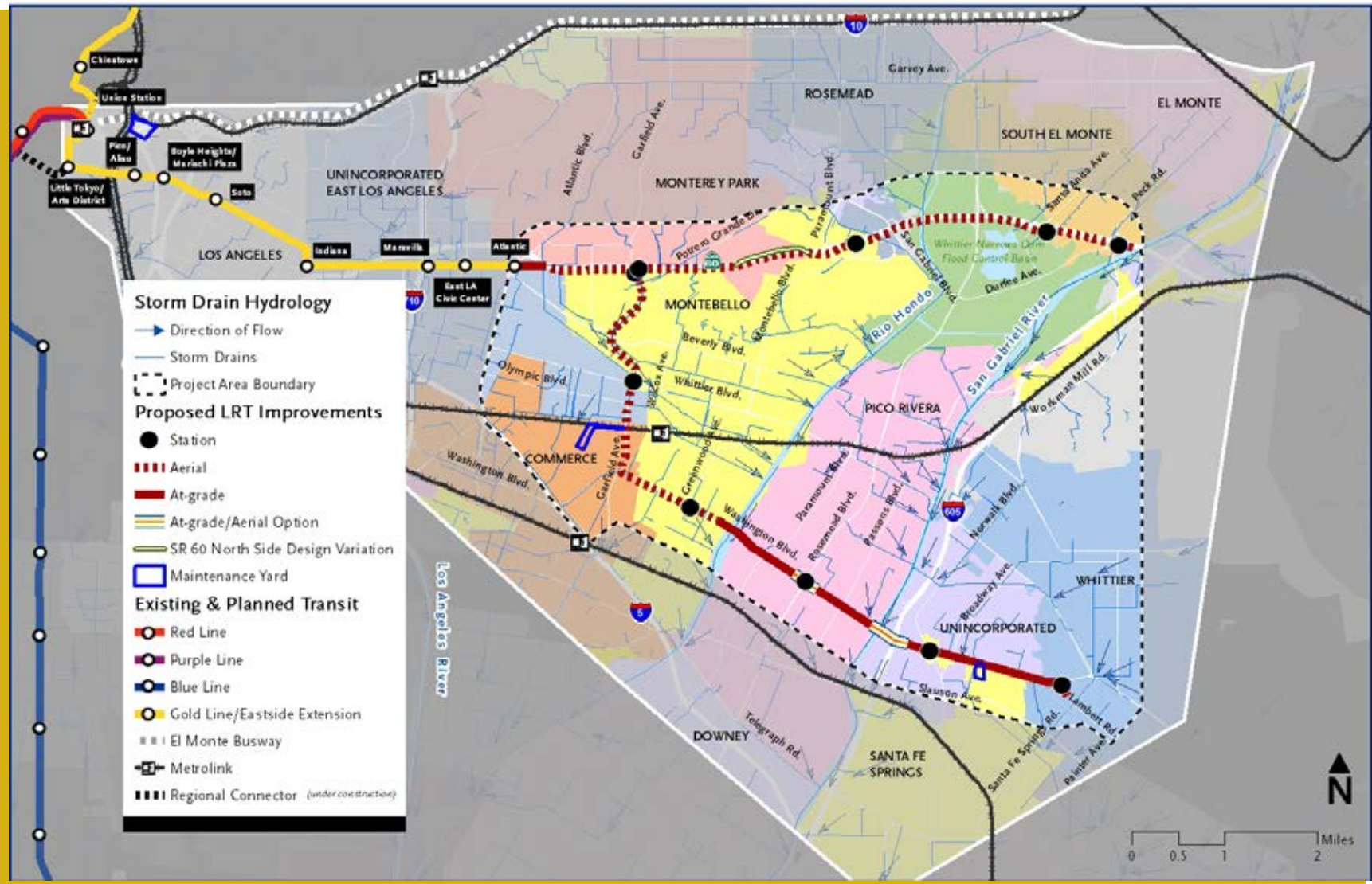
Major storm drains observed during field visits to the project area were located:

- South of SR 60 at the north-central section of the Whittier Narrows Recreation Area, west of the proposed Santa Anita Avenue station site;
- At the cul-de-sac of Muscatel Avenue south of SR 60;
- North of Town Center Drive near Paramount Boulevard;
- On the north side of SR 60 across from the northeast end of the Operating Industries, Inc. (OII) landfill site;
- On the north side of SR 60 directly west of Greenwood Avenue;



Source: Los Angeles County Department of Public Works, 2006.

Figure 4.12-6. Groundwater Basins



Source: Los Angeles County Department of Public Works, 2006.

Figure 4.12-7. Stormwater Drainage Infrastructure

- In Washington Boulevard 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.

4.12.2.7 Water Quality

Daily urban runoff in the project area has negative impacts to the water quality of the middle reach of the Los Angeles River (located near the proposed Mission Junction Maintenance Yard Option). Runoff washes residues from the land, including deposits from vehicles, pet waste, pesticides, and street litter, into the storm drain system. Surface water resources in the vicinity of the alternative alignments are also negatively impacted by runoff

from dense residential and commercial development in the watersheds. In the San Gabriel River, water quality is also affected by tertiary effluent from several sewage treatment plants entering the middle reach of the river.

The presence of these pollutants prevents water bodies in project area watersheds from meeting the designated beneficial uses established by state water quality standards. When beneficial uses are not met, water bodies are placed on the 303(d) List of Water Quality Limited Segments maintained by the LARWQCB, and total maximum daily loads (TMDLs) are developed to address the high levels of pollutants. **Table 4.12-3** summarizes the pollutants requiring the development of TMDLs in the main surface water resources within the project area.

Table 4.12-3. 303(d) List of Pollutants Requiring TMDLs in Surface Water Resources in the Project Area

Pollutant	Expected TMDL Completion Date ¹	Date USEPA Approved TMDL	TMDL Effective Date
Los Angeles River Reach 3			
Ammonia	N/A	03/18/2004	03/23/2004
Copper	N/A	12/22/2005	01/11/2006
Lead	N/A	12/22/2005	01/11/2006
Nutrients (Algae)	N/A	03/18/2004	03/23/2004
Trash	N/A	07/24/2008	09/23/2008
Rio Hondo			
Coliform Bacteria	07/08/2010	N/A	TBD ²
Legg Lake			
Ammonia	01/01/2019	N/A	N/A
Copper	01/01/2019	N/A	N/A
Lead	01/01/2019	N/A	N/A
Odor	01/01/2019	N/A	N/A
Trash	N/A	02/27/2008	03/06/2008

Table 4.12-3. 303(d) List of Pollutants Requiring TMDLs in Surface Water Resources in the Project Area (continued)

Pollutant	Expected TMDL Completion Date ¹	Date USEPA Approved TMDL	TMDL Effective Date
Legg Lake			
pH	01/01/2019	N/A	N/A
San Gabriel River			
Coliform Bacteria	01/01/2011	N/A	N/A
Cyanide	01/01/2021	N/A	N/A
Lead	N/A	03/27/2007	N/A
Indicator Bacteria	01/01/2021	N/A	N/A

Source: LARWQCB 2008.

Notes:

¹ If a TMDL has a completion date in the future, then it has not been approved by USEPA and it has not yet become effective.

² TBD = The TMDL was adopted by the RWQCB on July 8, 2010, but an effective date has not been set by the USEPA.

Due to the long history of commercial and industrial activity in the project area, groundwater in the project area also suffers from quality issues. Contaminants include sulfate, total dissolved solids, iron, chloride, and other types of industrial wastes.

The SR 60 LRT Alternative alignment would be located immediately adjacent to the OII landfill site along the south side of SR 60. The landfill is a toxic Superfund site and has been closed and permitted in accordance with USEPA criteria. In the immediate project area, this site has led to groundwater contamination plumes in the San Gabriel Basin in the project area.

Appendix V, Geotechnical/Seismic/Hazardous Materials Technical Memorandum, 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 alignments for both the SR 60 LRT Alternative and the Washington Boulevard LRT Alternative.

4.12.3 Environmental Impacts/Environmental Consequences

The following summarizes the evaluation of potential water resource impacts for each alternative. Impact conclusions for all of the alternatives are based on the thresholds identified above in Section 4.12.1. **Table 4.12-4** summarizes the results of the analysis.

4.12.3.1 No Build Alternative

4.12.3.1.1 Impact Analysis

Construction Impacts

There would be no new construction under the No Build Alternative; therefore, there would be no impacts or adverse effects with respect to water supply, groundwater, flooding, or water quality in the project area under CEQA or NEPA significance criteria. The projects identified in the *2009 LRTP* and SCAG's *2012 RTP* would comply with federal, state, and local regulations protecting water resources and floodplains.

Table 4.12-4. Summary of Potential Water Resources Impacts

Alternative	Municipal Water Supply (NEPA/CEQA)	Flooding (NEPA/CEQA)	Watersheds and Surface Water Resources (NEPA/CEQA)	Groundwater Resources (NEPA/CEQA)	Drainage (NEPA/CEQA)	Water Quality (NEPA/CEQA)	Groundwater Contamination (NEPA/CEQA)
No Build (Construction and Operational Impacts)	None	None	None	None	None	None	None
TSM (Construction and Operational Impacts)	None	None	None	None	None	None	None
SR 60 LRT Alternative	Construction: Not adverse/ Less than significant	Construction: Not adverse/Less than significant (FEMA flood zones along LRT alignment) Not adverse after mitigation/Less than significant after mitigation (flood control facilities and USACE flowage easement)	Construction: Not adverse/ Less than significant	Construction: Not adverse/ Less than significant	Construction: Not adverse/ Less than significant	Construction: Not adverse after mitigation/Less than significant after mitigation	Construction: Not adverse after mitigation /Less than significant after mitigation

Table 4.12-4. Summary of Potential Water Resources Impacts (continued)

Alternative	Municipal Water Supply (NEPA/CEQA)	Flooding (NEPA/CEQA)	Watersheds and Surface Water Resources (NEPA/CEQA)	Groundwater Resources (NEPA CEQA)	Drainage (NEPA/CEQA)	Water Quality (NEPA/CEQA)	Groundwater Contamination (NEPA/CEQA)
SR 60 LRT Alternative ¹	Operation: Not adverse /Less than significant	Operation: Not adverse /Less than significant (FEMA flood zones along LRT alignments) Not adverse after mitigation/Less than significant after mitigation (flood control facilities and USACE flowage easement)	Operation: None	Operation: None	Operation: None	Operation: Not adverse after mitigation/Less than significant after mitigation	Operation: Not adverse/Less than significant after mitigation
Washington Boulevard LRT Alternative	Construction: Not adverse/ Less than significant	Construction: Not adverse/Less than significant Not adverse after mitigation/Less than significant after mitigation (FEMA flood zones along LRT alignment, flood control facilities)	Construction: Not adverse after mitigation/ Less than significant after mitigation	Construction: Not adverse/ Less than significant	Construction: Not adverse/ Less than significant	Construction: Not adverse after mitigation/Less than significant impacts after mitigation	Construction: Not adverse after mitigation/Less than significant after mitigation

Table 4.12-4. Summary of Potential Water Resources Impacts (continued)

Alternative	Municipal Water Supply (NEPA/CEQA)	Flooding (NEPA/CEQA)	Watersheds and Surface Water Resources (NEPA/CEQA)	Groundwater Resources (NEPA/CEQA)	Drainage (NEPA/CEQA)	Water Quality (NEPA/CEQA)	Groundwater Contamination (NEPA/CEQA)
Washington Boulevard LRT Alternative	Operation: None	Operation: Not adverse/Less than significant (USACE flowage easement) Not adverse after mitigation/Less than significant after mitigation (FEMA flood zones along LRT alignment and flood control facilities)	Operation: None	Operation: None	Operation: None	Operation: Not adverse after mitigation/Less than significant after mitigation	Operation: Not adverse after mitigation/Less than significant after mitigation
Maintenance Yards	Construction: Not adverse /Less than significant	Construction: Not adverse/Less than significant	Construction: Not adverse/ Less than significant	Construction: None	Construction: Not adverse after mitigation/ Less than significant after mitigation	Construction: Not adverse after mitigation/Less than significant after mitigation	Construction: Not adverse after mitigation /Less than significant after mitigation

Table 4.12-4. Summary of Potential Water Resources Impacts (continued)

Alternative	Municipal Water Supply (NEPA/CEQA)	Flooding (NEPA/CEQA)	Watersheds and Surface Water Resources (NEPA/CEQA)	Groundwater Resources (NEPA/CEQA)	Drainage (NEPA/CEQA)	Water Quality (NEPA/CEQA)	Groundwater Contamination (NEPA/CEQA)
Maintenance Yards	<p>Operation: Not adverse/ Less than significant</p> <p>Compliance with Metro’s Sustainability Policy would ensure no adverse effects and less than significant impacts</p>	<p>Operation: Not adverse after mitigation/Less than significant after mitigation</p>	<p>Operation: None</p>	<p>Operation: None</p>	<p>Operation: Not adverse after mitigation/ Less than significant after mitigation</p>	<p>Operation: Not adverse after mitigation/Less than significant after mitigation</p>	<p>Operation: Not adverse after mitigation/Less than significant after mitigation</p>

¹ Results are for both the SR 60 LRT Alternative and the SR 60 LRT North Side Design Variation.

Operational Impacts

Operation of the No Build Alternative would not impact groundwater resources, water quality, flooding, hydrology, or water supply. However, under the No Build Alternative there would be less potential for the transit system to replace automobile trips and associated potential reduction in roadway pollutants.

4.12.3.1.2 Mitigation Measures

Mitigation measures are not required because there would be no impacts to water resources and hydrology from operation of the No Build Alternative.

4.12.3.1.3 Impacts Remaining After Mitigation

NEPA Finding

The No Build Alternative would not have adverse effects to water resources, although with fewer transit options potential reductions in roadway pollutants would not occur.

CEQA Determination

The No Build Alternative would have no impacts to water resources.

4.12.3.2 TSM Alternative

4.12.3.2.1 Impact Analysis

Construction Impacts

The minor physical modifications associated with the TSM Alternative would not result in significant or adverse effects to municipal water supplies, surface and groundwater resources, drainage infrastructure, water quality, or flooding in the project area. There would be no adverse construction-related effects under NEPA. Any construction-related impacts under the TSM Alternative would be less than significant under CEQA.

Operational Impacts

Operation of the TSM Alternative would result in negligible increases in the buildup of typical runoff contaminants that collect on streets (i.e., oil, grease, and metals). In addition, operation of new bus lines under the TSM Alternative would be

required to comply with existing water quality and stormwater permits and regulations; therefore, there would be no increase in pollutant loadings that would percolate to groundwater. Operation of the TSM Alternative would not increase municipal water use, alter storm sewer drainage infrastructure, or increase flood flows. Overall, operation of the TSM Alternative would result in no adverse effects under NEPA and no significant impacts under CEQA related to water resources, water quality, or hydrology.

4.12.3.2.2 Mitigation Measures

Mitigation measures are not required because there would be no significant impacts to water resources and hydrology from operation of the TSM Alternative.

4.12.3.2.3 Impacts Remaining After Mitigation

NEPA Finding

The TSM Alternative would not have adverse effects on water resources, although the limited increase in transit ridership would limit potential reductions in roadway pollutants.

CEQA Determination

The TSM Alternative would not have significant impacts on water resources.

4.12.3.3 SR 60 LRT Alternative

4.12.3.3.1 Impact Analysis

Construction Impacts

Municipal Water Supply

Construction activities for the SR 60 LRT Alternative (with or without the North Side Design

Flooding

FEMA-Defined Flood Zones: The majority of the SR 60 LRT Alternative (with or without the North Side Design Variation) would be constructed in FEMA-defined flood zone X. Flood zone X is defined as including areas of minimal flood risk located outside of the 100-year and 500-year floodplains. However, based on the *2011 Whittier Narrows Dam Basin Master Plan*, some portions of the SR 60 LRT Alternative alignment could be

inundated with higher frequency, as shown in Figure 4.12-3. Two areas that would be within a floodplain include the area of the proposed new station at Garfield Avenue (within a 500-year floodplain), and the area south of SR 60 between Montebello Boulevard and San Gabriel Boulevard.

In addition to FEMA-defined flood zones, the project area contains several federally-authorized flood risk reduction projects for the Los Angeles County Drainage Area (including the Whittier Narrows Dam Flood Control Basin and the Rio Hondo and San Gabriel River Channels). The Whittier Narrows Dam Flood Control Basin (the Basin) is owned by the federal government and operated and maintained by USACE. The primary purpose of the Basin is flood risk management and its secondary purpose is recreation in the public interest.

Executive Order 11988 Compliance: 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. In cases where construction would intersect with the floodplain, compliance with Executive Order 11988 would be required. Furthermore, construction activities would comply with all federal and local floodplain regulations, including applicable NFIP and ER regulations.

In compliance with Executive Order 11988 and ER-1165-2-26, an analysis of the SR 60 LRT Alternative was conducted to determine if there is a practicable alternative to development within the floodplain; this analysis is included as Attachments 1 and 2 to Appendix W of this EIR. The analysis built upon the original Alternatives Analysis conducted for the project as a whole and considered locational advantage, functional need, and the needs and welfare of the people who would benefit from the project. It was determined that there are no practicable alternatives that do not include locating transit structures within a

floodplain (e.g. the Washington Boulevard LRT Alternative also crosses floodplains).

The SR 60 LRT Alternative is not anticipated to induce development in the floodplain; rather, it connects existing communities that are currently underserved by public transit. The elevated LRT through the Whittier Narrows Dam Flood Control Basin may also provide a transportation alternative if floodwaters result in the closure of SR 60 Freeway.

Construction within the Whittier Narrows Dam Flood Control Basin

Based on the analysis of flood inundation within Whittier Narrows, construction of the SR 60 LRT Alternative could be affected by flooding and construction could affect floodplain functions. These effects could result in a significant impact. The primary potential impacts would include a potential loss of flood storage capacity, placement of structures and construction equipment that could impede or redirect flows, potential water quality impacts from contact of flood waters with construction equipment or hazardous materials, and potential health and safety impacts if flood waters strand workers. The selection of an elevated LRT would minimize potential impacts to the maximum extent practicable. Mitigation would be implemented to comply with the eight-step decision-making process under Executive Order 11988. With implementation of mitigation, there would be no adverse effects under NEPA and less than significant impacts under CEQA.

Construction of the SR 60 LRT Alternative in the SR 60 ROW through the Whittier Narrows Dam Flood Control Basin and placement of LRT columns in the Basin would be modifications of the flood risk reduction structure described above. The proposed project would be considered a modification beyond that required for normal operation and maintenance of the flood control basin, and would require review and approval under Section 14 of the RHA (33 U.S.C. § 408 [Section 408]).

Based on coordination with USACE, the locations of the support columns associated with the SR 60 LRT Alternative alignment are generally acceptable in terms of avoiding impacts to flows draining into the Whittier Narrows Reservoir, except in the vicinity of the Rio Hondo channel. Hydraulic modeling of the Rio Hondo channel in the vicinity of the proposed SR 60 LRT Alternative alignment was conducted using the USACE Hydrologic Engineering Center River Analysis Software (HEC-RAS). The purpose of this analysis was to determine if the placement of support columns for the SR 60 LRT Alternative crossing over the Rio Hondo would obstruct or otherwise adversely affect flows through the channel (CDM Smith/AECOM 2013). Model results indicate the water surface elevation at bankfull discharge is 212 feet, which is below the bottom of the proposed SR 60 LRT Alternative support columns on the east and west banks (with elevations of 214 feet and 222 feet, respectively). Therefore, the proposed support columns would have no impact on the conveyance of flows through the SR 60 Freeway crossing and Rio Hondo channel under a bankfull discharge scenario. In addition, the project would be designed to allow flood flows to move within the Basin as they do under existing conditions.

Approval of modifications to the flood control structures for construction of the proposed Santa Anita Avenue station would require a risk analysis to evaluate potential impacts to the hydrologic and hydraulic functioning of the flood control system. This analysis would be completed as part of the Section 408 permit application submittal, and would include a technical analysis of potential impacts to the flood control basin as well as system-wide impacts.

In addition, any proposed modification must show that it is not injurious to the public interest and will not impair the usefulness of the flood control facility. Development within flood control basins and flood control facilities must not reduce flood storage capacity and must not impede or redirect flood flows.

The proposed Santa Anita Avenue station and park and ride facility would be located in the flood control basin of Whittier Narrows on elevated platforms and elevated structures supported by columns similar to those supporting the LRT guideway (refer to Appendix HH, Conceptual Engineering Drawings, for a conceptual drawing of the Santa Anita Avenue station). Compensatory mitigation would be required for the potential loss of flood storage capacity at Whittier Narrows, and the structure would be designed so it does not impede the flow of floodwaters in any direction. In total, the columns associated with the LRT track, the Santa Anita Avenue station, and the associated park and ride facility would result in the loss of approximately 83 cubic yards of volume of Basin storage capacity. This would have the potential to change the total water level rise in the Basin by 0.02 inches if the entire Basin were to be inundated. Replacement of the lost 83 cubic yards of storage capacity would offset any potential impacts associated with water level rises during Basin inundation. With implementation of mitigation, there would be no adverse effects under NEPA. Impacts under CEQA would be less than significant.

In addition, to limit potential impacts from floodwaters, buildings and all of the structures' electrical and other systems would be elevated above the base flood elevation level and parking would be allowed only on the second floor and above. Storage of materials or objects that could float or be moved by floodwaters would not be allowed on the lowest levels. Thus, there would be no adverse effects under NEPA and flood impacts to structures would be less than significant under CEQA.

Construction within the Flowage Easement for the Proposed Santa Anita Avenue Station:

In the vicinity of the proposed Santa Anita Avenue station, which is located within Whittier Narrows, USACE owns seven acres of the 28-acre area to the east of Santa Anita Avenue and maintains a flowage easement over the remaining 21 privately-owned acres. This area could be inundated during a

100-year flood (USACE 2011); therefore, there would be a risk to the proposed station and any associated structures from flooding in this area. There would also be a risk to the functions of the floodplain and flood control basin in this area. The easement prohibits the construction of habitable structures and limits what may be stored in areas that could be inundated.

Based on the analysis included in Attachment 1 and 2 to Appendix W of this EIR, there is no practicable alternative to locating the Santa Anita Avenue station within the designated Inactive and/or Future Recreation and Easement Lands areas. In addition to the benefits provided by enhanced transit connectivity to nearby communities and activity centers, various environmental and constructability elements constrain the station location, including the proximity to sensitive parcels (schools and residences) that would require acquisition and displacement if the proposed station were relocated.

USACE Policy Guidance Letter No. 32: Under USACE Policy Guidance Letter No. 32, the USACE evaluates land development proposals within flowage easements such as the one in which the proposed Santa Anita Avenue station would be located. The two main criteria for evaluating the approval of structures on flowage easement lands are compatibility with project operations and compatibility with floodplain management. Construction of the Santa Anita Avenue station could result in incompatibility as defined by Policy Guidance Letter No. 32, which would result in a significant impact. Mitigation would be implemented to ensure compliance with USACE policies for the use of flowage easement lands, which include designing the station so that no parking or storage would be located on the ground level, and so that floodwaters could freely flow under and through the structure, as well as approval from all landowners for any construction in this area. With mitigation, there would be no adverse effects to the flowage easement lands under NEPA and impacts would be less than significant under CEQA.

Corps of Engineers Regulation 1110-2-1: In addition to USACE's Policy Guidance Letter, land development in USACE flood control basins is governed by the South Pacific Division (SPD), Corps of Engineers Regulation 1110-2-1. As discussed above, the Whittier Narrows Dam Flood Control Basin, Rio Hondo, and San Gabriel Rivers all serve as flood risk management basins in the project area. USACE has the responsibility to ensure that the flood control project purposes are not compromised, that the public is not endangered, and that natural and cultural resources associated with flood control project lands are not harmed.

Construction of the Santa Anita Avenue station could conflict with flood control project purposes, which would be a significant impact. Mitigation would be required to ensure compliance with Regulation 1110-2-1. With mitigation, there would be no adverse effects to the flood control project area under NEPA and impacts would be less than significant under CEQA.

Maintenance Yards: The majority of the proposed maintenance yard at the Mission Junction rail facility would be located in FEMA-defined flood zone X. As shown on Figure 4.12-4, the northwest corner of this maintenance yard location is in flood zone AE, a 100-year flood zone with defined base flood elevations. Construction activities in this area would be temporary and would not impede or redirect flood flows.

Employee parking and shop areas are planned for the area of the maintenance yard in flood zone AE. Construction in this area would comply with NFIP regulations (44 CFR 59-65) and Metro would ensure that all new construction would be properly designed and adequately anchored, constructed with materials resistant to flood damage, and constructed with equipment and other service facilities that are designed or located to prevent water from entering components during flood conditions. There would be no adverse effects under NEPA. Impacts would be less than significant under CEQA.

Watersheds and Surface Water Resources

The impervious surface added by construction of the columns in the Whittier Narrows Dam Flood Control Basin, as well as the proposed station east of Santa Anita Avenue and proposed TPSS, would have minimal impacts to the watershed and local surface water bodies. There would be no adverse effects under NEPA and less than significant impacts under CEQA.

New column structures supporting the aerial LRT tracks would span the Rio Hondo, and would therefore not be below the ordinary high water mark (OHWM). Thus, there would be no need for a CWA Section 404 permit from the USACE. There would be no adverse effects under NEPA. Construction of the SR 60 LRT Alternative, with or without the North Side Design Variation, would not alter the course of a river; thus, impacts under CEQA would be less than significant.

In addition, as the LACDPW manages some of the drainages through the Whittier Narrows Dam Flood Control Basin, coordination with and an encroachment permit from the LACDPW may be required for construction through this area.

Groundwater

As described above, construction of the SR 60 LRT Alternative with or without the North Side Design Variation would have negligible impacts on the amount of impervious surface area of the watersheds in the project area. Groundwater replenishment takes place primarily through the earthen bottom of the Rio Hondo in the project area and in the spreading basins associated with the Rio Hondo and San Gabriel River. Construction of the SR 60 LRT Alternative would not take place in the vicinity of the recharge basins and would not impact the recharge capabilities of these areas. In addition, construction of the SR 60 LRT Alternative would involve minimal groundwater dewatering and would not deplete local groundwater resources.

Based on future evaluation of depth to groundwater along the alignment, dewatering may be necessary

during the construction process. Groundwater encountered during construction dewatering would require testing and either on-site treatment and discharge in accordance with applicable standards, or transport to a treatment and/or disposal facility. Additional details about dewatering are provided in the Water Resources Technical Memorandum, which is incorporated as Appendix W in this Draft EIS/EIR.

There would be no adverse effects to groundwater supplies under NEPA. Construction of the SR 60 LRT Alternative, with or without the North Side Design Variation, would not substantially deplete supplies of potable groundwater, as construction dewatering would be short-term and would not extract groundwater from the main source of potable groundwater in the Central Basin, the San Pedro Formation. In addition, as there would be no substantial interference with groundwater recharge as a result of construction of the SR 60 LRT Alternative, impacts would be less than significant under CEQA.

Drainage

Two drainages are in direct proximity to where construction of the SR 60 North Side Design Variation would occur; one is located on the north side of SR 60 across from the northeast end of the OII landfill site, and the other lies along the north side of SR 60 directly west of Greenwood Avenue. The v-ditch located directly west of Greenwood Avenue is the only drainage that would have to be relocated for construction. This drainage would be relocated along the north side of the mechanically stabilized earth (MSE) wall for the SR 60 North Side Design Variation. There would be no adverse effects under NEPA. Given the relocation of the drainage in the area of construction, the existing drainage pattern would not be substantially altered in a way that would result in substantial erosion or siltation on- or off-site. Under CEQA, impacts to drainage during construction would be less than significant.

Water Quality

Construction activities have the potential to increase erosion and sedimentation around proposed construction and staging areas. Grading activities associated with construction would potentially result in a temporary increase in the amount of suspended solids running off construction sites. If a storm event were to occur, 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 order to reduce potential impacts to surface water quality during construction of the SR 60 LRT Alternative, with or without the North Side Design Variation, construction activities would comply with the following permits and regulations:

- SWRCB General Construction Permit, including preparation of the stormwater pollution prevention plan (SWPPP)
- Compliance with Los Angeles County's Standard Urban Stormwater Management Plan (SUSMP) and implementation of appropriate required construction Best Management Practices (BMPs)
- Compliance with LARWQCB's municipal stormwater NPDES permit and implementation of a program to control runoff from construction activities

Compliance with these permits as well as implementation of BMP mitigation measures listed in Section 4.12.3.3.2 would avoid adverse effects to water quality under NEPA during construction. Construction activities would not violate applicable water quality standards, substantially increase the amount of erosion or siltation on- or off-site, or otherwise substantially degrade water quality. Impacts under CEQA would be less than significant with mitigation.

During construction of the SR 60 LRT Alternative, there is the potential to encounter shallow groundwater due to clearing and grading activities, shallow excavation, or relocation of utility lines. Known and/or suspected groundwater

contamination exists in areas directly within or near the project area.

Construction of the SR 60 LRT Alternative would take place partly on an engineered slope that is part of the OII landfill site. The extent of contamination in soil at this site is uncertain, and a clay moncover is in place to control landfill contaminants. Foundation support for the aerial structure adjacent to the landfill is anticipated to encounter refuse material, and has the potential to adversely affect the quality of groundwater in the area due to toxic substances entering and polluting groundwater.

As described in the Geotechnical/Seismic/Hazardous Materials Technical Memorandum, a geotechnical investigation would be performed during preliminary design along the preferred alignment to further establish the depth and thickness of the refuse in the vicinity of the OII landfill site, and the potential to encounter hazardous materials during construction.

The Lead Agency met with USEPA to discuss geotechnical issues and hazardous materials associated with the OII landfill site. Coordination with USEPA would be ongoing during future design phases. If contaminated groundwater is encountered during construction, disposal would be required to comply with WDRs set by the LARWQCB. Therefore, there would be no adverse effects under NEPA and impacts under CEQA would be less than significant with mitigation. Specific mitigation measures that would address groundwater quality are discussed in the Geotechnical/Seismic/Hazardous Materials Technical Memorandum.

Operational Impacts

Municipal Water Supply

Operation of the SR 60 LRT Alternative, with or without the North Side Design Variation, would result in a minimal increase in the use of municipal water supply resources. While no public restrooms would be located at the proposed stations or at the park and ride facilities along the SR 60 LRT Alternative alignment, there would be employee

restrooms at the proposed maintenance yard. Specific water use and water supply would be reconfirmed during final design of the project.

Potential water use related to operation of the SR 60 LRT Alternative, proposed stations, park and ride facilities, and the maintenance yard would be in compliance with Metro's Sustainability Policy as described in Appendix W, Water Resources Technical Memorandum. There would be no adverse effects under NEPA and impacts under CEQA would be less than significant.

Flooding

Small portions of the SR 60 LRT Alternative, with or without the North Side Design Variation, would be constructed near areas mapped by FEMA as 500-year floodplain areas (i.e., the proposed Garfield Avenue station). In addition, some portions of the SR 60 LRT Alternative alignment within Whittier Narrows Dam Flood Control Basin could be inundated during 10-, 50-, or 100-year flood events (USACE 2011). During operation of the Santa Anita Avenue station, it is possible that commuters or their cars could become stranded in the parking structure, or transit patrons could be unable to disembark from the LRT at the station. Metro's Procedures Plan, which outlines procedures to follow when bypassing a station, would be used to assist commuters in the event of a flood that reaches the station. Compliance with federal floodplain regulations as well as implementation of a drainage control plan (described in Section 4.12.3.3.2) would minimize and avoid adverse effects under NEPA. Operation of the SR 60 LRT Alternative, with or without the North Side Design Variation, would not expose people to a significant risk of loss, injury, or death involving flooding; thus, impacts under CEQA would be less than significant.

Operation of the SR 60 LRT Alternative could potentially provide access across Whittier Narrows for commuters in the event that the SR 60 Freeway was closed due to floods. This would result in a beneficial effect on the transportation network. There would be no adverse effects under NEPA and impacts under CEQA would be less than significant

with mitigation with regards to impacts associated with flooding.

The proposed Santa Anita Avenue station and park and ride facility would be located in the flood control basin of Whittier Narrows on elevated platforms and elevated structures supported by columns similar to those supporting the LRT guideway. Any proposed modification to the flood control basin must show that it is not injurious to the public interest and would not impair the usefulness of the flood control facility or reduce flood storage capacity. As indicated above, the LRT track, the Santa Anita Avenue station, and the associated park and ride facility would result in the loss of approximately 83 cubic yards of volume of Basin storage capacity, which would have the potential to change the total water level rise in the Basin by 0.02 inches if the entire Basin were to be inundated. Replacement of the lost 83 cubic yards of storage capacity would offset any potential impacts associated with water level rises during Basin inundation.

In addition, to limit potential impacts from floodwaters, buildings and all of the structure's electrical and other systems would be elevated above the base flood elevation level and parking would be allowed only on the second floor and above. Signage would also be provided prior at the entrance of the parking structure to alert riders that in the event of flooding, the Santa Anita station would be non-operational and access to the parking structure and vehicles would be prohibited. Storage of materials or objects that could float or be moved by floodwaters would not be allowed on the lowest levels. Thus, there would be no adverse effects under NEPA and flood impacts to structures would be less than significant under CEQA.

As described above under construction impacts, a portion of the proposed Mission Junction maintenance yard is in the 100-year flood zone (zone AE). Given compliance with federal NFIP regulations as well as implementation of a drainage control plan (described in Section 4.12.3.3.2); there would be no adverse operational effects under NEPA. In addition, development and

implementation of a drainage control plan (described in Section 4.12.3.3.2) would ensure that drainage would be properly conveyed away from the site so it does not induce ponding or flooding on-site or on adjacent properties. The proposed maintenance yard is located in an urbanized area composed mainly of impervious surfaces and possessing an extensive drainage infrastructure. With implementation of a drainage control plan, operation of the maintenance yard would not expose people to a significant risk of loss, injury, or death involving flooding. Impacts under CEQA would be less than significant with mitigation.

Groundwater

Operation of the SR 60 LRT Alternative, with or without the North Side Design Variation, (including proposed stations, park and ride facilities, and the Mission Junction maintenance yard) would not impact the recharge capabilities of the spreading basins. Further, operation of the SR 60 LRT Alternative would not involve groundwater dewatering and would not deplete local groundwater resources. There would be no adverse effects under NEPA and no impacts under CEQA.

Drainage

As the majority of the SR 60 LRT Alternative, with or without the North Side Design Variation, would be aerial, there would be no street widening and no conflicts with existing drainage infrastructure. There would be no operational-related impacts to drainage capacity or drainage infrastructure under the SR 60 LRT Alternative with its proposed stations and park and ride facilities. Thus, there would be no adverse effects under NEPA and no impacts under CEQA.

Proposed improvements to the maintenance yard would not substantially increase the amount of impervious cover at the yard and would not create a significant increase in runoff that would exceed the drainage and flood control capacity of the storm drain system. As the rail yard currently has aboveground structures, proposed development would not substantially impede or redirect flood flows in the long term. There would be no adverse effects under NEPA and impacts under CEQA

would be less than significant. While impacts would be less than significant, implementation of a drainage control plan (as described for flooding impacts) would ensure that drainage would be properly conveyed away from the site and does not induce ponding or flooding on-site or on adjacent properties.

Water Quality

Potential direct impacts to surface water quality include increased stormwater runoff that would contaminate local surface water resources in the project area. There would be a minimal addition of impervious surfaces as a result of construction of the SR 60 LRT Alternative, with or without the North Side Design Variation (including proposed stations, park and ride facilities, and the Mission Junction maintenance yard). While any new impervious surface has the potential to increase the concentration and accumulation of pollutants associated with stormwater runoff from transit projects (e.g., oil and grease), the project area is already mostly covered by impervious surfaces.

Additionally, placement of the aerial structure within the SR 60 embankment would minimize the addition of impervious materials. These facts, combined with the mitigation described in Section 4.12.3.3.2, would result in no adverse effects to water quality under NEPA. In order to protect water quality, operation of the SR 60 LRT Alternative, with or without the North Side Design Variation, would comply with applicable NPDES permits and permanent treatment and post-construction BMPs (described under Section 4.12.3.3.2). BMPs would minimize and treat potential runoff to conditions that comply with permit limits. Operation of the SR 60 LRT Alternative, with or without the North Side Design Variation (including proposed stations, park and ride facilities, and the Mission Junction maintenance yard) would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff. Therefore, there would be no adverse effects under NEPA and impacts would be less than significant with mitigation under CEQA. Indirect impacts to water quality associated with

long-term operation of the SR 60 LRT Alternative, with or without the North Side Design Variation, would be similar to direct impacts but would occur later. Indirect impacts would be related to the release of pollutants such as heavy metals and petroleum hydrocarbons during operation of the trains. If such pollutants were released onto the ground during operation, they would travel through stormwater runoff and reach surface water resources in the project area, resulting in negative impacts to surface water quality. Following compliance with post-construction BMPs, as part of the SWRCB's NPDES permit, there would be no adverse effects under NEPA. Potential long-term indirect impacts to water quality would be less than significant with mitigation under CEQA. Post-construction BMPs are described in more detail in Section 4.12.3.3.2 and in Appendix W, Water Resources Technical Memorandum.

As discussed in Chapter 3, Transportation Impacts and Mitigation (Section 3.3), operation of the SR 60 LRT Alternative would likely decrease annual vehicle miles traveled (VMT) of personal automobiles through the project area. An overall reduction in VMT would decrease the primary pollutants associated with all types of transportation operations such as heavy metals, solvents, and petroleum hydrocarbons. This would be an indirect beneficial effect under NEPA and an indirect beneficial impact under CEQA.

Similar to surface water quality impacts, compliance with applicable NPDES permit requirements and implementation of applicable mitigation measures would limit the percolation of polluted runoff to groundwater underlying the project area. There would be no adverse effects under NEPA. The impact would be less than significant with mitigation under CEQA.

4.12.3.3.2 Mitigation Measures

Construction Mitigation Measures

The following mitigation measures would be implemented to reduce construction impacts discussed in Section 4.12.3.3.1.

Flooding

- 4.12-i. Construction of the SR 60 LRT Alternative in the SR 60 ROW through Whittier Narrows Dam Flood Control Basin and placement of LRT columns in the flood control basin as well as construction of the proposed Santa Anita Avenue station would be modifications of the flood damage reduction structure. Approval of modifications to flood control structures would require additional coordination with USACE. Metro would submit a Section 408 permit application to USACE and would include a technical analysis of the potential impacts to the flood control basin. This would include completion of the eight-step decision-making process under Executive Order 11988 for construction within the 100-year floodplain, as well as completion of an evaluation required under Regulation 1000-2-1 for construction within flood control basins. In addition, an evaluation would be completed as required in compliance with USACE Policy Guidance Letter No. 32 for construction on flowage easement land (at the proposed Santa Anita Avenue station). Based on these evaluations, the SR 60 LRT Alternative construction designs would incorporate all required measures related to being located within a flood control basin which could include, but are not limited to, the following:
- Buildings that contain utilities, records, and/or equipment shall either be flood-proofed; or
 - Development of contingency plans for evacuation of moveable items before floods.
- 4.12-ii. To compensate for potential loss of flood storage capacity or alteration of flood flow direction and velocity due to placement of LRT columns in USACE and LACDPW flood control facilities, Metro would provide

83 cubic yards of compensatory mitigation to replace lost storage capacity. Compensatory mitigation for flood storage impacts would, at a minimum, replace any lost flood capacity. In addition, the Santa Anita Avenue station would be designed so that there would be no parking or storage located on the ground level and so that floodwaters could freely flow under and through the structure. In general, mitigation can occur at or below the elevation of impact. 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 would comply with USACE drainage requirements.

- 4.12-iii Metro would ensure that construction of the portion of the SR 60 LRT Alternative within the Whittier Narrows Flood Control Basin, would be in compliance with all applicable USACE Reservoir Regulations, which could include but not be limited to preparation of an emergency evacuation plan, balanced cut and fill to retain basin storage, and limitations based upon rainy season requirements.

Water Quality

- 4.12-iv. In compliance with the SWRCB's General Construction Permit (Order #2009-0009-DWQ), Metro would prepare a SWPPP that would specify properly designed, centralized storage areas that would keep these materials out of the rain. Spill cleanup materials (e.g., rags, absorbent materials, and secondary containment) would be kept at the work site when handling materials. Metro would ensure that site supervisors and workers have knowledge of the SWPPP. Therefore, site supervisors would conduct regular meetings to discuss pollution prevention. The frequency of such meetings and the personnel required to attend would be specified in the SWPPP.

- 4.12-v. The SWPPP would also specify a monitoring program to be implemented by the construction site supervisor and Metro and would include both dry and wet weather inspections. City personnel from each applicable jurisdiction would also conduct regular inspections to ensure compliance with the SWPPP.

- 4.12-vi. Metro would oversee implementation of BMPs designed to reduce erosion of exposed soil. These 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 grading is performed during the rainy season, as disturbed soil can be exposed to rainfall and storm runoff. If grading activities must take place during the rainy season, the BMPs selected would focus on erosion control and keeping sediment in place. End-of-pipe 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 sediment. Additional sources of information regarding BMPs include the California Storm Water Municipal and Construction Activity BMP Handbooks, as well as the California Department of Transportation's (Caltrans) *Storm Water Quality Handbooks, Project Planning and Design Guide* (2003).

- 4.12-vii. As required under the NPDES MS4 permit, specific categories of projects in jurisdictions covered by the permit must comply with the SUSMP. Metro would prepare a SUSMP that describes necessary BMPs which must be incorporated into design plans for specific categories of development and redevelopment. The proposed alternatives require compliance with the SUSMP under project category seven: parking lot 5,000 square feet or

more of surface area or with 25 or more parking spaces.

- 4.12-viii. The Los Angeles County Building and Safety Division determines compliance of the proposed alternatives with the SUSMP through the incorporation of BMPs in drainage and grading plans. Prior to issuance of any grading or building permits, the County Building and Safety Division must approve the BMPs. 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 include:

- Oil/water separators;
- Catch basin inserts;
- Storm drain inserts;
- Media filtration; and/or
- Catch basin screens.

- 4.12-ix. LARWQCB's municipal stormwater NPDES permit (Order No. 01-182 and NPDES No. CAS004001) specifies that permittees must implement a program to control runoff from construction activity. As part of this, an erosion and sediment control plan would be prepared and established by Metro prior to the initiation of construction activities. Ultimately approved by the LARWQCB, the plan would include BMPs such as the following measures as appropriate:

- 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 sediments;

- Use of downdrains or chutes to carry runoff from the top of a slope to the bottom; and
- Control of the use of water for irrigation so as to avoid off-site runoff.

- 4.12-x. If contaminated groundwater is encountered during construction, the contractor would stop work in the vicinity, cordon off the area, contact the appropriate hazardous waste coordinator and maintenance hazardous spill coordinator at Metro, and immediately notify the Certified Unified Program Agencies (County of Los Angeles Fire Department and LARWQCB) responsible for hazardous materials and wastes. Through coordination with LARWQCB, an investigation and remediation plan would be developed in order to protect public health and the environment. The contractor would properly treat or dispose of any hazardous or toxic materials according to local, state, and federal regulations.

Operational Mitigation Measures

The following mitigation measures would be implemented to reduce operational impacts discussed in Section 4.12.3.3.1.

- 4.12-xi. To compensate for potential effects to users of the transit system in the event of a flood, Metro's Procedures Plan would be executed to close the Santa Anita station and assist commuters in the event of a flood that reaches the station.
- 4.12-xii. A drainage control plan would be developed by Metro during project design to properly convey drainage from the project area and avoid ponding on adjacent properties. The flood capacity of existing drainage or water conveyance features would not be reduced in a way that would cause ponding or flooding during storms. Implementation of this plan would protect

against localized flooding impacts during operation of the SR 60 LRT Alternative (with or without the North Side Design Variation).

4.12-xiii. The following permanent treatment/post-construction BMPs would be incorporated by Metro into the proposed project where needed or necessary (each of the measures below is explained in detail in Section 6.0 of Appendix W, Water Resources Technical Memorandum):

- Extended/dry detention basins or underground detention tanks;
- Infiltration basins/trenches;
- Bioretention facilities;
- Media filtration;
- Porous pavement; and
- Vegetated filter strips.

4.12.3.3.3 Impacts Remaining After Mitigation

NEPA Finding

Construction and operation of the SR 60 LRT Alternative, with or without the North Side Design Variation, would result in potential adverse effects to flooding, surface water quality, and groundwater quality. Through compliance with applicable permits and implementation of mitigation measures, no adverse effects related to water quality or flooding would occur.

CEQA Determination

Impacts to floodplains, surface and groundwater resources, and water quality would occur during construction and operation of the SR 60 LRT Alternative, with or without the North Side Design Variation (including proposed stations, park and ride facilities, and the Mission Junction maintenance facility). Impacts related to flooding and water quality during construction and operation could be significant under CEQA.

Compliance with applicable NPDES permits as well as CWA Sections 404 and 401 and RHA Section 14 (33 U.S.C. § 408), and a CDFG Lake or Streambed Alteration Agreement, would ensure that project construction and operation would protect water quality. In addition, implementation of mitigation measures related to flooding and water quality would reduce construction and operational impacts to a less than significant level. Overall, impacts from construction and operation of the SR 60 LRT Alternative would be less than significant.

4.12.3.4 Washington Boulevard LRT Alternative

4.12.3.4.1 Impact Analysis

Construction Impacts

Construction impacts from the Washington Boulevard LRT Alternative, both the aerial and at-grade options, would be similar to those described for the SR 60 LRT Alternative. The following sections describe specific impacts that would differ during construction of the Washington Boulevard LRT Alternative.

Flooding

The Washington Boulevard LRT Alternative Rosemead Boulevard at-grade crossing and San Gabriel River/I-605 at-grade crossing pass through the 500-year flood zone that stretches from the Rio Hondo east to the area of Norwalk Boulevard, as shown in Figure 4.12-3. From the crossing of the Rio Hondo to the proposed Norwalk Boulevard station, the Washington Boulevard LRT Alternative would be located in the 500-year floodplain. For the at-grade crossing option, construction would result in tracks running through the flood zone area as well as two stations, two park and ride facilities, and TPSS.

Construction of the proposed project in this area of 500-year floodplain would not result in adverse effects under Executive Order 11988.

Under the Washington Boulevard LRT Alternative, the existing support columns located inside the Rio Hondo and San Gabriel River channels (100-year flood hazard areas) may require additional reinforcement due to the proposed widening of the

existing bridges. If reinforcement of existing support columns becomes necessary, potential increases to the risk of flooding of these two channels due to an increased impediment to the channel flows could occur and could expose people or structures to a risk of flooding.

Construction of expanded columns on the bridges over the Rio Hondo and San Gabriel Rivers and associated spreading basins, would span the USACE jurisdictional limits of the rivers and would not alter the levees; therefore, a Section 408 permit would not be necessary for this part of the construction. However, expansion or reinforcement would have the potential to decrease the capacity of these areas, which would be addressed with the LCDPW. Implementation of mitigation measures (compensatory flood storage) would reduce these impacts. Overall, with mitigation, there would be no adverse effects under NEPA. Impacts under CEQA would be less than significant with mitigation.

Potential flooding impacts during construction of the Washington Boulevard LRT Alternative Rosemead Boulevard aerial crossing and San Gabriel River/I-605 aerial crossing would be similar to those described for the at-grade crossing option. The aerial crossing options would result in the placement of a smaller structure surface area in the previously described 500-year floodplain. While park and ride facilities and TPSS would be constructed in this flood zone, they would not result in adverse effects under Executive Order 11988. Reinforcement of existing columns within the Rio Hondo and San Gabriel Rivers could impede or redirect flood flows within a 100-year flood hazard area (within the Rio Hondo and San Gabriel channels) and could expose people or structures to a risk of loss or injury from flooding. However, these risks would be reduced through mitigation such as compensatory storage and a design that avoids impeding or redirecting flood flows. Therefore, with mitigation adverse effects would not occur under NEPA and impacts under CEQA would be less than significant.

As shown in Figure 4.12-4, the two maintenance yard options unique to the Washington Boulevard LRT Alternative are located in Flood Zone X. There would be no adverse effects under NEPA and no impacts under CEQA.

Watersheds and Surface Water Resources

If reinforcement of existing support columns associated with retrofitted bridges in the spreading grounds becomes necessary, this would add a minimal amount of impervious surfaces to these areas. As the spreading grounds are owned and operated by the LACDPW, a construction permit from the County would be necessary. The construction permit would dictate approaches for mitigating construction-related impacts to the spreading basins. Potential requirements of the County construction permit include:

- Conducting construction outside of the rainy season (October to April);
- Placing staging areas outside of the spreading grounds and LACDPW ROW areas; and
- Conducting all construction activities outside of the LACDPW ROW areas (including access roads).

Reinforcement of columns in the spreading grounds would require ongoing communication with the County at later stages of project design. These later stages would also determine the potential impact to water storage from construction of retrofitted columns in the spreading basins. The LACDPW would base potential mitigation on these impacts once final design is known. Mitigation would require adding recharge capacity to another area in the Central Basin. Coordination and permit approvals from LACDPW as well as compliance with potential mitigation measures, as required by the County and described in Section 4.12.3.3.2 (compensatory storage mitigation), would result in no adverse effects under NEPA and would reduce potential construction-related impacts in the watershed and the spreading grounds to less than significant with mitigation under CEQA.

The spreading basins are not considered part of the flood control structures because they are located outside of the river levees and, therefore, do not fall under Section 14 of the RHA. However, both spreading grounds have outlets back to the rivers. While the outlets are not routinely used, they have been used in emergency situations where water needs to be moved from the spreading grounds back into the rivers. Based on this hydrologic connection with the rivers, the placement of bridge columns below the OHWM in the spreading grounds would require a CWA Section 404 permit from USACE, a CWA Section 401 Water Quality Certification from LARWQCB, and approval from the LACDPW, which owns the flood control channels.

The above impacts would be the same for both the aerial and at-grade crossing options.

Groundwater

Placement of concrete columns in the spreading grounds has the potential to impact recharge and water storage capacity in the spreading grounds. The potential magnitude of these impacts would be determined during later stages of engineering design and required mitigation would be dictated by LACDPW. Compliance with LACDPW construction permit requirements would reduce potential impacts to groundwater recharge. There would be no adverse effects under NEPA. Impacts under CEQA would be less than significant with mitigation.

Aside from potential impacts at the spreading grounds, potential impacts to groundwater supplies and groundwater recharge and compliance with applicable regulations and requirements under the Washington Boulevard LRT Alternative would be similar to those described for the SR 60 LRT Alternative.

Drainage

The at-grade portion of the Washington Boulevard LRT Alternative Rosemead Boulevard at-grade crossing and San Gabriel River/I-605 at-grade crossing would be constructed in the middle of the existing street; therefore, the street would need to be widened and stormwater infrastructure would be

relocated. Relocation of drainage infrastructure would not impact the direction, flow, or capacity of the stormwater drainage system; thus, there would be no adverse effect under NEPA. Relocation of drainages at this location would not substantially alter the existing drainage pattern of the site or area; thus the impact under CEQA would be less than significant.

Under the Rosemead Boulevard aerial crossing and San Gabriel River/I-605 aerial crossing, roadways would not have to be widened and no drainage infrastructure would have to be relocated. There would be no impact to stormwater drainage from construction of the aerial crossing option.

Water Quality

Unlike the SR 60 LRT Alternative, the Washington Boulevard LRT Alternative would avoid construction near the OII landfill site where hazardous materials are known to occur within the Caltrans ROW. While construction of the Washington Boulevard LRT Alternative would not occur directly within any of the Superfund sites identified in the project area, it would likely encounter groundwater contaminated with hazardous materials from other sources. Additional data gathering and/or site-specific groundwater investigation activities would be warranted for several areas along the Washington Boulevard LRT Alternative alignment to delineate potential areas of groundwater contamination and guide construction activities. Implementation of water quality mitigation measures described in Section 4.12.3.3.2 would ensure no adverse effects under NEPA. With implementation of mitigation and continued coordination with appropriate agencies, construction would not violate any applicable water quality standards, affect the rate or change the direction of movement of existing groundwater contaminants, expand the area affected by contaminants, or otherwise substantially degrade water quality. Thus, the impact under CEQA would be less than significant after mitigation.

Operational Impacts

Operational impacts under the Washington Boulevard LRT Alternative, including both the aerial and at-grade options, would be similar to those described for the SR 60 LRT Alternative.

Potentially adverse effects and significant impacts related to flooding and water quality would be reduced to no adverse effects under NEPA and less than significant impacts under CEQA.

4.12.3.4.2 Mitigation Measures

In addition to the mitigation measures below, the mitigation measures described in Section 4.12.3.3.2 and summarized in Table ES-2, except for mitigation measures 4.12-i through 4.12-iii and 4.12-xi, would be implemented to reduce potentially adverse effects and significant impacts during construction of the Washington Boulevard LRT Alternative.

- 4.12-xiv. Should reinforcement of the existing support columns located inside the Rio Hondo and San Gabriel River channels become necessary during the final design phase of this alternative, Metro would conduct a quantitative hydraulic analysis to evaluate the flood risk. The increased flood risk, if determined to be significant, could be mitigated with, but not limited to the following options: 1) raising the height of the existing channel banks; 2) constructing a flow bypass; or 3) providing an inline or offline flood storage facility.
- 4.12-xv. To compensate for potential loss of flood storage capacity or alteration of flood flow direction and velocity due to placement of LRT structures in Rio Hondo and San Gabriel spreading basins, and potential loss due to the possible reinforcement of existing columns within the Rio Hondo and San Gabriel Rivers, Metro would provide compensatory mitigation to replace lost storage capacity. Compensatory mitigation for flood storage impacts would, at a minimum, replace any lost flood capacity. In addition, the Washington Boulevard LRT

Alternative would be designed so that floodwaters could freely flow under and through the structure in the affected areas.

4.12.3.4.3 Impacts Remaining After Mitigation

NEPA Finding

As with the SR 60 LRT Alternative, construction and operation of both the at-grade and aerial crossing options of the Washington Boulevard LRT Alternative would affect floodplains, surface and groundwater resources, and water quality. Through compliance with applicable permits and implementation of mitigation measures, no adverse effects on water resources or hydrology would occur under the Washington Boulevard LRT Alternative.

CEQA Determination

Impacts to floodplains, surface and groundwater resources, and water quality would occur during construction and operation of both the at-grade and aerial crossing options of the Washington Boulevard LRT Alternative (including proposed stations, park and ride facilities, and maintenance yard options).

Impacts related to flooding and water quality during construction and operation could be significant under CEQA. Compliance with applicable NPDES permits as well as CWA Sections 404 and 401 and RHA Section 14 (33 U.S.C. § 408), and a CDFG Lake or Streambed Alteration Agreement, would ensure that project construction and operation would protect water quality. Implementation of mitigation measures related to flooding and water quality would reduce construction and operational impacts to a less than significant level.

Overall, impacts from construction and operation of the Washington Boulevard LRT Alternative would be less than significant. Under both the at-grade crossing and aerial crossing options for the Washington Boulevard LRT Alternative, implementation of mitigation measures would ensure that these potential impacts would be less than significant.

Operation of the Washington Boulevard LRT Alternative could impact municipal water supply and surface and groundwater resources in the project area. However, compliance with applicable permits as well as implementation of mitigation

measures during operation would ensure that impacts would be less than significant under both the at-grade crossing and aerial crossing options for the Washington Boulevard LRT Alternative.