3.9 Hydrology and Water Quality

This section is based on the *Sepulveda Transit Corridor Project Water Resources Technical Report*, incorporated into this DEIR as Appendix U.

3.9.1 Regulatory and Policy Framework

This section describes federal, state, regional, and local regulations, policies, and requirements related to potential water quality and supply, flooding, and hydrology impacts. Permits may be required during construction and operation of the Sepulveda Transit Corridor Project (Project) in order to comply with applicable regulations. Where possible, it is noted whether a specific permit would be required during construction phases of the Project, 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 selected alternative. Additionally, permit needs and requirements may be determined by the contractor(s) responsible for construction.

3.9.1.1 Federal

Clean Water Act

The Clean Water Act of 1972 (CWA) establishes the basic structure for regulating discharges of pollutants into waters of the United States (U.S.) and gives the U.S. Environmental Protection Agency (EPA) the authority to implement pollution control programs such as setting wastewater standards for industries. In most states, including California, the EPA has delegated this authority to state agencies.

Clean Water Act Section 303(d)

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

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

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

state water quality management plans. Within California, TMDL implementation is achieved through regional basin plans.

TMDL Implementation Plans provide a schedule for responsible jurisdictions to implement best management practices (BMP) to comply with pollutant reduction schedules. BMPs are defined as techniques, measures, or structural controls to manage the quantity and improve the quality of stormwater runoff in the most cost-effective manner.

Clean Water Act Section 401

In the event that a proposed alternative requires permitting under the CWA Section 404 (as described in the following sections, Section 404 regulates the discharge of dredged or fill material into waters of the United States), a water quality certification is required under CWA Section 401. These regulatory requirements may be applicable during construction of the Project in the vicinity of waterways in or near the Sepulveda Transit Corridor Project (Project) Study Area, including the Los Angeles River.

In California, the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCB) are responsible for reviewing proposed projects and issuing Water Quality Certifications. The Project falls within the Los Angeles Regional Water Quality Control Board (LARWQCB) jurisdiction.

Clean Water Act Section 402: National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit process provides a regulatory mechanism for the control of point-source discharges — a municipal or industrial discharge at a specific location or pipe — to waters of the United States. Two exceptions that are also regulated under the NPDES program are 1) diffuse-source discharges caused by general construction activities of over one acre, and 2) stormwater discharges in municipal stormwater systems in which runoff is carried through a developed conveyance system to specific discharge locations.

Clean Water Act Section 404

The CWA Section 404 requires that a permit be obtained from the U.S. Army Corps of Engineers (USACE) when discharge of dredged or fill material into wetlands and waters of the United States is proposed (33 Code of Federal Regulations (CFR) 328.3(a)).

Construction that would take place in waters of the United States and which, therefore, would result in discharge of dredged or fill material into waters of the United States includes the potential crossing(s) of the Los Angeles River. Specific permitting requirements would be determined once specific construction plans and phasing are determined.

Executive Order 11988: Floodplain Management

Under Executive Order 11988, all federal agencies are directed to avoid to the extent possible long-and short-term adverse impacts associated with the occupancy and modification of floodplains. In addition, federal agencies should avoid direct or indirect support of floodplain development wherever there is a practicable alternative. The 100-year floodplain is defined as areas that will be inundated by the flood event having a 1 percent chance of being equaled or exceeded in any given year and corresponds to flood zones A, AE, AH, AO, and D on the figures provided in the *Sepulveda Transit Corridor Project Water Resources Technical Report* (Metro, 2025a).

The Federal Emergency Management Agency (FEMA) provides floodplain information to allow local jurisdictions to regulate development in and around floodplains through Flood Insurance Studies and their associated Flood Insurance Rate Maps (FIRM).

National Flood Insurance Program

In order to determine the necessity to comply with National Flood Insurance Program regulations, FEMA issues countrywide FIRMs delineating the limits of FEMA-defined flood zones throughout the county (FEMA, 2021). Flood zones are defined as follows:

- Undetermined Risk Areas: Zone D is defined as areas with possible but undetermined flood hazards. No flood hazard analysis has been conducted.
- Moderate to Low-Risk Areas: Zones B, C, and X are defined as areas outside the floodplain with a 1 percent annual chance of flooding, and no Base Flood Elevations or depths are shown within this zone.
- High Risk Areas: Zone A is defined as areas with a 1 percent annual chance of flooding; however, detailed analyses are not performed for these areas and no depths or base flood elevations are shown on FIRMs.

3.9.1.2 State

The SWRCB and the nine RWQCBs are responsible for the protection of water quality in the state. The SWRCB establishes statewide policies and regulations mandated by federal and state water quality statutes and regulations. The RWQCBs are responsible for the development, implementation, and amendment of basin plans that address regional beneficial uses, water quality characteristics, and water quality problems. The RWQCB is responsible for implementing the Porter-Cologne Water Quality Control Act (California Water Code, 1969a) discussed in the following section. The RWQCB is also responsible for issuing Water Quality Certifications pursuant to Section 401 of the CWA as previously described. The Project Study Area is within the LARWQCB jurisdiction.

All projects resulting in waste discharges, whether to land or water, are subject to Section 13263 of the California Water Code (California Water Code, 1969b). Through the mandates of this section, dischargers are required to comply with waste discharge requirements (WDR) as developed by the RWQCB. WDRs for discharges to surface waters must meet requirements for related NPDES permits.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1969 established the principal program for water quality control in California. The Act regulates discharges to surface and groundwater and directs the RWQCB to develop regional basin plans. Basin Plans: 1) designate beneficial uses for surface and ground waters; 2) set narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's Antidegradation Policy; and 3) describe implementation programs to protect all waters in the region (LARWQCB, 2014). Development of basin plans and the triennial review of these plans by the SWRCB are necessary for compliance with CWA Section 303 (40 CFR 131).

California Fish and Game Code Section 1602

Section 1602 of the California Fish and Game Code, as administered by the California Department of Fish and Wildlife (CDFW), mandates that "it is unlawful for any person to substantively divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds, without first notifying the department of such activity." Streambed alteration must be permitted by CDFW through a Lake or Streambed Alteration Agreement. CDFW defines streambeds as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life" and lakes

as “natural lakes and man-made reservoirs.” CDFW jurisdiction includes ephemeral, intermittent, and perennial watercourses, and can extend to habitats adjacent to watercourses.

According to the Lake and Streambed Alteration Notification Instructions, the Fish and Game Code Section 1602 requires any entity (defined as a person, state or local governmental agency, or public utility) to notify CDFW before beginning any activity that would do one or more of the following:

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

As previously described, waterways in the vicinity of the proposed alignments would include the Los Angeles River. Notification to CDFW would be required prior to the start of construction.

State Antidegradation Policy

In accordance with the federal Antidegradation Policy, the state policy was adopted by SWRCB to maintain high quality waters in California. This state policy restricts the degradation of surface and groundwaters. Implemented by the RWQCBs, the policy is necessary to achieve the federal CWA goals and objectives. In particular, the policy protects bodies of water where the existing water quality is higher than necessary for the protection of present and anticipated beneficial uses. Pollutants regulated under the policy can be attributed to, among other sources, industrial and municipal discharges. The policy requires that any activity that produces or may produce a waste or increased volume or concentration of waste and that discharges or proposes to discharge into high quality waters will be required to meet WDRs to control the discharge and assure that degradation of the existing water quality through pollution or nuisance will not occur (SWRCB, 1968).

State of California National Pollutant Discharge Elimination System

In accordance with CWA Section 402(p), which regulates municipal and industrial stormwater discharges under the NPDES program, SWRCB adopted an Industrial General Permit (IGP) and Construction General Permit (CGP), which are detailed in this section. The Los Angeles County Metropolitan Transportation Authority (Metro) would be responsible for compliance with both of these NPDES permits.

Amendments made to the CWA in 1987 require that stormwater associated with industrial activities that discharge either directly to surface waters or indirectly through municipal storm sewers must be regulated by an NPDES permit (Water Quality Order No. 2014-0057-DWQ, and amendments 2015-0122-DWQ and 2018-0028-DWQ [SWRCB Division of Water Quality]) (SWRCB, 2014). In order to obtain authorization for stormwater discharges associated with industrial activities under this permit, the facility operator must submit a Notice of Intent. The Project would be subject to the regulations of this NPDES permit under category 8 of the categories that require coverage under the IGP. Category 8 includes “vehicle maintenance shops, equipment cleaning operations, or airport deicing operations.” Only those portions of the facility involved in vehicle maintenance (including vehicle, rehabilitation, mechanical repairs, painting, fueling, and lubrication) would be covered under this permit.

As with the IGP, the SWRCB administers the CGP, which is applicable to all stormwater discharges associated with construction activity. In addition, the CGP includes requirements on dewatering discharge. The NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (the CGP) was adopted on September 8, 2022. The provisions of the new CGP (Order No. 2022-0057-DWQ, NPDES No. CAS000002 [SWRCB Division of Water Quality]) (SWRCB, 2022a)

became effective September 1, 2023. Order No. 2022-0057-DWQ supersedes the previous CGP (Order No. 2009-0009-DWQ).

The main objectives of the CGP are to:

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

The CGP requirements apply to any construction project that either result in the disturbance of at least one acre of land or is part of a larger common development plan. Additionally, the CGP is required for related construction or demolition activities, including clearing, grading, grubbing, or excavation, or any other activity that results in greater than one acre of land disturbance (SWRCB, 2022a).

Minimum stormwater control requirements under the permit are determined by project risk categories. Risk categories include the sediment risk factor and the receiving water risk factor. The sediment risk factor and the receiving water risk factor are combined to determine a construction site's project risk level. The project risk level governs the applicable minimum BMPs, monitoring requirements, reporting requirements, and the effluent standards used to assess monitoring data and compliance.

Once the project risk level is determined, minimum BMP requirements are specified in attachments to the CGP. BMPs are separated into five overall categories:

- Good Site Management "Housekeeping"
- Non-stormwater Management
- Erosion Control
- Sediment Controls
- Run-on and Runoff Controls

Monitoring and reporting requirements under the permit are also dependent on the project risk level. Visual monitoring of stormwater and non-stormwater discharges is required of all projects. Water quality sampling and analysis requirements increase with risk category. Monitoring is required during normal construction site hours. Rain events also trigger monitoring in the case that there is a forecast of a 50 percent or greater probability of precipitation and a quantitative precipitation forecast of one-half inch or more within a period of 24 hours.

The CGP requires that a registered Qualified Stormwater Pollution Prevention Plan (SWPPP) Developer (QSD) prepare a SWPPP, and a registered QSD, Qualified SWPPP Practitioner (QSP), and/or a properly trained and supervised QSP delegate perform inspections, sampling, and BMP implementation.

In order to obtain coverage under the CGP, the permit applicant must submit the following documents to the SWRCB:

- Notice of Intent
- Risk Assessment
- Site Map
- Stormwater Pollution Prevention Plan
- Annual Fee
- Signed Certification Statement

California Department of Transportation National Pollutant Discharge Elimination System Permit

The California Department of Transportation (Caltrans) is subject to the NPDES *Statewide Stormwater Permit and Waste Discharge Requirement*s (WDR) for the State of California Department of Transportation (Order No. 2022-0033-DWQ, NPDES No. CAS000003) (SWRCB, 2022b) that regulates the discharge of construction- and post-construction phase stormwater from Caltrans properties, facilities, and activities. The Caltrans NPDES permit applies to those portions of the Project Study Area that are under the jurisdiction of Caltrans.

Redevelopment projects within the Caltrans right-of-way (ROW) are subject to construction site BMPs and would be required to comply with the *Construction Site Best Management Practices (BMP) Manual* (Caltrans, 2017) to control and minimize the impacts of construction-related activities. The Construction Site BMP Manual incorporates the requirements of the Caltrans NPDES Statewide Stormwater Permit and the CGP. Post-construction phase stormwater from the portions of the Project under the jurisdiction of Caltrans would also be required to comply with the *Project Planning and Design Guide* (Caltrans, 2023) and related requirements in accordance with the Caltrans NPDES Statewide Stormwater Permit for incorporating treatment BMPs. In addition, the Caltrans NPDES permit includes policies and requirements for maintaining drainage systems, including culverts, to protect roadways from flooding. This includes modifications and/or removal and replacement of these systems.

In compliance with the Caltrans Statewide Stormwater Permit, the Caltrans Statewide Stormwater Management Plan addresses stormwater pollution control related to Caltrans activities, including planning, design, construction, maintenance, and operation of roadways and facilities to reduce or eliminate the discharge of pollutants to storm drain systems and receiving waters. The Statewide Stormwater Management Plan addresses discharges resulting from stormwater, as well as non-stormwater discharges, including illicit discharges, authorized non-stormwater discharges, and initial emergency response activities. The Statewide Stormwater Management Plan requires implementation of stormwater management procedures and practices including training, public education, monitoring, program evaluation, and reporting activities, in addition to the implementation of construction BMPs to reduce or eliminate pollutants from construction sites.

The *I-405 Stormwater Quality Master Plan* (Caltrans, 2008) was prepared in response to a Stipulation and Order (Case No. 93-6073-ER [JRX]) signed by the U.S. District Court on January 17, 2008, which mandates stormwater management studies to be prepared on the Caltrans District 7 drainage systems for freeway corridors situated in Los Angeles and Ventura Counties. In order to meet the Stipulation and Order, the I-405 Stormwater Quality Master Plan evaluates and identifies potential opportunities to include treatment BMPs (e.g., infiltration devices, media filters, detention devices, biofiltration strips, biofiltration swales) in the I-405 corridor.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA), adopted in 2014 (California Water Code, 2014), provides a framework for regulating groundwater in California. The intent of the law is to strengthen local groundwater management of basins most critical to the state's water needs. The SGMA requires basins to be sustainably managed by local public agencies (e.g., counties, cities, and water agencies) that become Groundwater Sustainability Agencies (GSA). The primary purpose of the GSAs is to develop and implement a groundwater sustainability plan for basins designated as high and medium priority to achieve long-term groundwater sustainability.

3.9.1.3 Regional

Los Angeles County Municipal Stormwater Permit

The LARWQCB is responsible for issuing the Los Angeles County Municipal Storm Water Permit (Order No. R4-2021-0105, NPDES No. CAS004004). The existing permit covers the Los Angeles County Flood Control District (LACFCD), the County of Los Angeles, and 85 incorporated cities within the coastal watersheds of Los Angeles County (including the cities and unincorporated county in the Project Study Area) (LARWQCB, 2021). The Los Angeles County Municipal Storm Water Permit covers the permittees for contributions to discharges of stormwater and urban runoff from Municipal Separate Storm Sewer Systems (MS4), also called storm drain systems. The discharges flow to water courses within the LACFCD and into receiving waters of the Los Angeles Region. This Order serves as WDRs pursuant to Article 4, Chapter 4, Division 7 of the California Water Code (commencing with Section 13260), in addition to Section 402 of the federal CWA and implementing regulations adopted by the EPA and Chapter 5.5, Division 7 of the Water Code (commencing with Section 13370).

The current MS4 permit imposes basic programs, or minimum control measures, which mitigate stormwater quality issues. These programs include public information and participation, industrial/commercial inspection, planning and land development, development construction, public agency activities, and illicit connection/discharge abatement (LARWQCB, 2021). For instance, the development construction program mandates the use of temporary construction BMPs. These include measures for controlling erosion, managing spills, and ensuring the safe storage of fluids. Post-construction stormwater BMPs are required for most public and private development under the planning and land development program of the Los Angeles Department of City Planning.

In addition, the current MS4 permit allows permittees to develop Watershed Management Programs (WMPs) or Enhanced Watershed Management Programs (EWMP) to implement MS4 permit requirements, including the minimum control measures previously described, through BMPs, control measures, and customized strategies targeted at the watershed level.

Watershed Management and Enhanced Watershed Management Programs

According to the most current MS4 Order No. R4-2021-0105, the ultimate goal of the WMP and EWMP is to ensure that "discharges from the Los Angeles County MS4: (i) achieve applicable water quality-based effluent limitations that implement TMDLs, (ii) do not cause or contribute to exceedances of receiving water limitations, and (iii) for non-stormwater discharges from the MS4, are not sources of pollutants to receiving waters." The WMP allows permittees to develop and customize control measures to address water quality issues within their watershed management areas. Permittees who wish to develop a WMP or EWMP need to submit an Integrated Monitoring Program or Coordinated Integrated Monitoring Program Plan to the Regional Water Board with their draft WMP or EWMP. Plans relevant to the Project Study Area include the Upper Los Angeles River Watershed's EWMP, approved in 2016, and

modified in 2017, and the Los Angeles River Upper Reach 5 Coordinated Integrated Monitoring Program, approved in 2016 (LARWQCB, 2019b). Construction and operation of the Project would be undertaken consistent with the provisions of the Upper Los Angeles River Watershed EWMP and the Los Angeles River Upper Reach 5 Coordinated Integrated Monitoring Program.

Basin Plan

The *Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan) applies to the Project Study Area (LARWQCB, 2014). The Basin Plan sets forth the regulatory water quality standards for surface waters and groundwater within the region. The water quality standards address both the designated beneficial uses for each water body and the water quality objectives to meet them. Where multiple designated beneficial uses exist, water quality standards are written to protect the most sensitive use. Also described are the implementation programs and actions necessary to meet the water quality objectives outlined in the Basin Plan.

Total Maximum Daily Loads

In accordance with the federal CWA and the state Porter-Cologne Water Quality Control Act, TMDLs have been developed and incorporated into the Basin Plan for some pollutants identified on the 303(d) list as causing contamination in the Los Angeles and Ballona Creek River Watersheds. TMDLs govern the discharge of wastewater, urban runoff, and stormwater to meet federal and state water quality standards. A TMDL "is a number that represents the assimilative capacity of a receiving water to absorb a pollutant" (LARWQCB, 2019a).

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

SWRCB's WDR Program "regulates all point source discharges of waste to land that do not require full containment or are not subject to the NPDES program" (SWRCB, 2019). This WDR allows for the discharge of water resulting from construction dewatering and dust control application that may occur as part of a project.

The WDR (LARWQCB, 1993) requires that wastewater be analyzed prior to being discharged in order to determine if it contains pollutants in excess of the applicable basin plan water quality objectives (LARWQCB, 2014). Additionally, any wastewater that might be encountered and subsequently discharged to groundwater would need to comply with applicable water quality standards.

Due to the potential for construction dewatering activities, this WDR applies to the Project.

Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2018-0125, NPDES Permit No. CAG994004)

This WDR (LARWQCB, 2018) regulates the discharge of treated or untreated groundwater generated from permanent or temporary dewatering operations, as well as other applicable wastewater discharges not specifically covered by other general or individual NPDES permits. Due to the potential for groundwater extraction and dewatering activities in Los Angeles and Ventura counties, this WDR is applicable to the Project.

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

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

3.9.1.4 Local

The following sections describe local policies (contained in general plans) and ordinances (contained in county and municipal codes) related to water resources, water quality, and floodplains for Los Angeles County and City of Los Angeles. Regulatory requirements for other cities within the Project Study Area are included in the Los Angeles County Municipal Stormwater Permit, Order No. R4-2021-0105 (LARWQCB, 2021).

County of Los Angeles

Los Angeles County Metropolitan Transportation Authority

Water Use and Conservation Policy

In addition to complying with local and regional water conservation regulations, Metro developed their own procedures dictating the use of potable water and conservation (Metro, 2009). Applicable procedures relating to water use and conservation required by Metro include:

- Procedure 2.1 – Using Potable Water for Pressure Washing Activities
  - 2.1.1 Prioritize facility locations that must be regularly cleaned using pressure washing equipment.
  - 2.1.2 If pressure washing is deemed essential, appropriate water conservation and efficiency measures must be applied.
  - 2.1.3 Conduct pressure washing activities using cost-effective water efficient equipment.
  - 2.1.4 Capture and dispose any generated wastewater to an appropriate facility.
- Procedure 2.2 – Using Potable Water for Construction
  - 2.2.1 Develop a plan for dust suppression purposes to comply with applicable environmental statutes, regulations, and guidelines.
  - 2.2.2 Use of potable water as a dust suppression agent should always be secondary and should only be used if all other dust suppression technologies are not feasible or cost-effective.
- Procedure 2.3 – New Construction Planning, Design and Construction; Existing Buildings Operations
  - 2.3.1 Use water conservation and efficiency guidelines outlined in applicable Leadership in Energy and Environmental Design reference books for all planning, procurement, design, construction, operation, and maintenance of Metro's linear and non-linear facilities.

- 2.3.2 Prepare manuals of operation, as applicable, to ensure that water efficiency and conservation technologies are adopted and maintained.

Metro Rail Design Criteria

The *Metro Rail Design Criteria* (MRDC) identify the methods to construct, maintain, and monitor the safety of fixed-rail facilities. Alternative 6 would utilize the MRDC as the basis of design. Although the MRDC would not be a required design criteria for Alternatives 1, 3, 4, and 5, an equivalent that includes all relevant design criteria related to safety would be required. Criteria and requirements included in the following MRDC sections can help provide protection for water resources and quality:

- Section 2, Environmental Considerations:
  - 2.5, Land Acquisition and Relocation: "includes criteria for acquiring properties needed to construct, maintain, protect, and operate the transit system. Property should not have contaminated structures, soil, or groundwater."
  - 2.11, Hydrology, Water Quality, and Water Efficiency: "includes criteria for management of stormwater during construction and operation phases in compliance with state and local regulations."
  - 2.11.1, Project Planning and Design: "includes criteria for designing, constructing, operating, and maintaining an efficient and sustainable transportation system following an integrated systemwide design approach."
- Section 3, Civil: "includes criteria for the design of transit system alignments, trackway subgrade, drainage, determination of rights-of-way, control of access, service roads, and relocation of any utilities."
- Section 8, Mechanical/Plumbing: "describes criteria for the design of plumbing and drainage systems serving the Los Angeles area heavy and light rail transit system passenger stations and tunnels."
- Section 10, Operations: "describes the basin system wide operating and maintenance philosophies and methodologies set forth for Metro Rail Projects."
- Section 11, Yards and Maintenance, or Maintenance and Storage Facilities (MSF): "provides requirements for MSF design" for shop, waste disposal, and other MSF facilities.
- Fire and Life Safety Criteria: describes fire and life safety protection requirements for guideway transit systems and associated facilities, including the development of Site Emergency Plans that provide responses to various typical emergencies and incidents that may occur, such as serious flooding.

The following sections, which are included in Metro's baseline specifications also offer general guidance for protection of water resources and quality:

- Section 01 35 35 – Water Pollution Control
- Section 01 57 13 – Temporary Erosion and Sedimentation Controls
- Section 01 57 19 – Temporary Environmental Control
- Section 02 71 00 – Dewatering Fluid Treatment
- Section 32 23 19 – Dewatering

Los Angeles County General Plan

The *Los Angeles County General Plan* sets specific goals and policies in relation to water resources, water quality, and flooding in the Conservation and Natural Resources Element, and the Safety Element (LA County Planning, 2024). The following are some of the policies that are relevant to the Project in unincorporated county areas. Incorporated areas are regulated by applicable city policies.

Conservation and Natural Resources Element

- Policy C/NR 5.1: Support the low impact development (LID) philosophy, which seeks to plan and design public and private development with hydrologic sensitivity, including limits to straightening and channelizing natural flow paths, removal of vegetative cover, compaction of soils, and distribution of naturalistic BMPs at regional, neighborhood, and parcel-level scales.
- Policy C/NR 5.2: Require compliance by all County departments with adopted MS4, General Construction, and point source NPDES permits.
- Policy C/NR 5.6: Minimize point and non-point source water pollution.
- Policy C/NR 5.7: Actively support the design of new and retrofit of existing infrastructure to accommodate watershed protection goals, such as roadway, railway, bridge, and other — particularly — tributary street and greenway interface points with channelized waterways.
- Policy C/NR 6.1: Support the LID philosophy, which incorporates distributed, post-construction parcel-level stormwater infiltration as part of new development.
- Policy C/NR 6.2: Protect natural groundwater recharge areas and regional spreading grounds.

Safety Element

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

Los Angeles County Code

Los Angeles County's Stormwater and Runoff Pollution Control Ordinance regulates discharges to the storm drain system, runoff management requirements, including LID requirements, and specifies penalties for violations of the ordinance within any unincorporated area covered by the NPDES municipal stormwater permit (Chapter 12.80, Parts 3-5) (Los Angeles County, 2023).

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

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

- Title 26, Chapter 1, Section 110.1, Flood Hazard: Establishes construction standards for development and establishes that development must not increase flood hazards in adjacent areas by any of the following mechanisms: increasing flood water surface elevations, deflecting flows, or increasing erosion.
- Title 22, Chapter 22.118 Flood Control: Defines permit requirements for any work that would create flood hazards. Includes regulations prohibiting the obstruction of stream or river flow during work along natural waterways, including the Los Angeles River.

County of Los Angeles Low Impact Development Ordinance and Manual

LID is a design strategy using naturalistic, on-site BMPs to lessen the impacts of development on stormwater quality and quantity. Los Angeles County's Low Impact Development Standards Ordinance provides LID standards for infrastructure projects to lessen adverse impacts of stormwater runoff, minimize pollutant loadings, minimize erosion and hydrologic impacts on natural drainage systems (Los Angeles County, 2023).

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

Los Angeles County Department of Public Works

The Los Angeles County Department of Public Works (LADPW) is responsible for planning and implementation of watershed management within the county. Watershed management plans that pertain to the Project include the *Ballona Creek Watershed Management Plan* (LADPW, 2004) and the *Los Angeles River Master Plan* (Los Angeles County and Los Angeles County Department of Public Works, 2022). The main goals of these watershed management plans are the protection and enhancement of the rivers for flood protection, recreation, and environmental services.

Los Angeles County Flood Control District - Master Drainage Plans

The Los Angeles County Flood Control District (LACFCD) is a division of the LACDPW that provides flood protection, water conservation, and recreation and aesthetic enhancement within its boundaries. The LACFCD encompasses more than 3,000 square miles and 85 cities and has jurisdiction over the vast majority of drainage infrastructure with the incorporated and unincorporated areas of the county. The LACFCD develops master drainage plans to address individual watersheds within the LACDPW's jurisdiction. The plans include proposed drainage facilities to protect upstream and downstream properties from serious damage.

Los Angeles County Comprehensive Floodplain Management Plan

The *Los Angeles County Comprehensive Floodplain Management Plan* is an important part of the County's participation in the National Flood Insurance Program (NFIP) and Community Rating System. This plan was developed to comply with federal, state, and local requirements for floodplain management planning, coordinate existing programs and plans to prioritize initiatives, and create a linkage between the floodplain management plan and established plans of Los Angeles County (LADPW, 2021).

City of Los Angeles General Plan

The *City of Los Angeles General Plan* (DCP, 2001) provides a comprehensive strategy for managing water in a more integrated, collaborative, and sustainable way through new project, program, and policy opportunities. The Implementation Strategy provides a roadmap to make the *One Water LA 2040 Plan* vision a reality (City of Los Angeles Department of Sanitation, 2018). Additional water projects, programs, or policies that are the sole responsibility of one agency, including the Los Angeles Department of Water and Power's (LADWP) aqueduct or groundwater remediation project, are contained in each agency's appropriate plans.

The City of Los Angeles has completed the *One Water LA 2040 Plan* (City of Los Angeles Department of Sanitation, 2018). The *One Water LA 2040 Plan* is a roadmap, connecting plans, ideas, and people to arrive at better and fiscally responsible water planning solutions. Collaboration is the foundation of the *One Water LA 2040 Plan* planning process. The plan identifies projects, programs and policies that will yield sustainable, long-term water supplies for the City of Los Angeles and will provide greater resiliency to drought conditions and climate change.

The *One Water LA 2040 Plan* takes a holistic and collaborative approach to consider all of the City of Los Angeles's water resources from surface water, groundwater, potable water, wastewater, recycled water, dry weather runoff, and stormwater as "One Water." Also, the plan identifies multidepartment and multi-agency integration opportunities to manage water in a more efficient, cost effective, and sustainable manner. The plan represents the City of Los Angeles's continued and improved commitment to proactively manage all its water resources and implement innovative solutions. The plan will help guide strategic decisions for integrated water projects, programs, and policies within the City of Los Angeles.

Guiding principles of the *One Water LA 2040 Plan* include the following:

- Balance environmental, economic, and societal goals by implementing affordable and equitable projects and programs that provide multiple benefits to all communities
- Improve health of local watersheds by reducing impervious cover, restoring ecosystems, decreasing pollutants in our waterways, and mitigating local flood impacts
- Improve local water supply reliability by increasing capture of stormwater, conserving potable water, and expanding water reuse
- Implement, monitor, and maintain a reliable wastewater system that safely conveys, treats, and reuses wastewater, while also reducing sewer overflows and odors

City of Los Angeles Low Impact Development Ordinance and Handbook

The City of Los Angeles Stormwater LID Ordinance (November 2011-Original Ordinance #181899, updated September 2015-Ordinance #183833, and updated April 2024-Ordinance #188125) provides LID standards for new development and redevelopment projects to help mitigate the impacts of runoff and stormwater pollution and maximize open, green, and pervious space. The purpose of the Stormwater LID Ordinance is to:

- Require the use of LID standards and practices in future developments and redevelopments to encourage the beneficial use of rainwater and urban runoff
- Reduce stormwater/urban runoff while improving water quality
- Promote rainwater harvesting

- Reduce off-site runoff and providing increased groundwater recharge
- Reduce erosion and hydrologic impacts downstream; and
- Enhance the recreational and aesthetic values in our communities.

The City of Los Angeles prepared the *Planning and Land Development Handbook for Low Impact Development* (LID Handbook) (City of Los Angeles Department of Sanitation, 2016) to comply with the requirements of the LID Ordinance. The LID Handbook identifies stormwater mitigation measures and source and treatment control BMPs for new development and redevelopment projects. The objectives of the LID Handbook are to:

- Reduce stormwater runoff and pollutant discharge
- Capture stormwater to increase groundwater recharge
- Reduce flood damage from heavy rainfall events; and
- Enhance safe and recreational environments.

Potential Permits Required

Table 3.9-1. summarizes the permits and approving agencies that may be involved in operation and construction of the Project. Final permitting requirements will be determined as the design of alternatives is completed.

Table 3.9-1. Summary of Potential Permits and Approval Agencies

Permit	Approving Agency	Necessary During Operation or Construction
Clean Water Act Section 401	State Water Resources Control Board/Regional Water Quality Control Board	Construction
Clean Water Act Section 404	U.S. Army Corps of Engineers	Construction
California Fish and Game Code Section 1602 – Lake or Streambed Alteration Agreement	California Department Fish and Wildlife	Construction
National Pollutant Discharge Elimination System General Construction	State Water Resources Control Board/Regional Water Quality Control Board	Construction
National Pollutant Discharge Elimination System General Industrial	State Water Resources Control Board/Regional Water Quality Control Board	Operation
National Pollutant Discharge Elimination System Municipal Separate Storm Sewer Systems	Los Angeles Regional Water Quality Control Board	Operation; some requirements for construction
Encroachment/Construction Permit	Los Angeles County Department of Public Works/Los Angeles County Flood Control District/City of Los Angeles	Construction; post-construction best management practices also apply to operation

Source: HTA, 2024

CWA = Clean Water Act of 1972
NPDES = National Pollutant Discharge Elimination System
U.S. = United States

3.9.2 Methodology

The evaluation of impacts to water resources involves an analysis of existing data related to hydrology, flooding, drainage, and water quality and an assessment of whether the project alternatives would substantially degrade surface water or groundwater quality; alter drainage patterns in a manner that would cause flooding, erosion, or siltation; result in exposure of people and/or property to water-related hazards; or otherwise conflict with applicable laws related to hydrology and water quality.

Permanent impacts to water resources are evaluated by estimating the conversion of pervious to impervious surfaces and the reconstruction of impervious surfaces. Conversion of pervious to impervious areas decreases infiltration, which increases the concentration and total pollutant load in stormwater runoff by increasing runoff volume and peak flow rates for the more frequent, less intense storms. Impacts related to flood hazards are evaluated by determining if components of the project alternatives are located within designated flood hazard zones, including tsunami or seiche zones.

Construction impact analysis evaluates if construction for the project alternatives would result in significant impacts related to hydrology and surface water quality, floodplains, and groundwater. Construction activities would degrade water quality by exposing stormwater to construction-related contaminants and exposed soils, construction of the river crossings would affect existing floodplains, and construction dewatering would cause impacts to groundwater resources. Analysis will address these temporary impacts as they relate to each project alternative.

3.9.2.1 CEQA Thresholds of Significance

For the purposes of the Environmental Impact Report, impacts are considered significant if the Project would:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
  - Result in substantial erosion or situation on- or off-site.
  - Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
  - Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
  - Impede or redirect flood flows.
- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

3.9.3 Existing Conditions

3.9.3.1 Project Study Area

Water Resources Study Area

The water resources study area includes surface water and groundwater resources within the Project Study Area. A variety of creeks, rivers, man-made reservoirs, and canals exist within the Project Study Area. In the northern portion of the Project Study Area, the Pacoima Wash extends to Vanowen Street between Sepulveda Boulevard and Van Nuys Boulevard. North of the Santa Monica Mountains, the Los Angeles River crosses the Project Study Area north of U.S. Highway 101 (US-101). Encino Creek is located southwest of the junction of Interstate 405 (I-405) and US-101. Located outside and south of the Project Study Area, Ballona Creek, the Centinela Creek Channel, and the Sepulveda Channel cross near State Route 90. South of the Project Study Area, the Sepulveda Channel runs along the westside of I-405 and collects water from various catch basins and transports the water to Ballona Creek. Water from Ballona Creek ultimately discharges at the Marina del Rey Harbor.

There are several reservoirs largely concentrated in the Santa Monica Mountains. The Stone Canyon Reservoir is located to the east of I-405 in the Santa Monica Mountains, 13 miles northwest of downtown Los Angeles. This reservoir provides water to 400,000 people in Pacific Palisades, the Santa Monica Mountains, and West Los Angeles. The Encino Reservoir is located west of I-405 within the Santa Monica Mountains in the City of Los Angeles Community of Encino. The Sepulveda Dam Recreation Area is located north of the I-405/US-101 interchange in the San Fernando Valley (Valley).

Watershed Setting and Local Surface Water Bodies

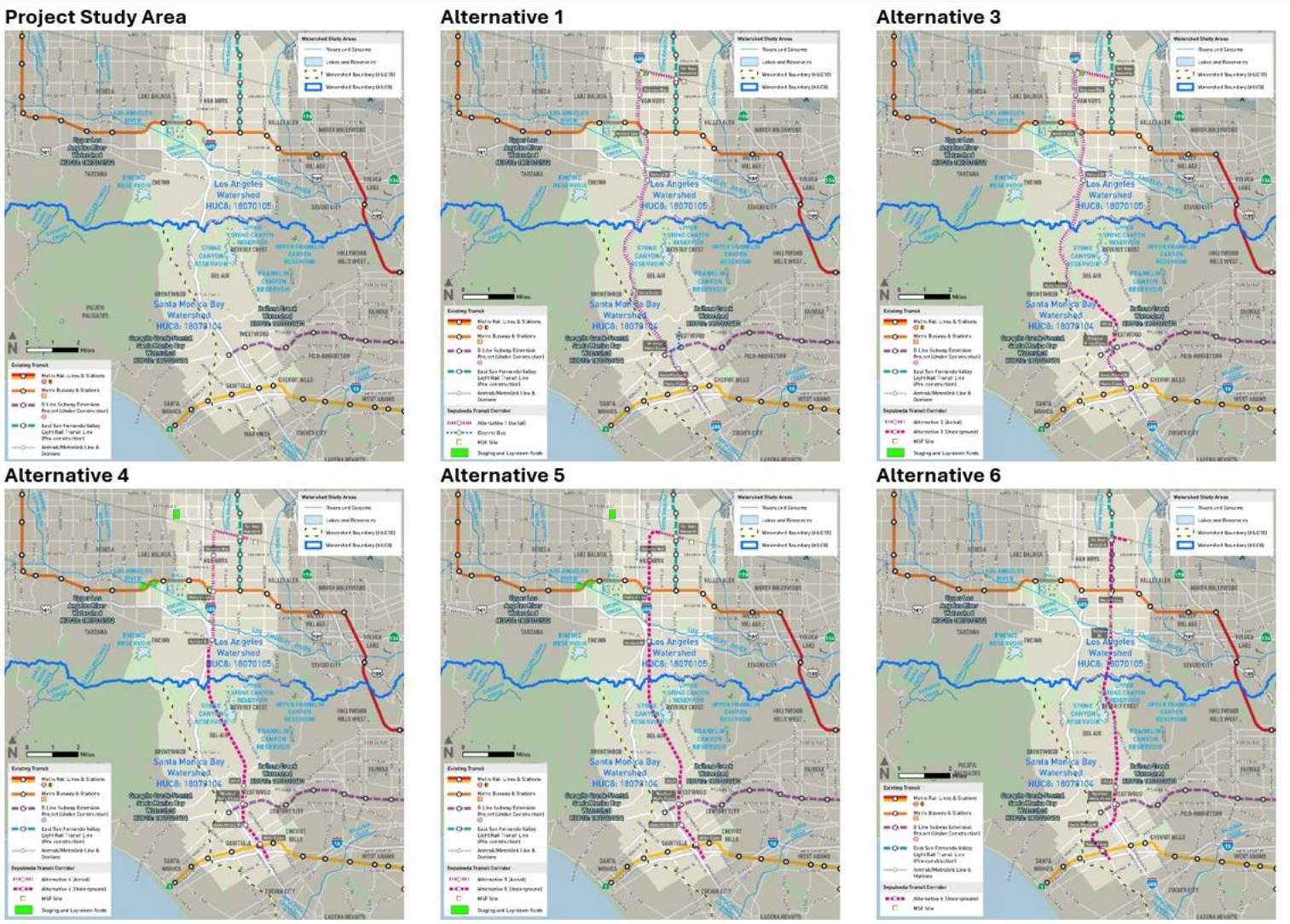
The Project Study Area is located within the Los Angeles Watershed (HUC8) in the Upper Los Angeles River Watershed (HUC10) and the Santa Monica Bay Watershed (HUC8) in the Ballona Creek Watershed (HUC10) and the Garapito Creek-Frontal Santa Monica Bay Watershed (HUC10) (Figure 3.9-1). The receiving waters within the Project Study Area include the Los Angeles River with its respective tributaries. The Los Angeles River crosses the Project Study Area roughly parallel to US-101.

Figure 3.9-2 depicts the Project Study Area watersheds with an overlay of each alternative alignment.

Figure 3.9-1. Watersheds in the Project Study Area

Source: HTA, 2024

Figure 3.9-2 Watersheds in the Project Study Area by Alternative



Source: HTA, 2024

Los Angeles Watershed

The Los Angeles Watershed covers an area of over 824 square miles from the eastern portions of the Santa Monica Mountains, Simi Hills, and the Santa Susana Mountains in the west to the San Gabriel Mountains in the east (LARWQCB, 2014). The Los Angeles River originates at the western end of the Valley at the confluence of Arroyo Calabasas and Bell Creek. The six major tributaries along the river include Tujunga Wash, Burbank Western Storm Drain, Verdugo Wash, Arroyo Seco, Rio Hondo, and Compton Creek.

The Project Study Area is located in Reach 5 of the Los Angeles River where the river flows east for approximately 16 miles along the base of the Santa Monica Mountains. In the Valley, the river runs through low density residential neighborhoods. It continues through Reseda Park and the Sepulveda Basin, a regional recreational facility with a lake, park, and wildlife area. Reach 5 of the Los Angeles River is mostly channelized with some soft-bottom stretches and acts as a transitional zone between the downstream concrete sections and the more natural and free-flowing upstream sections.

Topography throughout the coastal plain area is generally defined by gradually sloping land from the foothills of the San Gabriel Mountains to the Pacific Ocean. The coastal plain area of the Los Angeles Watershed extends from the foothills of the San Gabriel Mountains to the river mouth in Port of Long Beach, and includes communities within the Project Study Area, including Van Nuys, Encino, Bel-Air, Brentwood, and Westwood. Ground elevations range from 10,000 feet in the San Gabriel Mountains to mean sea level at the mouth of the Los Angeles River. The majority of the coastal plain is less than 1,000 feet in elevation, while the upper portion of the watershed is covered by forest and open space. Approximately 500 square miles of the watershed is highly developed with commercial, industrial, and residential uses (LARWQCB, 2014). The vast majority of land in the Los Angeles Watershed (approximately 80 percent) is developed with urban uses.

Despite extensive urbanization, the Los Angeles Watershed contains water features retaining varying degrees of natural characteristics, including Glendale Narrows, which features a rocky bottom with riprap sides, supporting riparian vegetation and recreational uses, and Compton Creek, which supports wetland habitat providing critical ecological value within the developed landscape. Both Glendale Narrows and Compton Creek are outside of the Project Study Area. In addition, the Sepulveda Flood Control Basin maintains semi-natural conditions supporting low-intensity habitat uses.

Santa Monica Bay Watershed

The Santa Monica Bay Watershed covers an area of over 414 square miles from the Santa Monica Mountains on the north from the Ventura-Los Angeles County line on the west and extending south across the Los Angeles plain to the Ballona Creek Watershed on the east (LARWQCB, 2014). South of Ballona Creek a narrow strip of wetlands between Playa del Rey and Palos Verdes drains to Santa Monica Bay. The Santa Monica Bay Watershed includes several smaller subwatershed areas, including Ballona Creek Watershed and Garapito Creek-Frontal Santa Monica Bay Watershed.

A majority of the northern portion of the Santa Monica Bay Watershed is rugged open space containing many canyons that carry runoff directly to Santa Monica Bay. Topanga and Malibu Creeks, the two largest watercourses in this area, are fed both by tributary creeks and by channelized storm drains in and near developed areas. Portions of Malibu, Agoura Hills, Westlake Village, and Los Angeles are located in the northern portion of the watershed. The mid- and southern portions of the Santa Monica Bay Watershed are more urban and contain portions of Los Angeles, Santa Monica, El Segundo, Manhattan Beach, Redondo Beach, the Palos Verdes Estates, and Rancho Palos Verdes. These areas are highly developed and contain a network of storm drains that carry runoff to the Santa Monica Bay.

Ballona Creek Watershed

The Ballona Creek Watershed is a subwatershed within the Santa Monica Bay Watershed that consists of Ballona Creek, a nine-mile-long flood protection channel that drains the Los Angeles Basin. The Ballona Creek Watershed covers approximately 130 square miles located in the western portion of the Los Angeles Basin and is made up by the Culver City, Wilshire, and Hollywood sub watersheds. The headwaters of the watershed are located in the Santa Monica Mountains to the north and the Baldwin Hills to the south. Most of the Ballona Creek drainage network has been modified into storm drains, underground culverts, and open concrete channels. Ballona Creek flows in an open concrete channel for approximately 10 miles from mid-Los Angeles through Culver City, reaching the Pacific Ocean at Playa del Rey (Marina del Rey Harbor). The Estuary portion, from Centinela Avenue to its outlet, is soft-bottomed and includes the Ballona Wetlands. A few natural channels remain in the Santa Monica Mountains and Baldwin Hills. The Sepulveda Channel, which runs along I-405 outside of the Project Study Area, is a major concrete-lined tributary to the Ballona Creek Watershed.

Garapito Creek-Frontal Santa Monica Bay Watershed

Garapito Creek-Frontal Santa Monica Bay Watershed is a subwatershed within the Santa Monica Bay Watershed and covers an area of approximately 130 square miles. The subwatershed is part of the Santa Monica Mountains and a majority of the subwatershed contains rugged mountainous terrain. This subwatershed includes Garapito Creek, which flows through Topanga State Park in the Santa Monica Mountains National Recreation Area. The Santa Monica Mountains are home to a diverse range of plant and animal species and provide critical habitats for wildlife, including several endangered species.

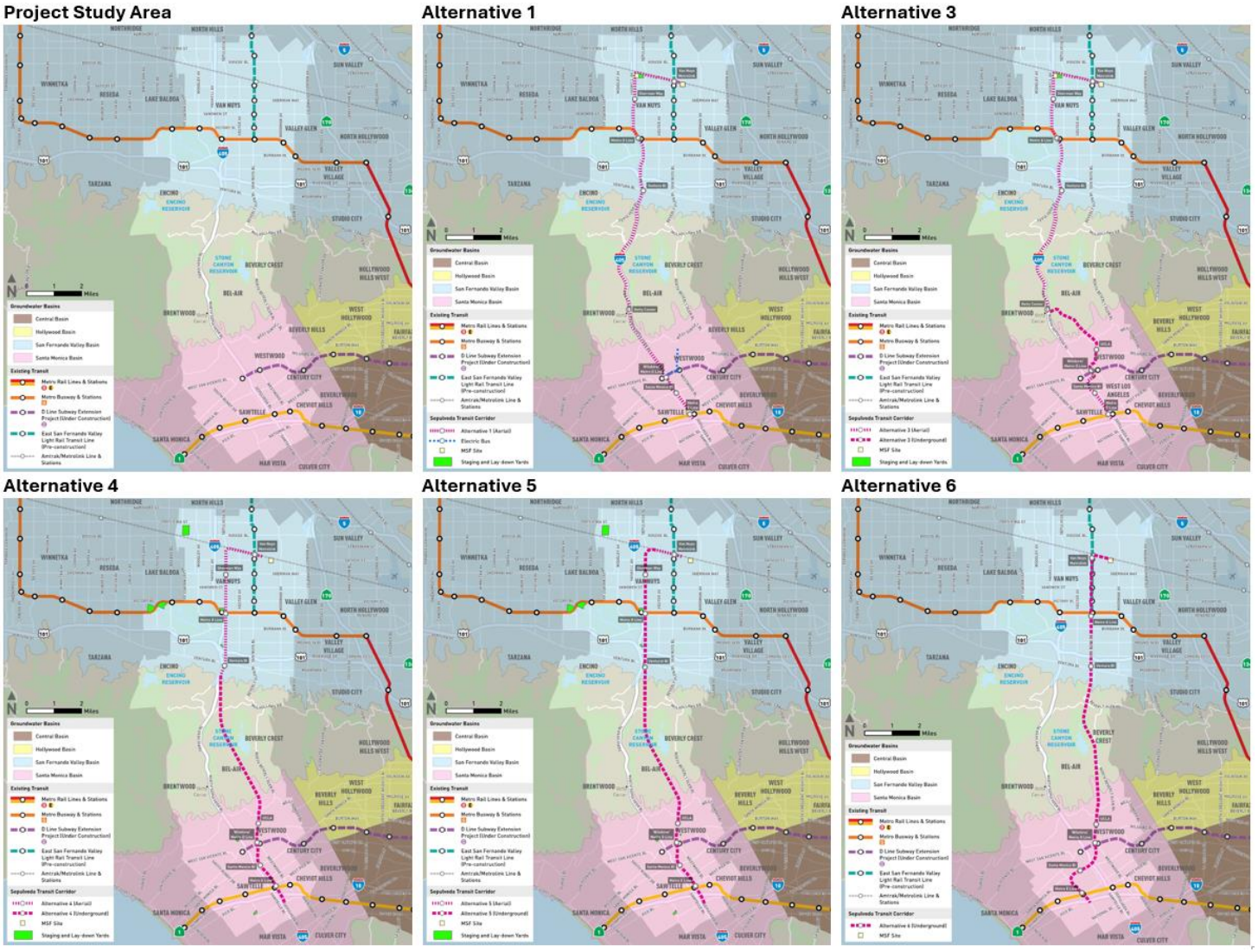
Groundwater

The Project Study Area is within the San Fernando Valley Groundwater Basin and Santa Monica Subbasin within the Coastal Plain of Los Angeles (Figure 3.9-3). The SGMA designated the Santa Monica Subbasin as medium priority, and the San Fernando Valley Groundwater Basin as very low priority based on the basin prioritization (DWR, 2021). Sources of water supply in Los Angeles County include groundwater. Figure 3.9-4 depicts the Project Study Area groundwater basins with an overlay of each Alternative alignment.

Figure 3.9-3. Groundwater Basins Underlying the Study Area

Source: HTA, 2024

Figure 3.9-4. Groundwater Basins Underlying the Study Area by Alternative



Source: HTA, 2024

Coastal Plain of Los Angeles Groundwater Basin, Santa Monica Subbasin

The Santa Monica Subbasin underlies the northwestern part of the Coastal Plain of Los Angeles Groundwater Basin. The Los Angeles Groundwater Basin spans 32,100 acres (50.2 square miles). It is bounded by impermeable rocks of the Santa Monica Mountains on the north and by the Ballona escarpment on the south. The Santa Monica Subbasin extends from the Pacific Ocean on the west to the Inglewood fault on the east. Ballona Creek is the dominant hydrologic feature and drains surface waters to the Pacific Ocean.

Replenishment of groundwater in the Santa Monica Basin is mainly by percolation of precipitation and surface runoff onto the subbasin from the Santa Monica Mountains. The Inglewood fault appears to inhibit replenishment by underflow from the Central Basin to the east, though some inflow may occur at its northern end. Total storage capacity of the Santa Monica Subbasin is estimated to be about 1,100,000 acres-feet (DWR, 2020a). The groundwater storage in the subbasin and groundwater budget is unknown.

San Fernando Valley Groundwater Basin

The San Fernando Valley Groundwater Basin surface area covers over 145,000 acres (226 square miles) and includes the water-bearing sediments beneath the San Fernando Valley, Tujunga Valley, Browns Canyon, and the alluvial areas surrounding the Verdugo Mountains near La Crescenta and Eagle Rock (DWR, 2020b). The basin is bounded on the north and northwest by the Santa Susana Mountains, on the north and northeast by the San Gabriel Mountains, on the east by the San Rafael Hills, on the south by the Santa Monica Mountains and Chalk Hills, and on the west by the Simi Hills. The Valley is drained by the Los Angeles River and its tributaries. Precipitation in the Valley ranges from 15 to 23 inches per year and averages about 17 inches.

Hydrographs show variations in water levels of 5 feet to 40 feet in the western part of the basin, a variation of about 40 feet in the southern and northern parts of the basin, and a variation of about 80 feet in the eastern part of the basin. The total storage capacity of the San Fernando Valley Groundwater Basin is 3,670,000 acres-feet. The groundwater in storage in 1998 is calculated at 3,049,000 acres-feet with an additional 621,000 acres-feet of storage space available. Though the San Fernando Valley Groundwater Basin is managed by adjudication, not enough data exists to compile a complete groundwater budget. A total of about 108,500 acres-feet of groundwater was extracted from the San Fernando Valley Groundwater Basin during the 1997-1998 water year. In addition, subsurface outflow of about 300 acres feet to the Raymond Groundwater Basin and 404 acres-feet to the Central Subbasin of the Los Angeles Coastal Plain Groundwater Basin is estimated. To balance the extraction, a total of 61,119 acres-feet of native runoff water was diverted to spreading grounds for infiltration.

Water Quality

Los Angeles Watershed

Surface water beneficial uses for Reach 5 of the Los Angeles River include municipal and domestic supply, industrial service supply, groundwater recharge, recreation, and water that supports various habitats and ecosystems.

According to the California State Water Resources Control Board 2020-2022 303(d) list of impaired water bodies, Reach 5 of the Los Angeles River and its tributaries are listed as impaired for ammonia, benthic community effect, copper, lead, nutrients (algae), oil, toxicity, and trash (SWRCB, 2022c).

Elevated bacteria indicator densities are causing impairment of the water contact recreation (REC-1)[1] beneficial use at the 303(d) listed waterbodies within the Los Angeles Watershed. Recreating in waters with elevated bacteria indicator densities has been associated with adverse health effects. Specifically, local and national epidemiological studies demonstrate a causal relationship between adverse health effects and recreational water quality, as measured by bacteria indicator densities.

Ballona Creek Watershed

Surface water beneficial uses for Reach 1 of the Ballona Creek include municipal and domestic supply, industrial service supply, groundwater recharge, recreation, and water that supports various habitats and ecosystems.

Ballona Creek and Ballona Creek Estuary are on the CWA Section 303(d) list of impaired waterbodies for copper, lead, zinc, silver, cyanide, indicator bacteria, toxicity, trash, cadmium, chlordane, dichlorodiphenyltrichloroethane (DDT), polychlorinated biphenyl (PCB), polycyclic aromatic hydrocarbons (PAH) and toxicity. Sepulveda Channel is included on the 303(d) list for copper, lead, zinc, selenium, and indicator bacteria (SWRCB, 2022c).

Elevated bacterial indicator densities are causing impairment of the REC-1 beneficial use designated for Ballona Estuary and Sepulveda Channel, limited water contact recreation designated for Ballona Creek Reach 2, and non-contact water recreation (REC-2)[2] beneficial uses of Ballona Creek Reach 1. Recreating in waters with elevated bacterial indicator densities has long been associated with adverse human health effects. Specifically, local and national epidemiological studies compel the conclusion that there is a causal relationship between adverse health effects and recreational water quality, as measured by bacterial indicator densities.

San Fernando Valley Groundwater Basin

Groundwater beneficial uses for the San Fernando Valley Groundwater Basin include water supply for municipal, domestic, industrial process, and agricultural uses. Nitrite pollution in the groundwater of the Sunland-Tujunga area within the San Fernando Valley Groundwater Basin currently precludes direct municipal uses. Since the groundwater in this area can be treated or blended (or both), it retains the municipal designation.

In the western part of the basin, calcium sulfate-bicarbonate character is dominant, and in the eastern part of the basin, calcium bicarbonate character dominates (DWR, 2020b). Total dissolved solids (TDS) range from 326 to 615 milligrams per liter (mg/L), and electrical conductivity ranges from 540 to 996 micromhos. Data from 125 public supply wells shows an average TDS content of 499 mg/L and a range from 176 to 1,160 mg/L.

A number of investigations have determined contamination of volatile organic compounds such as trichloroethylene (TCE), perchloroethylene (PCE), petroleum compounds, chloroform, nitrate, sulfate, and heavy metals. TCE, PCE and nitrate contamination occurs in the eastern part of the basin and elevated sulfate concentration occurs in the western part of the basin.

[1] REC-1 is the California State Water Resources Control Board designation for water contact recreation water bodies. These uses include, but are not limited to, swimming, wading, waterskiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.

[2] REC-2 is the California State Water Resources Control Board designation for non-contact water recreation water bodies. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

Coastal Plain of Los Angeles Groundwater Basin, Santa Monica Subbasin

Beneficial uses for Santa Monica Subbasin within the Coastal Plain of Los Angeles include water supply for municipal, domestic, industrial process, and agricultural uses.

Impairments to the Santa Monica Subbasin is unknown to the California Department of Water Resources (DWR, 2020a). Analyses of water from seven public supply wells indicate an average TDS content of 916 mg/L and a range of 729 to 1,156 mg/L.

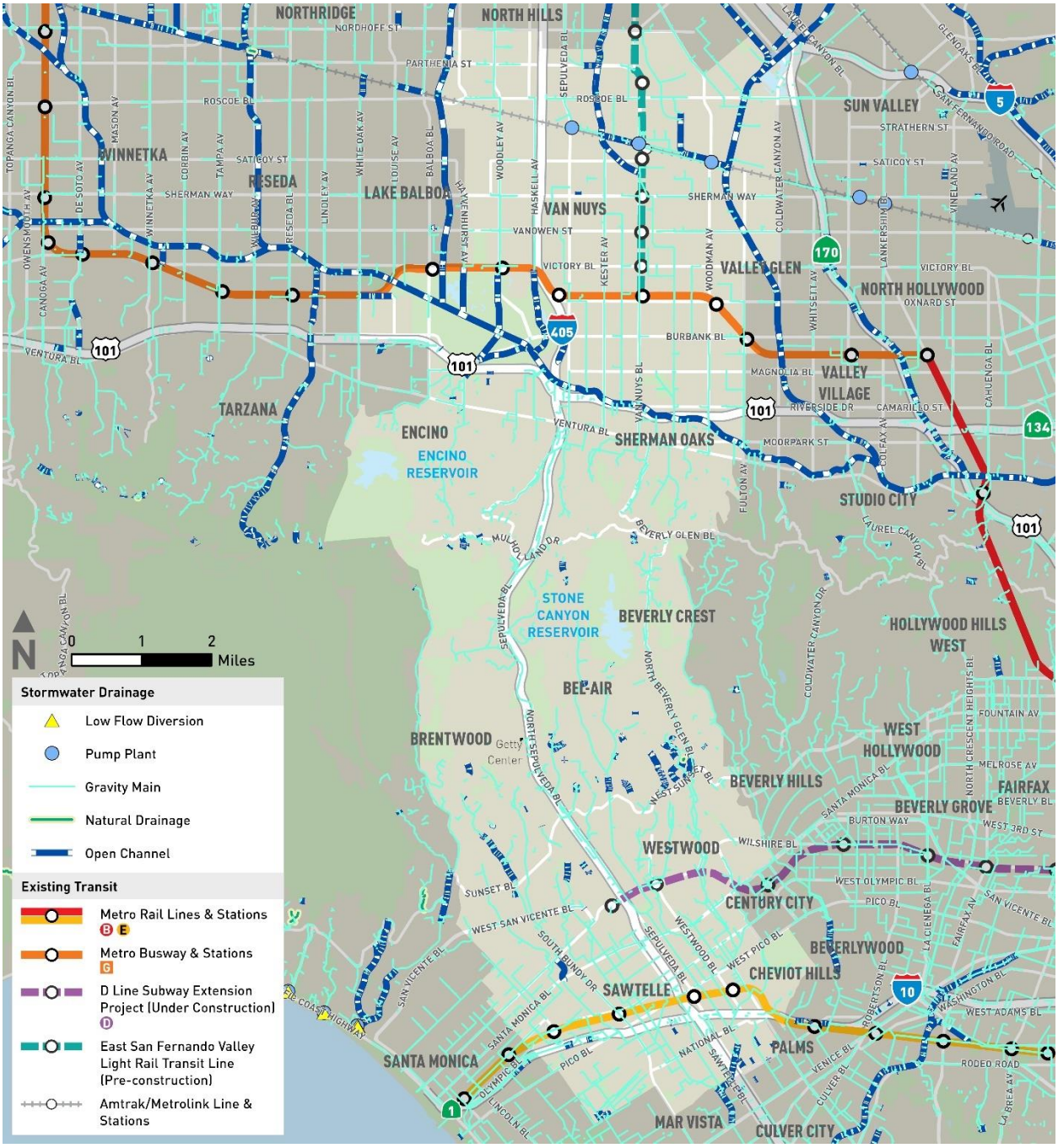
Drainage

Land in the county and cities within the Project Study Area is urbanized and largely covered with impervious surfaces associated with areas of asphalt, concrete, buildings, and other land uses that concentrate storm runoff. Stormwater and other surface water runoff are conveyed to municipal storm drains and culverts (Figure 3.9-5). Most local drainage networks are controlled by structural flood control measures. There is a large portion of the Project Study Area that is undeveloped, with pervious lands in the open space area of the Santa Monica Mountains.

The general stormwater drainage pattern in the southern portion of the Project Study Area (from Metro E Line Expo/Sepulveda Station along I-405 to the upper reach of the Ballona Creek Watershed) is from north to south. The majority of stormwater runoff within the Project Study Area drains into the LACFCD Sepulveda Channel, which starts at the upper reach of the Ballona Creek Watershed as a large diameter storm drain pipe that crosses under I-405 several times. This storm drain then transitions into a large drainage box culvert; further south of the Project Study Area, it becomes an open channel before confluencing with Ballona Creek, an LACFCD flood control channel.

The general stormwater drainage pattern in the northern portion of the Project Study Area in the Upper Los Angeles River Watershed is from south to north in developed storm drain systems. From the ridge of the Sepulveda Pass going north, the majority of Project Study Area stormwater drains to a Caltrans storm drain main that connects to an LACFCD large drainage box culvert that discharges to the Los Angeles River, an LACFCD flood control channel.

Figure 3.9-5. Existing Stormwater Drainage Infrastructure



Source: County of Los Angeles, 2020

Flooding and Inundation

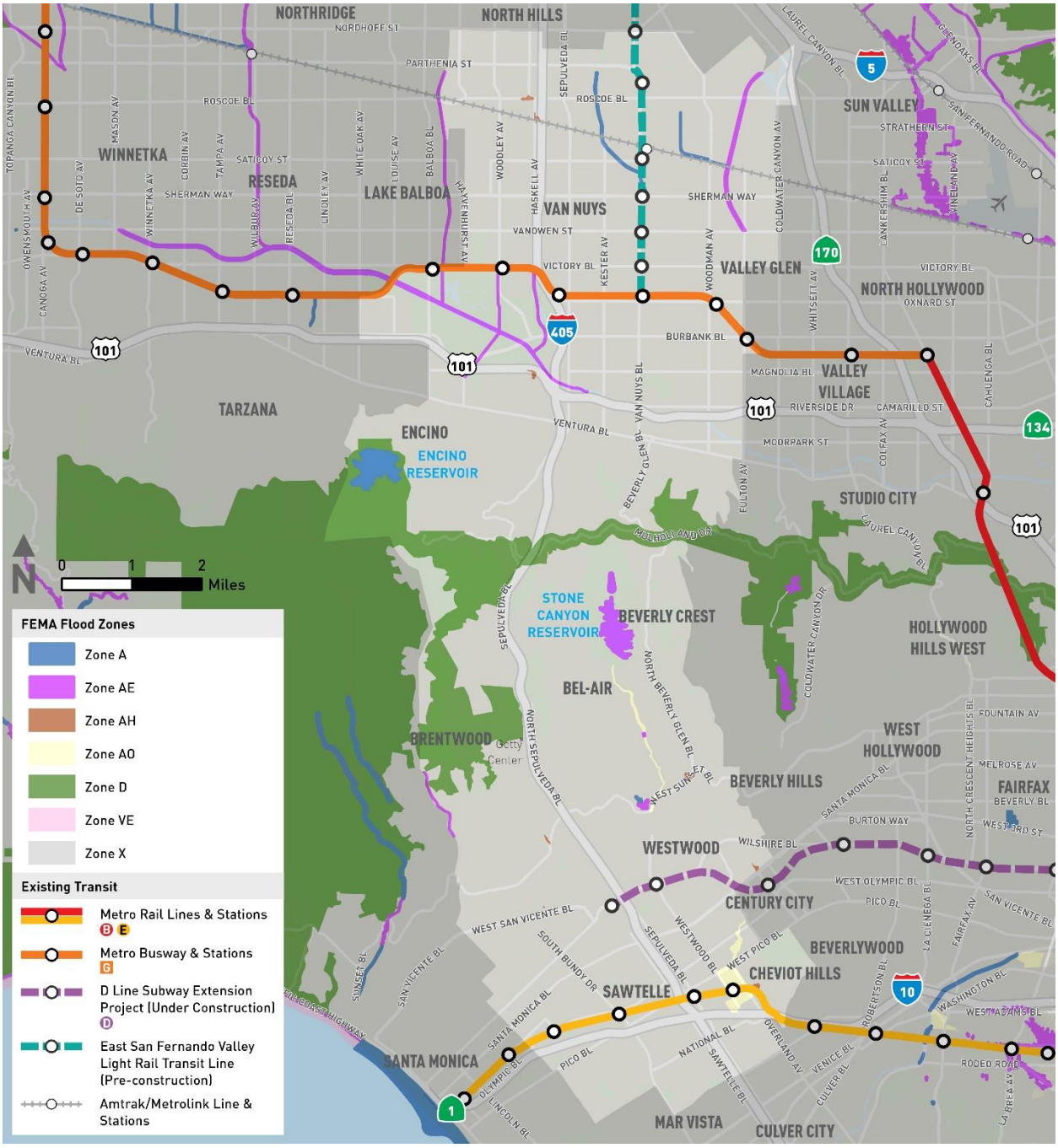
FEMA's Flood Map Service Center (FEMA, 2023) was used to identify flood hazard zones within the Project Study Area. Figure 3.9-6 illustrates all flood hazard zones within the Project Study Area. Figure 3.9-7 depicts all flood hazard zones within the Project Study Area with an overlay of each Alternative alignment. Portions of the Project Study Area are subjected to a risk of flooding under FEMA's categorizations. The ridgetop of Santa Monica Mountains, located at Mulholland Drive, and

open space areas owned by Los Angeles County are located in Zone D. Zone D indicates that there is a risk of flooding, with unknown levels of risk. The Encino Reservoir and the Stone Canyon Reservoir, located in the Santa Monica Mountains, are subject to Zones A and AE, respectively, and experience a risk of inundation with a 1 percent annual chance of flooding, alternatively known as a 100-year floodplain, since they each retain a significant amount of water. The channelized limits of the Los Angeles River, where it crosses I-405 and Sepulveda Boulevard, is also identified as Zone AE. Other small portions within the Project Study Area near Overland Avenue are within Zone AO and AH and are subject to inundation by a 1 percent annual chance of shallow flooding. Approximately 1.61 percent of the Project Study Area is within the 100-year floodplain.

Seiches are a temporary disturbance or oscillation in the water level of an enclosed body of water, usually caused by changes in atmospheric pressure. The Encino Reservoir is located approximately 2.1 miles west of the I-405 median, and the Stone Canyon Reservoir is located approximately 1.3 miles east of I-405.

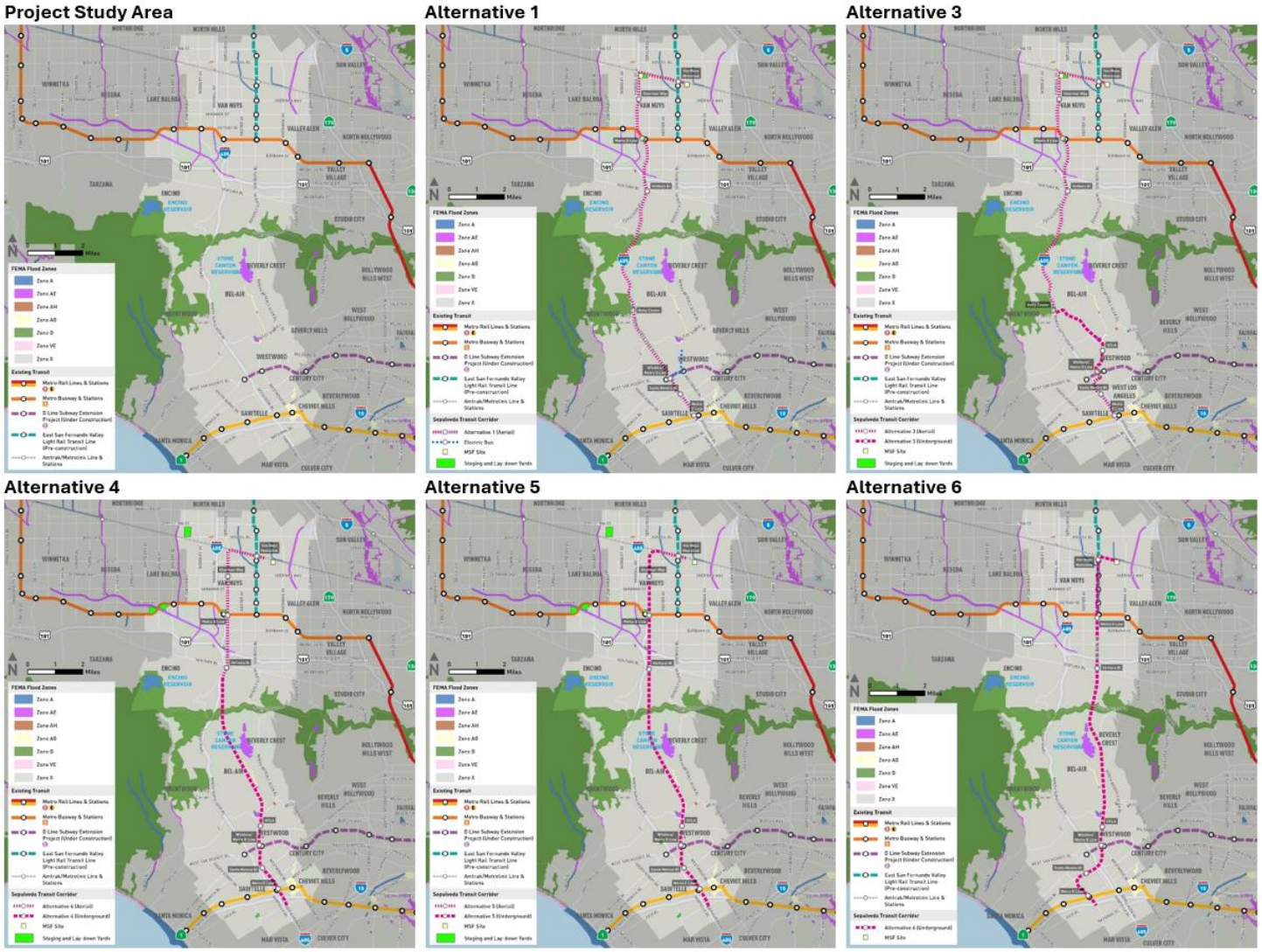
Tsunamis are large ocean waves caused by major seismic events with the potential of causing flooding in low lying coastal areas.

Figure 3.9-6. Federal Emergency Management Agency Flood Zones



Source: FEMA, 2023, HTA, 2024

Figure 3.9-7. Federal Emergency Management Agency Flood Zones by Alternative



Source: HTA, 2024

Municipal Water Supply

Within Los Angeles County, the water supply comprises a complex system made up of state agencies and local water districts operating aqueducts, reservoirs, and groundwater basins. Approximately 33 percent of the water in the county comes from local supply sources, while the remaining supply is imported from outside of the county. Due to the county's dependence on imported water supply sources and its vulnerability to drought, the county is constantly working to develop a diverse range of water resources (LA County Planning, 2024).

Local water supply sources include surface water from mountain runoff, groundwater, and recycled water. Imported sources of water supply include the Colorado River, the Bay-Delta in Northern California via the State Water Project, and the Owens Valley via the Los Angeles Aqueduct. Major water distributors of imported water used in the unincorporated county include the Metropolitan Water District of Southern California (MWD), Santa Clarita Valley Water Agency, Antelope Valley-East Kern Water Agency, Littlerock Creek Irrigation District, and the Palmdale Water District (LA County Planning, 2024).

LADPW maintains a database of groundwater supply wells (LADPW, 2019). According to this database, the majority of groundwater wells are in the Valley with three active wells underlying Van Nuys Boulevard.

LADWP is responsible for supplying, treating, and distributing water for domestic and industrial uses in a portion of the detailed Project Study Area. The LADWP serves an area of approximately 473 square miles with over 681,000 water service connections. LADWP draws its water from three main sources: the Los Angeles Aqueduct (from Eastern Sierra Nevada) (29 percent), the MWD (57 percent), groundwater (12 percent), and recycled water (2 percent) (LADWP, 2013).

3.9.4 Environmental Impacts

3.9.4.1 Impact HWQ-1: Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Project Alternatives

No Project Alternative

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

Under the No Project Alternative, the Project would not be developed and as a result any Project-related potential impacts would not occur. The only transit improvement within the Project Study Area that is reasonably foreseeable in absence of the Project would be the rerouting of Metro Line 761. Operation of the rerouted Metro Line 761 would run along existing streets and may involve new bus shelters in sidewalks.

Potential pollutants (e.g., petroleum products/lubricants, paints, solvents, and other project-related products) used during operations and maintenance of projects that are part of the No Project Alternative would contribute to water pollution if not properly dispensed, stored, or disposed.

Uncontrolled discharge of runoff carrying these potential pollutants would result in significant impacts to water quality in receiving waters such as the Los Angeles River, which would violate water quality standards and WDRs if not appropriately managed. Since the Metro Line 761 is an existing bus route that would operate on existing streets and highways and operations and maintenance of Metro Line 761 would occur at one of Metro's existing bus maintenance facilities, it is anticipated that limited changes to runoff conditions or water quality would occur.

The rerouted Metro Line 761 would not require new IGP coverage as the bus route is an existing bus route with maintenance operations already covered by Metro's IGP coverage.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts related to the violation of any water quality standards or WDRs or substantial degradation of surface or groundwater quality during operation of the No Project Alternative would be less than significant.

Construction Impacts

In absence of the Project, the only reasonably foreseeable transit improvement in the Project Study Area would involve changes to Metro Line 761. Construction, including temporary laydown yards/staging areas, associated with the No Project Alternative would be required to comply with all applicable water quality protection laws and regulations at the federal, state, regional, and local levels, as well as commonly used industry standards. These include the CWA, Porter-Cologne Water Quality Control Act, State of California Antidegradation Policies, NPDES CGP, the MS4 Permit, and the City of Los Angeles LID Ordinance. Rerouting Metro Line 761 would entail limited construction activities consisting of installation of bus stop infrastructure within the existing street right-of-way. Such construction would be required to comply with all applicable water quality protection laws and regulations.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts related to the violation of any water quality standards or WDRs or substantial degradation of surface or groundwater quality during construction of the No Project Alternative would be less than significant.

Alternative 1

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

Components that would increase the existing impervious surface area include the Metro E Line Station, Santa Monica Boulevard Station, Wilshire Boulevard/Metro D Line Station, Getty Center Station, Sherman Way Station, traction power substations (TPSS), and proposed MSFs. Additionally, freeway modifications including realignment of existing lanes, columns in the medians, new median barriers, or shoulders required to operate Alternative 1 would increase the existing impervious areas.

All of the stations would be in an aerial configuration, so the ground level area that would be impervious would be limited to the column footings, as well as vertical circulation elements such as elevators and stairs. However, because there are so many columns in proximity, as a conservative approach the analysis includes aboveground elements of these components, including the station canopies and

platforms and monorail segments between columns to calculate the total impervious area created by Alternative 1 components.

The proposed stations would not result in a significant increase in impervious surfaces because most of the land surfaces in the Project Study Area are currently developed and covered by existing impervious surfaces. The footprints of the Alternative 1 stations would be nominal when compared to the area of the watershed and groundwater basin. The Alternative 1 alignment stations would generally be in the public ROW and on impervious/paved surfaces, with the exception of the Wilshire Boulevard/Metro D Line Station, Getty Center Station, and the Sherman Way Station, which would be constructed on landscaped areas and an undeveloped hillside, respectively. Additionally, the Santa Monica Boulevard Station and the Ventura Boulevard Station would be constructed on parcels containing some existing pervious surfaces, which would be maintained. However, the TPSSs and I-405 freeway modification that would include new or relocated ramps, expanded shoulders, column locations, and retaining walls would result in a greater increase in impervious surface areas. Table 3.9-2 lists the existing impervious surface area, estimated amount of new/reconstructed impervious surfaces added by Alternative 1 components, and the estimated net impervious surface area created.

Table 3.9-2. Alternative 1: New Impervious Surface Area

Component	Existing Impervious Surface Area at Component Site (square feet)	Amount of New and Reconstructed Impervious Surface Area at Component Site (square feet)	Net Impervious Area Created by Component (square feet)
Metro E Line Station	46,023	49,037	3,014
Santa Monica Boulevard Station	13,966	39,300	25,334
Wilshire/Metro D Line Station	10,696	96,859	86,163
Getty Center Station	3,110	42,234	39,124
Ventura Boulevard Station	105,947	87,207	-18,740
Metro G Line Station	121,677	67,364	-54,313
Sherman Way Station	7,273	52,544	45,271
Van Nuys Metrolink Station	149,161	147,871	-1,290
Traction Power Substations	—	127,440	127,440
Totals	**457,853**	**709,856**	**252,003**
Interstate 405 Modifications	—	1,459,260	1,459,260

Source: LASRE, 2024

— = no data

As a result of the TPSSs and freeway modifications, pollutant runoff/loading would be expected to increase due to the increase in impervious surface area.

Operation of Alternative 1 would require routine maintenance that would be performed by the system operator. Maintenance activities associated with the transit system operation, such as train car maintenance and lubrication, would occur at each of the proposed MSF and TPSS locations for the alignment. Rail maintenance would occur along the corridor alignment. Potential pollutants (e.g., petroleum products/lubricants, metals, paints, solvents, and other Alternative 1-related products) used or generated during Alternative 1 operations and maintenance would contribute to water pollution if not properly dispensed, stored, or disposed. If not appropriately managed, uncontrolled discharge of runoff carrying these potential pollutants would result in significant impacts to water quality in

waterways, including the Pacoima Wash, Encino Creek, and the Los Angeles River, which would violate water quality standards and WDRs.

Storage and disposal of hazardous materials and waste would be conducted in accordance with all applicable federal and state regulatory requirements. As described in the *Sepulveda Transit Corridor Project Hazards and Hazardous Materials Technical Report* (Metro, 2025b), Alternative 1 would be required to reduce the potential effects of the use and storage of hazardous materials at MSF and TPSSs through the implementation of hazardous materials monitoring plans, including a hazardous materials business plan developed in accordance with California Health and Safety Code requirements.

Alternative 1 would be designed to incorporate several sustainability features, such as native landscaping, rainwater cisterns for capture and reuse, permeable surfaces, soil improvements, increased vegetation, and on-site retention, in compliance with the *Low Impact Development Standards Manual* (LADPW, 2014) and the City of Los Angeles *Planning and Land Development Handbook for Low Impact Development* (City of Los Angeles Department of Sanitation, 2016), which would serve to reduce impervious area and promote infiltration, thereby improving water quality. Alternative 1 would also comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, water quality control and/or sustainable groundwater management plans, including the Basin Plan (LARWQCB, 2014), as well as commonly used industry standards. Alternative 1 would comply with the California Department of Transportation's (Caltrans) National Pollutant Discharge Elimination System (NPDES) Statewide Stormwater Permit, the City of Los Angeles Municipal Code, the City of Los Angeles and County of Los Angeles LID Ordinance, and all other applicable regulations for all operational activities, including adherence to an approved Alternative 1-specific LID plan which would identify the BMPs for Alternative 1 operations. The types of LID BMP designs to be incorporated would be determined during the design phase. Although final design would dictate actual stormwater management aspects of Alternative 1, potential BMPs would include depressed landscape gardens for runoff retention and infiltration, permeable surfaces to reduce runoff volume, hardscape replacement with pervious or planted substitutions, bioswales or artistic water features that creatively convey runoff into planted or pervious areas, roof downspout discharges to vegetated areas, and rainwater cisterns and other on-site stormwater retention methods. These measures and practices would be incorporated at applicable component sites and would serve to promote infiltration.

The Alternative 1-specific LID plan would identify the BMPs for the Alternative 1 post-construction design (i.e., operational characteristics to control/treat runoff for the range of potential pollutants). Alternative 1 would include design elements that serve to infiltrate, capture and re-use stormwater in accordance with current LID requirements — thereby minimizing the potential for increased runoff rates and pollutant discharge. LID design features would slow (detain or retain) stormwater, which would reduce the runoff volume discharged from Alternative 1 and would decrease the peak runoff discharge velocity for design storms. Implementation of LID BMPs would offset any increases in runoff rates due to the creation of new impervious surface areas. As a result, less flow with fewer pollutants would be transported through the conveyance systems, and ultimately into surface waters, including ancillary exfiltration to the groundwater table. Additionally, natural treatment of infiltrated runoff would occur, thereby improving exfiltrated water from LID and water quality additions to the groundwater table, including treatment for potential pollutants (e.g., petroleum products/lubricants, metals, paints, solvents, and other Alternative 1-related products) used or generated during Alternative 1 operations.

Alternative 1 is anticipated to require Industrial General Permit (IGP) coverage for maintenance facilities, fueling operations, equipment cleaning/washing operations, and TPSSs. As such, an IGP SWPPP would be prepared and submitted to the SWRCB prior to operations. The IGP includes discharge

prohibitions, effluent limitations, and receiving water limitations that must be adhered to during operations. IGP SWPPP BMPs would include good housekeeping, prevention and maintenance activities, material handling and waste management, erosion and sediment controls, training, recordkeeping, and reporting of spills or releases. Other BMPs may also be employed, as appropriate, such as indoor/covered areas for maintenance, approved flammable/hazmat storage lockers for lubricants and other industrial liquids, drip/spill protection in maintenance areas and similar BMPs when conducting maintenance, dry clean-up practices, and dedicated enclosed areas for metal working, painting, and welding.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts related to the violation of any water quality standards or WDRs or substantial degradation of surface or groundwater quality during operation of Alternative 1 would be less than significant.

Construction Impacts

Construction of the Alternative 1 components would include site clearing and excavation, utility relocation, foundation construction, installation of support columns and beams, erection of stations, towers, and junctions, as well as construction of MSFs, TPSSs, roadway modification, replacement or restoration of paving, sidewalks, parking, and landscaping, and the installation of rails and vehicles. The construction activities for the modification of the freeway would include the demolition of existing pavement and structures, excavation and grading of the site, construction of the base layer, installation of retaining walls, and paving of roadways along I-405. In addition, temporary staging areas would provide necessary space for construction activities including material storage and construction equipment.

Construction activities such as demolition, excavation, and grading would temporarily expose bare soil, increasing the risk of erosion. Uncontrolled erosion and discharge of sediments and other potential pollutants, including the discharge of fill material, would affect water quality in Alternative 1 receiving waters (e.g., the Pacoima Wash, Tujunga Wash, and Los Angeles River) if not appropriately managed by proper implementation of the construction SWPPP

In addition to sediments, other pollutants including trash, concrete waste, and petroleum products, such as fuels, solvents, and lubricants, would degrade water quality and contribute to water pollution if not appropriately managed. The use of construction equipment and vehicles during the Alternative 1 construction would result in spills of vehicle-related fluids that would contribute to water pollution. Improper handling, storage, or disposal of these materials or improper cleaning and maintenance of equipment would result in accidental spills and discharges that would contribute to water pollution.

Construction activities associated with guideway column foundations would involve general earthwork and concrete work. Excavations for foundations would be performed up to 6 and 8 feet below ground surface (bgs), and piles would be installed at approximately 80 feet bgs. Groundwater levels in the Project Study Area generally range from depths of approximately 16 to 115 feet bgs (Metro, 2023), with deeper groundwater at the base of the Santa Monica Mountains and shallower groundwater south of Victory Boulevard.

Shallower groundwater occurs in the vicinity of the Santa Monica Boulevard Station, Wilshire/Metro D Line Station, Ventura Boulevard Station, and the Metro G Line Station. Therefore, because the proposed piles at these stations would be drilled to approximately 80 feet bgs, removal of nuisance groundwater that seeps into boreholes during construction may be required for pile installations. If dewatering is

required, dewatering activities would be conducted in compliance with the Los Angeles Regional Water Quality Control Board's NPDES dewatering permits, *Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties* (Order R4-2018-0125) and *Waste Discharge Requirements for Specified Discharges to Groundwater in the Santa Clara River and Los Angeles River Basins* (Order No. 93-010), as applicable. In such cases, temporary pumps and filtration systems would be used in compliance with the applicable NPDES permits. The temporary system would be required to comply with all relevant NPDES requirements related to construction and discharges from dewatering operations. Water removed from the boreholes would be containerized and analyzed to determine the proper disposal method or possible treatment and re-use on-site. The treatment and disposal of the dewatered water would occur in accordance with the requirements of NPDES Order R4-2018-0125 and Order No. 93-010, as applicable. The WDRs require that waste be analyzed prior to being discharged in order to determine if it contains pollutants in excess of the applicable Basin Plan water quality objectives. Or if possible, the dewatered water would potentially be treated and reused on-site (e.g., for dust control or cleaning equipment) rather than being disposed.

Volatile organic compounds such as TCE, PCE, petroleum compounds, chloroform, nitrate, sulfate, and heavy metals have been detected in groundwater of the San Fernando Valley groundwater basin. Although the groundwater quality in the remainder of the Project Study Area is not specifically known, it may contain elevated levels of constituents such as petroleum hydrocarbons and solvents resulting from commercial and industrial discharges, in addition to potentially elevated TDS and metals related to natural conditions. Uncontrolled discharge of groundwater carrying these potential pollutants would result in degradation of groundwater and surface water if it is not properly managed during construction activities. If groundwater containing contaminants such as VOCs, heavy metals, or petroleum hydrocarbons is encountered during dewatering activities, additional treatment or special disposal methods would be required to comply with applicable regulatory requirements and prevent contamination of receiving waters.

Alternative 1 would be required to comply with all applicable water quality protection laws and regulations at the federal, state, regional, and local levels, as well as commonly used industry standards. These include the CWA, Porter-Cologne Water Quality Control Act, State of California Antidegradation Policies, NPDES CGP, the MS4 Permit, the Caltrans NPDES Statewide Stormwater Permit, the Caltrans Construction Site BMP Manual (Caltrans, 2017), and the City of Los Angeles and County of Los Angeles LID Ordinance.

Alternative 1 would be required to comply with the CGP in effect at the time of construction. In accordance with the CGP, Alternative 1 would be required to prepare and submit a construction SWPPP, which must be submitted to the SWRCB prior to construction, and adhered to during construction. Proper implementation of the construction SWPPP would avoid potential impacts to water quality. The construction SWPPP would identify the BMPs that would be in place prior to the start of construction activities and during construction. BMP categories would include erosion control, sediment control, tracking control, wind erosion, stormwater and non-stormwater management, and materials management with regular monitoring. Although specific temporary construction-related BMPs would be selected at the time of SWPPP preparation, potential BMPs would likely include fiber rolls, bonded-fiber matrix hydroseeding, soil furrowing, water bars, and check dams for erosion control, inlet protection (sand/gravel bags and geotextiles), silt fencing, sediment traps/basins for sediment controls, soil berming around disturbed areas, and phasing of soil disturbance during the wet season (i.e., limiting widespread grading) for effectively managing erosion and pollutant discharge during significant rainfall

events. In addition, as described in the *Sepulveda Transit Corridor Project Biological Resources Environmental Impact Report Chapter*, Section 3.3.3, the SWPPP would include measures listed in PM BIO-1.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts related to the violation of any water quality standards or WDRs or substantial degradation of surface or groundwater quality during construction of Alternative 1 would be less than significant.

Alternative 3

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

Alternative 3 shares all the same components described for Alternative 1, and information pertaining to regulatory compliance to address site runoff would be the same as what is presented for Alternative 1. The operational impacts discussion for Alternative 1 presents the regulatory requirements to address stormwater discharges. Table 3.9-3 lists the estimated existing impervious surface areas, estimated amount of new and reconstructed impervious surface added by the Alternative 3 components, and the estimated net impervious surface area created. The total square feet of impervious surface areas created by Alternative 3 components differs from Alternative 1 because a portion of the Alternative 3 alignment would be underground.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts to related to the violation of any water quality standards or WDRs or substantial degradation of surface or groundwater quality during operation of Alternative 3 would be less than significant.

Table 3.9-3. Alternative 3: New Impervious Surface Area

Components	Existing Impervious Surface Area at Component Site (square feet)	Amount of New and Reconstructed Impervious Surface Area at Component Site (square feet)	Net Impervious Area Created by Component (square feet)
Metro E Line Station	46,023	49,037	3,014
Santa Monica Boulevard Station	13,966	39,300	25,334
Wilshire/Metro D Line Station	71,479	20,313	-51,166
UCLA Gateway Plaza Station	53,257	14,787	-38,470
Getty Center Station	3,110	42,234	39,124
Ventura Boulevard Station	105,947	87,207	-18,740
Metro G Line Station	121,677	67,364	-54,313
Sherman Way Station	7,273	52,544	45,271
Van Nuys Metrolink Station	149,161	147,871	-1,290
Traction Power Substations	—	137,164	137,164
Totals	**571,893**	**657,821**	**85,928**
Interstate 405 Modifications	—	1,241,460	1,241,460

Source: LASRE, 2024

— = no data

Construction Impacts

Construction of Alternative 3 includes a guideway column foundation along I-405, seven aerial rail stations, two underground rail stations, and an approximately 3.6-mile tunnel to the east of I-405. Construction of the Alternative 3 components would include site clearing and excavation, utility relocation, foundation construction, installation of support columns and beams, construction of stations, towers, junctions, and tunnels, as well as construction of MSFs, TPSSs, roadway modifications, replacement or restoration of paving, sidewalks, parking, and landscaping, and the installation of rails and vehicles. Portions of Alternative 3 south of the Wilshire Boulevard/Metro D Line Station and north of the Getty Center Station would be the same as what was previously described for Alternative 1; therefore, construction activities associated with the Alternative 3 monorail transit (MRT) alignment would be the same as those described for Alternative 1 and would result in the same potential stormwater discharges. The construction impacts discussion for Alternative 1 presents the regulatory requirements to address stormwater discharges. The same regulatory requirements described for Alternative 1 would also be applicable to Alternative 3 construction activities.

The proposed bored tunnel for Alternative 3 would cut through the south flanks of the Santa Monica Mountains and extend beneath the Bel Air Country Club and University of California, Los Angeles (UCLA) campus. The depth of the proposed tunnel would range from 30 feet to 300 feet in the south flanks of the Santa Monica Mountains. As the tunnel extends through Westwood area, it would be shallower and transition to a bored tunnel at depths ranging from 80 to 110 feet. The groundwater depth is shallow by the Wilshire Boulevard/Metro D Line Station ranging from approximately 30 to 40 feet. There is potential for groundwater to be encountered during tunnel boring activities in areas where the tunnel invert is below groundwater level; however, proposed tunnel boring activities would not be expected to require dewatering because tunnel boring would involve a closed mode machine that would operate under the water table, and a precast concrete tunnel liner (designed for full hydrostatic pressure) would be installed post-excavation. Both of these features would substantially reduce (if not eliminate) groundwater ingress during construction.

If dewatering is required, dewatering activities would be conducted in compliance with the LARWQCB NPDES dewatering permits, *Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties* (Order R4-2018-0125) and *Waste Discharge Requirements for Specified Discharges to Groundwater in the Santa Clara River and Los Angeles River Basins* (Order No. 93-010), as applicable. The watertight systems (e.g., secant pile, slurry wall) to be employed during station construction would minimize groundwater intrusion, and any residual impacts would be managed under the established regulatory framework. In such cases, temporary pumps and filtration systems would be used in compliance with the applicable NPDES permits. The temporary system would be required to comply with all relevant NPDES requirements related to construction and discharges from dewatering operations. Water removed from the boreholes would be containerized and analyzed to determine the proper disposal method or possible treatment and re-use on-site. The treatment and disposal of the dewatered water would occur in accordance with the requirements of NPDES Order R4-2018-0125 and Order No. 93-010, as applicable. The WDRs require that waste be analyzed prior to being discharged in order to determine if it contains pollutants in excess of the applicable Basin Plan water quality objectives. Or if possible, the dewatered water would potentially be treated and reused on-site (e.g., for dust control or cleaning equipment) rather than being disposed.

Improper handling, storage, or disposal of construction materials used during construction activities of underground components, such as sediments, concrete waste, grouting materials, and petroleum

products, would result in accidental spills and discharges that would contribute to groundwater pollution. Grouting operations, in particular, may involve the use of chemical additives and materials that, if not properly contained, could infiltrate groundwater or surface water systems. These materials may include bentonite, cement-based grouts, and chemical additives, which could alter water chemistry if discharged improperly. Uncontrolled discharge of groundwater carrying these potential pollutants would result in degradation of groundwater and surface water if it is not properly managed during construction activities. If groundwater containing contaminants such as VOCs, heavy metals, or petroleum hydrocarbons is encountered during dewatering activities, additional treatment or special disposal methods would be required to comply with applicable regulatory requirements and prevent contamination of receiving waters. BMPs would be implemented to ensure proper containment and disposal of grouting materials and wastewater, as well regular monitoring and adaptive management.

Alternative 3 would be required to comply with all applicable water quality protection laws and regulations at the federal, state, regional, and local levels, as well as commonly used industry standards. These include the CWA, Porter-Cologne Water Quality Control Act, State of California Antidegradation Policies, NPDES Construction General Permit (CGP), the Municipal Separate Storm Sewer Systems (MS4) Permit, Caltrans NPDES Statewide Stormwater Permit, and the City of Los Angeles and County of Los Angeles LID Ordinance.

With adherence to existing laws and proper implementation of stormwater compliance requirements, potential impacts related to the violation of any water quality standards or WDRs or substantial degradation of surface or groundwater quality during construction activities of Alternative 3 would be less than significant.

Alternative 4

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

During operations, Alternative 4 would result in a net decrease in impervious surfaces compared to existing conditions because approximately half (four stations) of Alternative 4 would be underground and the majority of the land surfaces associated with the proposed aerial stations and other ancillary facilities in the Project Study Area are developed and covered by existing impervious surfaces.

Components that would increase the existing impervious surface area include the UCLA Gateway Plaza Station, Metro G Line Station, and the Van Nuys Metrolink Station. Components that would decrease the existing impervious surface area include the Metro E Line Station, Santa Monica Boulevard Station, Wilshire Boulevard/Metro D Line Station, Ventura Boulevard Station, Sherman Way Station, and proposed MSFs adjacent to the Van Nuys Metrolink/Amtrak Station at the northern end of Alternative 4. The actual footprint of the aerial stations at the ground level would be covered only by column footings and vertical circulation elements. However, to be conservative, the analysis includes aboveground elements of these components, including the station canopies and platforms to calculate the total impervious area created by Alternative 4 components. The footprints of Alternative 4 components would be nominal when compared to the area of the watershed or groundwater basin. Table 3.9-4 lists the initial estimates of existing and new impervious surface areas, and the estimated net impervious surface area created at each of the Alternative 4 components.

Table 3.9-4. Alternative 4: New Impervious Surface Area

Stations	Existing Impervious Surface Area at Component Site (square feet)	New and Reconstructed Impervious Surface Area at Component Site (square feet)	Net Impervious Area Created by Component (square feet)
Metro E-Line/Sepulveda Station	88,293	80,682	-7,611
Santa Monica Boulevard Station	45,946	44,014	-1,932
Wilshire/Metro D Line Station	41,799	41,769	-30
UCLA Gateway Plaza Station	35,568	37,444	1,876
Ventura Boulevard Station	73,415	71,025	-2,390
Metro G Line Station	53,340	53,592	252
Sherman Way Station	95,634	90,378	-5,256
Van Nuys Metrolink Station	39,991	41,585	1,594
Totals	**473,986**	**460,489**	**-13,497**

Source: STCP, 2024a

Operation of Alternative 4 would require routine maintenance that would be performed by the system operator. Maintenance activities associated with the transit system operation, such as train car maintenance and lubrication, would occur at the proposed MSF. Rail maintenance would occur along the corridor alignment. Potential pollutants (e.g., petroleum products/lubricants, paints, solvents, and other Alternative 4-related products) used or generated during Alternative 4 operations and maintenance would contribute to water pollution if not properly dispensed, stored, or disposed. If not appropriately managed, uncontrolled discharge of runoff carrying these potential pollutants would result in significant impacts to water quality in receiving waters, which would violate federal, state, and local water quality standards and WDRs.

Storage and disposal of hazardous materials and waste would be conducted in accordance with all applicable federal and state regulatory requirements. As described in the *Sepulveda Transit Corridor Project Hazards and Hazardous Materials Technical Report* (Metro, 2025b), Alternative 4 would be required to reduce the potential effects of the use and storage of hazardous materials at MSF and TPSSs through the implementation of hazardous materials monitoring plans, including a hazardous materials business plan developed in accordance with California Health and Safety Code requirements.

As previously discussed, Alternative 4 would comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, water quality control and/or sustainable groundwater management plans, including the Basin Plan (LARWQCB, 2014) and the MS4 Permit, as well as commonly used industry standards.

Alternative 4 would be designed to incorporate several sustainability features, such as native landscaping, rainwater cisterns for capture and reuse, permeable surfaces, soil improvements, increased vegetation, and on-site retention, in compliance with the *Low Impact Development Standards Manual* (LADPW, 2014) and the City of Los Angeles *Planning and Land Development Handbook for Low Impact Development* (City of Los Angeles Department of Sanitation, 2016), which would serve to reduce impervious area and promote infiltration, thereby improving water quality. Alternative 4 would comply with the California Department of Transportation's (Caltrans) National Pollutant Discharge Elimination System (NPDES) Statewide Stormwater Permit, City of Los Angeles Municipal Code, the City of Los Angeles and County of Los Angeles LID Ordinance, and all other applicable regulations for all operational activities, including adherence to an approved Alternative 4-specific LID plan, which would identify the BMPs for Alternative 4 operations. The types of LID BMP designs to be incorporated would be

determined during the design phase. Although final design would dictate actual stormwater management aspects of Alternative 4, potential BMPs would include depressed landscape gardens for runoff retention and infiltration, permeable surfaces to reduce runoff volume, hardscape replacement with pervious or planted substitutions, bioswales or artistic water features that creatively convey runoff into planted or pervious areas, roof downspout discharges to vegetated areas, and rainwater cisterns and other on-site stormwater retention methods. These measures and practices would be incorporated at applicable component sites and would serve to promote infiltration.

The Alternative 4-specific LID plan would identify the BMPs for the Alternative 4 post-construction design (i.e., operational characteristics to control/treat runoff for the range of potential pollutants). Alternative 4 would include design elements that would serve to infiltrate, capture and re-use stormwater in accordance with current LID requirements — thereby minimizing the potential for increased runoff rates and pollutant discharge. LID design features would slow (detain or retain) stormwater, which would reduce the runoff volume discharged from Alternative 4 and would decrease the peak runoff discharge velocity for design storms. Implementation of LID BMPs would offset any increases in runoff rates due to the creation of new impervious surface areas. As a result, less flow with fewer pollutants would be transported through the conveyance systems, and ultimately into surface waters, including ancillary exfiltration to the groundwater table. Additionally, natural treatment of infiltrated runoff would occur, thereby improving exfiltrated water from LID and water quality additions to the groundwater table, including treatment for potential pollutants (e.g., petroleum products/lubricants, metals, paints, solvents, and other Alternative 4-related products) used or generated during Alternative 4 operations.

Alternative 4 is anticipated to require Industrial General Permit (IGP) coverage for maintenance facilities, fueling operations, equipment cleaning/washing operations, and TPSSs. As such, an IGP SWPPP would be prepared and submitted to the SWRCB prior to operations. The IGP includes discharge prohibitions, effluent limitations, and receiving water limitations that must be adhered to during operations. IGP SWPPP BMPs would include good housekeeping, prevention and maintenance activities, material handling and waste management, erosion and sediment controls, training, recordkeeping, and reporting of spills or releases. Other BMPs may also be employed, as appropriate, such as indoor/covered areas for maintenance, approved flammable/hazmat storage lockers for lubricants and other industrial liquids, drip/spill protection in maintenance areas and similar BMPs when conducting maintenance, dry clean-up practices, and dedicated enclosed areas for metal working, painting, and welding.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts related to the violation of any water quality standards or WDRs or substantial degradation of surface or groundwater quality during operations of Alternative 4 would be less than significant.

Construction Impacts

Construction of Alternative 4 would involve underground, at-grade, and aerial activities. Underground activities would include relocation of existing utilities, tunnel guideway construction, and station construction. At-grade activities would involve site clearing and excavation, utility relocation, foundation construction, installation of support columns and beams for aerial guideway, erection of stations, towers, and junctions, as well as construction of MSFs, replacement or restoration of paving, sidewalks, parking, and landscaping. Temporary components of Alternative 4 would include construction staging areas, office areas, and work zones at permanent facilities.

Alternative 4 is divided into three primary segments: South Westside Basin (south), Central-Santa Monica Mountains (central), and North-San Fernando Valley (north). The construction activities within the north segment of Alternative 4 would be conducted exclusively at grade in the dense urban area along Sepulveda Boulevard. This includes building an elevated guideway structure for the aerial portion of Alternative 4 and four aerial stations, and at-grade MSF. Aerial stations located in the segment include the Ventura Boulevard Station, Metro G Line Station, Sherman Way Station, and the Van Nuys Metrolink Station.

Construction activities such as demolition, excavation, and grading would temporarily expose bare soil, increasing the risk of erosion. Uncontrolled erosion and discharge of sediments and other potential pollutants, including the discharge of fill material, would affect water quality in Alternative 4 receiving waters (e.g., the Pacoima Wash, Tujunga Wash, and Los Angeles River) if not appropriately managed by proper implementation of the construction SWPPP.

In addition to sediments, other pollutants including trash, concrete waste, and petroleum products, such as fuels, solvents, and lubricants, would degrade water quality and contribute to water pollution if not appropriately managed. The use of construction equipment and vehicles during Alternative 4 construction would result in spills of vehicle-related fluids that would contribute to water pollution. Improper handling, storage, or disposal of these materials or improper cleaning and maintenance of equipment would result in accidental spills and discharges that would contribute to water pollution.

Alternative 4 would be located within the Los Angeles Watershed and the Santa Monica Bay Watershed in the Ballona Creek subwatershed. The vast majority of land in the Los Angeles Watershed (approximately 80 percent) is developed with urban uses. Most of the Ballona Creek subwatershed drainage network has been modified into storm drains, underground culverts, and open concrete channels. A few natural channels remain in the Santa Monica Mountains. Construction activities such as excavation near Santa Monica Mountains would have the potential to temporarily impact these natural channels by contributing increased sediment/pollutants if not appropriately managed.

Construction activities associated with elevated guideway foundations involve general earthwork and concrete work to prepare the foundations. Excavations for foundations would occur between 6 and 12 feet bgs and piles would be installed up to a maximum of approximately 140 feet bgs. Groundwater levels in this segment of Alternative 4 generally range from depths of approximately 50 to 80 feet bgs, with deeper groundwater close to the Van Nuys Metrolink Station and shallower groundwater close to the Ventura Boulevard Station.

Since the average proposed excavation depth for the foundations at the aerial stations would be lower than the depth of groundwater in the vicinity of the four aerial stations, removal of nuisance water that seeps into boreholes during construction would be required for foundation excavations.

The construction activities within the south segment of Alternative 4 would be mainly conducted underground in the dense urban area from west of Los Angeles to the southern base of Santa Monica Mountains. This includes constructing an underground track guideway/tunnel and four underground stations. Underground stations located in the segment include the Metro E Line Station, Santa Monica Boulevard Station, Wilshire Boulevard/Metro D Line Station, and the UCLA Gateway Plaza Station. The stations would be constructed using the cut-and-cover method. At the Metro E Line Station, the depth of excavation would be up to approximately 100 feet bgs, with the groundwater table in the vicinity of the station approximately 40 feet bgs. At the Santa Monica Boulevard Station, the depth of excavation would be approximately 100 feet bgs and the groundwater table would be 30 feet below the ground surface. The excavation depth of the Wilshire Boulevard/Metro D Line Station would be approximately

150 feet, and groundwater would be encountered approximately 25 bgs in the vicinity of the station. The excavation depth of the UCLA Gateway Plaza Station would be approximately 130 feet, and groundwater would be encountered around 45 feet bgs. Since there is potential for groundwater to be encountered during excavation activities for all of these stations, dewatering would be required.

If dewatering is required, dewatering activities would be conducted in compliance with the Los Angeles Regional Water Quality Control Board's NPDES dewatering permits, *Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties* (Order R4-2018-0125) and *Waste Discharge Requirements for Specified Discharges to Groundwater in the Santa Clara River and Los Angeles River Basins* (Order No. 93-010), as applicable. The watertight systems (e.g., secant pile, slurry wall) to be employed during station construction would minimize groundwater intrusion, and any residual impacts would be managed under the established regulatory framework. In such cases, temporary pumps and filtration systems would be used in compliance with the applicable NPDES permits. The temporary system would be required to comply with all relevant NPDES requirements related to construction and discharges from dewatering operations. Water removed from the boreholes would be containerized and analyzed to determine the proper disposal method or possible treatment and re-use on-site. The treatment and disposal of the dewatered water would occur in accordance with the requirements of NPDES Order R4-2018-0125 and Order No. 93-010, as applicable. The WDRs require that waste be analyzed prior to being discharged in order to determine if it contains pollutants in excess of the applicable Basin Plan water quality objectives. Or if possible, the dewatered water would potentially be treated and reused on-site (e.g., for dust control or cleaning equipment) rather than being disposed.

The construction activities within the central segment of Alternative 4 would be mainly conducted underground to construct a track guideway/tunnel, with the exception of the tunnel north portal at the northern base of the Santa Monica Mountains and an LADWP substation, which may need to be constructed at the southern base of the mountains. There is no station at this segment.

Alternative 4 would include a tunnel running from the southern terminus of the project to the north base of the Santa Monica Mountains. The depth of cover for the tunnel through the southern segment of Alternative 4 would vary from approximately 40 feet to 90 feet bgs. The depth of cover for the central segment of Alternative 4 would vary from approximately 470 feet as it passes under the Santa Monica Mountains to 70 feet near UCLA. The groundwater depth along the proposed tunnel varies from 40 to 320 feet bgs. There is potential for groundwater to be encountered during tunnel boring activities in areas where the tunnel invert is below groundwater level; however, proposed tunnel boring activities would not be expected to require dewatering because tunnel boring would involve a closed mode machine that would operate under the water table, and a precast concrete tunnel liner (designed for full hydrostatic pressure) would be installed post-excavation. Both of these features would substantially reduce (if not eliminate) groundwater ingress during construction.

Volatile organic compounds such as TCE, PCE, petroleum compounds, chloroform, nitrate, sulfate, and heavy metals have been detected in groundwater of the San Fernando Valley Groundwater Basin (northern segment of Alternative 4). Although the groundwater quality in the remainder of the Project Study Area is not specifically known, it may contain elevated levels of constituents such as petroleum hydrocarbons and solvents resulting from commercial and industrial discharges, in addition to potentially elevated TDS and metals related to natural conditions. Uncontrolled discharge of groundwater carrying these potential pollutants would result in degradation of groundwater and surface water if it is not properly managed during construction activities. If groundwater containing contaminants such as VOCs, heavy metals, or petroleum hydrocarbons is encountered during

dewatering activities, additional treatment or special disposal methods would be required to comply with applicable regulatory requirements and prevent contamination of receiving waters.

Alternative 4 would be required to comply with all applicable water quality protection laws and regulations at the federal, state, regional, and local levels, as well as commonly used industry standards. These include the CWA, Porter-Cologne Water Quality Control Act, State of California Antidegradation Policies, NPDES CGP, the MS4 Permit, Caltrans NPDES Statewide Stormwater Permit, and the City of Los Angeles and County of Los Angeles LID Ordinance.

Alternative 4 would be required to comply with the CGP in effect at the time of construction. In accordance with the CGP, Alternative 4 would be required to prepare and submit a construction SWPPP, which must be submitted to the SWRCB prior to construction and adhered to during construction. Proper implementation of the construction SWPPP would avoid potential impacts to water quality. The construction SWPPP would identify the BMPs that would be in place to protect water quality prior to the start of construction activities and during construction. BMP categories would include erosion control, sediment control, tracking control, wind erosion, stormwater and non-stormwater management, and materials management with regular monitoring. Although specific temporary construction-related BMPs would be selected at the time of SWPPP preparation, potential BMPs would likely include fiber rolls, bonded-fiber matrix hydroseeding, soil furrowing, water bars, and check dams for erosion control, inlet protection (sand/gravel bags and geotextiles), silt fencing, sediment traps/basins for sediment controls, soil berming around disturbed areas, and phasing of soil disturbance during the wet season (i.e., limiting widespread grading) for effectively managing erosion and pollutant discharge during significant rainfall events.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts related to the violation of any water quality standards or WDRs or substantial degradation of surface or groundwater quality during construction activities of Alternative 4 would be less than significant.

Alternative 5

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

Alternative 5 shares all of the same components previously described for Alternative 4 and, therefore, information pertaining to regulatory compliance to address site runoff would be the same as what is presented for Alternative 4. The operational impacts discussion for Alternative 4 presents the regulatory requirements to address stormwater discharges. Table 3.9-5 lists the initial estimates of existing and new impervious surface areas and the estimated net impervious surface area created at each of the Alternative 5 component sites. Alternative 5 differs from Alternative 4 because the majority of the Alternative 5 alignment and associated stations (seven stations) would be underground. Aboveground components would include one aerial station, in addition to three TPSSs and parking lots.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts to related to the violation of any water quality standards or WDRs or substantial degradation of surface or groundwater quality during operation of Alternative 5 would be less than significant.

Table 3.9-5. Alternative 5: New Impervious Surface Area

Stations	Existing Impervious Surface Area at Component Site (square feet)	New and Reconstructed Impervious Surface Area at Component Site (square feet)	Net Impervious Area Created by Component (square feet)
Metro E Line Station	88,293	80,682	-7,611
Santa Monica Boulevard Station	45,946	44,014	-1,932
Wilshire/Metro D Line Station	41,799	41,769	-30
UCLA Gateway Plaza Station	35,568	37,444	1,876
Ventura Boulevard Station	45,045	37,808	-7,237
Metro G Line Station	57,850	57,467	-383
Sherman Way Station	76,183	67,358	-8,825
Van Nuys Metrolink Station	39,991	41,585	1,594
Totals	**430,675**	**408,127**	**-22,548**

Source: STCP, 2024b

Construction Impacts

Construction activities associated with the Alternative 5 heavy rail transit (HRT) alignment would be the same as those previously described for the underground portions of the Alternative 4 HRT alignment and would result in the same potential stormwater discharges. The construction impacts discussion for Alternative 4 presents the regulatory requirements to address stormwater discharges.

With adherence to existing laws and proper implementation of stormwater compliance requirements, potential impacts related to the violation of any water quality standards or WDRs or substantial degradation of surface or groundwater quality during construction activities of Alternative 5 would be less than significant.

Alternative 6

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

During operations, Alternative 6 would not increase impervious surfaces compared to existing conditions because most of Alternative 6 would be underground and land surfaces with the proposed stations and other ancillary facilities in the Project Study Area are developed and covered by existing impervious surfaces. All seven stations would be underground, underneath existing impervious areas and would not require the creation of new impervious surfaces. The MSF would be constructed on existing impervious surfaces. Components that would slightly increase the existing impervious surface area include the mountain shaft facility, TPSS structures, and the access road. Alternative 6 is estimated to create approximately 146,596 square feet of impervious area. However, new pervious surface (approximately 542,135 square feet) would be created on existing impervious surface. Therefore, Alternative 6 would result in a net increase of approximately 395,539 square feet of pervious area compared to existing conditions (Table 3.9-6).

Table 3.9-6. Alternative 6: New Impervious Surface Area

Component	New Pervious Surface Area at Component Site (square feet)	New Impervious Surface Area at Component Site (square feet)	Net Pervious Area Created by Component (square feet)
Mountain Shaft Access Road	0	78,534	-78,534
Mountain Shaft Facility/TPSS	0	68,062	-68,062
MSF	542,135	0	542,135
Totals	**542,135**	**146,596**	**395,539**

Source: HTA, 2024

Maintenance activities associated with the transit system operation, such as train car maintenance and lubrication, would occur at the proposed MSF. Potential pollutants (e.g., petroleum products/lubricants, paints, solvents, and other Alternative 6-related products) used or generated during Alternative 6 operations and maintenance would contribute to water pollution if not properly dispensed, stored, or disposed. If not appropriately managed, uncontrolled discharge of runoff carrying these potential pollutants would result in significant impacts to water quality in receiving waters, which would violate federal, state, and local water quality standards and WDRs.

Storage and disposal of hazardous materials and waste would be conducted in accordance with all applicable federal and state regulatory requirements. As described in the *Sepulveda Transit Corridor Project Hazards and Hazardous Materials Technical Report* (Metro, 2025b), Alternative 6 would be required to reduce the potential effects of the use and storage of hazardous materials at MSF and TPSSs through the implementation of hazardous materials monitoring plans, including a hazardous materials business plan developed in accordance with California Health and Safety Code requirements.

As previously discussed, Alternative 6 would comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, water quality control and/or sustainable groundwater management plans, including the Basin Plan (LARWQCB, 2014) and the MS4 Permit, as well as commonly used industry standards.

Alternative 6 would be designed to incorporate several sustainability features, such as native landscaping, rainwater cisterns for capture and reuse, permeable surfaces, soil improvements, increased vegetation, and on-site retention, in compliance with the *Low Impact Development Standards Manual* (LADPW, 2014) and the City of Los Angeles *Planning and Land Development Handbook for Low Impact Development* (City of Los Angeles Department of Sanitation, 2016), which would serve to reduce impervious area and promote infiltration, thereby improving water quality. Alternative 6 would comply with the California Department of Transportation's (Caltrans) National Pollutant Discharge Elimination System (NPDES) Statewide Stormwater Permit, City of Los Angeles Municipal Code, the City of Los Angeles and County of Los Angeles LID Ordinance, and all other applicable regulations for all operational activities, including adherence to an approved Alternative 6-specific low impact development (LID) plan, which would identify the BMPs for Alternative 6 operations. The types of LID BMP designs to be incorporated would be determined during the design phase. Although final design would dictate actual stormwater management aspects of Alternative 6, potential BMPs would include, but not be limited to, depressed landscape gardens for runoff retention and infiltration, permeable surfaces to reduce runoff volume, hardscape replacement with pervious or planted substitutions, bioswales or artistic water features that creatively convey runoff into planted or pervious areas, roof downspout discharges to vegetated areas, and rainwater cisterns and other on-site stormwater retention methods. These measures and practices would be incorporated at applicable component sites and would serve to promote infiltration.

The Alternative 6-specific LID plan would identify the BMPs for Alternative 6 post-construction design (i.e., operational characteristics to control/treat runoff for the range of potential pollutants). Alternative 6 would include design elements that serve to infiltrate, capture and re-use stormwater in accordance with current LID requirements — thereby minimizing the potential for increased runoff rates and pollutant discharge. LID design features would slow (detain or retain) stormwater, which would reduce the runoff volume discharged from Alternative 6 and would decrease the peak runoff discharge velocity for design storms. Implementation of LID BMPs would offset any increases in runoff rates due to the creation of new impervious surface areas. As a result, less flow with fewer pollutants would be transported through the conveyance systems, and ultimately into surface waters, including ancillary exfiltration to the groundwater table. Additionally, natural treatment of infiltrated runoff would occur, thereby improving exfiltrated water from LID and water quality additions to the groundwater table, including treatment for potential pollutants (e.g., petroleum products/lubricants, metals, paints, solvents, and other Alternative 6-related products) used or generated during Alternative 6 operations.

Alternative 6 is anticipated to require Industrial General Permit (IGP) coverage for maintenance facilities, fueling operations, equipment cleaning/washing operations, and TPSSs. As such, an IGP SWPPP would be prepared and submitted to the SWRCB prior to operations. The IGP includes discharge prohibitions, effluent limitations, and receiving water limitations that must be adhered to during operations. IGP SWPPP BMPs would include good housekeeping, prevention and maintenance activities, material handling and waste management, erosion and sediment controls, training, recordkeeping, and reporting of spills or releases. Other BMPs may also be employed, as appropriate, such as indoor/covered areas for maintenance, approved flammable/hazmat storage lockers for lubricants and other industrial liquids, drip/spill protection in maintenance areas and similar BMPs when conducting maintenance, dry clean-up practices, and dedicated enclosed areas for metal working, painting, and welding.

With adherence to existing laws and proper implementation of stormwater compliance requirements, potential impacts related to the violation of any water quality standards or WDRs or the degradation of surface or groundwater quality during operations of Alternative 6 would be less than significant.

Construction Impacts

Construction of Alternative 6 involves underground and at-grade activities. Underground activities would include relocation of existing utilities, tunnel guideway construction, and station construction. At-grade activities would involve relocation of existing utilities, building MSFs, parking lots, and reconstruction of roadways with appropriate pedestrian and cyclist access. Temporary components of Alternative 6 would include construction staging areas, office areas, and work zones at permanent facilities.

Construction activities such as demolition and excavation would temporarily expose bare soil, increasing the risk of erosion. Uncontrolled erosion and discharge of sediments and other potential pollutants, including the discharge of fill material, would affect water quality in Alternative 6 receiving waters (e.g., the Pacoima Wash, Tujunga Wash, and Los Angeles River) if not appropriately managed.

In addition to sediments, other pollutants including trash, concrete waste, and petroleum products, such as fuels, solvents, and lubricants, would degrade water quality and contribute to water pollution if not appropriately managed. The use of construction equipment and vehicles during Alternative 6 construction would result in spills of vehicle-related fluids that would contribute to water pollution if not appropriately managed. Improper handling, storage, or disposal of these materials or improper cleaning

and maintenance of equipment would result in accidental spills and discharges that would contribute to water pollution.

Alternative 6 would be located within the Los Angeles Watershed and the Santa Monica Bay Watershed in the Ballona Creek subwatershed. The vast majority of land in the Los Angeles Watershed (approximately 80 percent) is developed with urban uses. Most of the Ballona Creek subwatershed drainage network has been modified into storm drains, underground culverts, and open concrete channels. A few natural channels remain in the Santa Monica Mountains and Baldwin Hills. Construction activities such as excavation near the Santa Monica Mountains and Baldwin Hills section of Alternative 6 would have the potential to impact these natural channels by contributing increased sediment/pollutants if not appropriately managed.

The construction activities for utility relocation would include demolishing existing concrete pavement and utilities, excavating trenches for new utility routing, backfilling, and reconstructing the concrete pavement. Cut-and-cover box construction involves demolishing existing structures, constructing supporting utilities, piling and decking, excavating, hauling materials, and constructing temporary roadway decking. All stations except the Wilshire Boulevard/Metro D Line Station would be constructed as cut-and-cover box structures. The groundwater depth in the vicinity of the Santa Monica Boulevard Station, UCLA Gateway Plaza Station, and the Ventura Boulevard Station, generally ranges from 40 to 310 feet bgs. The depth of excavation for these stations would vary between 140 to 255 feet bgs. There is the potential that groundwater may be encountered during excavation activities for these stations; therefore, dewatering would be required.

The sequential excavation method (SEM) would be used for constructing underground stations where surface structures cannot be demolished. SEM involves excavation, shoring, and underpinning and would be performed at the Metro E Line Station and the Wilshire/Metro D Line Station. The groundwater level in the vicinity of the Metro E Line Station varies between 30 and 40 feet bgs and between 35 and 80 feet bgs in the vicinity of Wilshire Boulevard/Metro D Line Station. The excavation would occur between 110 and 150 feet bgs for the Wilshire Boulevard/Metro D Line Station at approximately 100 feet bgs for the Metro E Line Station. There is the potential that groundwater may be encountered during excavation activities for these stations; therefore, dewatering would be required. However, project stations would be constructed with a watertight system (e.g., secant pile, slurry wall) to prevent groundwater intrusion.

The tunnel alignment would be constructed over three segments. The majority of the tunnel invert along the proposed alignment is below groundwater level. However, from Burbank Boulevard in the vicinity of the Metro G Line Station to the Van Nuys Metrolink Station, the tunnel invert is above the groundwater level. There is the potential that groundwater may be encountered during tunnel boring activities for the areas where the tunnel invert is below groundwater level; however, dewatering is expected to be minimal during pressurized-face TBM operations for bored soft-ground and bored rock tunnel segments. Pressurized-face TBMs are designed to maintain the pressure at the tunnel face to equal or slightly higher than the surrounding groundwater pressure. This balance in pressure prevents groundwater from flowing into the tunnel excavation. As the TBM advances, it would install pre-cast concrete segments (tunnel liners) behind the shield to form the tunnel's structural lining. The tunnel liners would be fitted with waterproof gaskets at the joints to seal the tunnel and prevent groundwater intrusion. Tunneling with pressurized, closed-faced TBMs and use of tunnel liners with waterproof gaskets would minimize or eliminate groundwater intrusion into the tunnel excavations and thus reduce groundwater depletion.

The Stone Canyon vent shaft would be constructed using a vertical shaft sinking machine. The tunnel depth at the vent site would be greater than approximately 600 feet deep; therefore, removal of nuisance water as well as excavated material may be required during the excavation activities. However, shafts would be constructed with a watertight system to prevent groundwater intrusion.

If dewatering is required, dewatering activities would be conducted in compliance with the LARWQCB NPDES dewatering permits, *Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties* (Order R4-2018-0125) and *Waste Discharge Requirements for Specified Discharges to Groundwater in the Santa Clara River and Los Angeles River Basins* (Order No. 93-010), as applicable. The watertight systems (e.g., secant pile, slurry wall) to be employed during station construction would minimize groundwater intrusion, and any residual impacts would be managed under the established regulatory framework. In such cases, temporary pumps and filtration systems would be used in compliance with the applicable NPDES permits. The temporary system would be required to comply with all relevant NPDES requirements related to construction and discharges from dewatering operations. Water removed from the boreholes would be containerized and analyzed to determine the proper disposal method or possible treatment and re-use on-site. The treatment and disposal of the dewatered water would occur in accordance with the requirements of NPDES Order R4-2018-0125 and Order No. 93-010, as applicable. The WDRs require that waste be analyzed prior to being discharged in order to determine if it contains pollutants in excess of the applicable Basin Plan water quality objectives. Or if possible, the dewatered water would potentially be treated and reused on-site (e.g., for dust control or cleaning equipment) rather than being disposed.

Volatile organic compounds such as TCE, PCE, petroleum compounds, chloroform, nitrate, sulfate, and heavy metals have been detected in groundwater of the San Fernando Valley groundwater basin. Although the groundwater quality in the remainder of the Project Study Area is not specifically known, it may contain elevated levels of constituents such as petroleum hydrocarbons and solvents resulting from commercial and industrial discharges, in addition to potentially elevated TDS and metals related to natural conditions. Uncontrolled discharge of groundwater carrying these potential pollutants would result in degradation of groundwater and surface water if it is not properly managed during construction activities. If groundwater containing contaminants such as VOCs, heavy metals, or petroleum hydrocarbons is encountered during dewatering activities, additional treatment or special disposal methods would be required to comply with applicable regulatory requirements and prevent contamination of receiving waters.

Alternative 6 would be required to comply with all applicable water quality protection laws and regulations at the federal, state, regional, and local levels, as well as commonly used industry standards. These include the CWA, Porter-Cologne Water Quality Control Act, State of California Antidegradation Policies, NPDES CGP requirements, the MS4 Permit, Caltrans NPDES Statewide Stormwater Permit, and the City of Los Angeles and County of Los Angeles LID Ordinance.

Alternative 6 would be required to comply with the CGP in effect at the time of construction. In accordance with the CGP, Alternative 6 would be required to prepare and submit a construction SWPPP, which must be submitted to the SWRCB prior to construction and adhered to during construction. Proper implementation of the construction SWPPP would avoid potential impacts to water quality. The construction SWPPP would identify the BMPs that would be in place to protect water quality prior to the start of construction activities and during construction. BMP categories would include erosion control, sediment control, tracking control, wind erosion, stormwater and non-stormwater management, and materials management with regular monitoring. Although specific temporary construction-related BMPs

would be selected at the time of SWPPP preparation, potential BMPs would likely include fiber rolls, bonded-fiber matrix hydroseeding, soil furrowing, water bars, and check dams for erosion control, inlet protection (sand/gravel bags and geotextiles), silt fencing, sediment traps/basins for sediment controls, soil berming around disturbed areas, and phasing of soil disturbance during the wet season (i.e., limiting widespread grading) for effectively managing erosion and pollutant discharge during significant rainfall events.

With adherence to existing laws and proper implementation of stormwater compliance requirements, potential impacts related to the violation of any water quality standards or WDRs or the degradation of surface or groundwater quality during construction activities of Alternative 6 would be less than significant.

Maintenance and Storage Facilities

Monorail Transit Maintenance and Storage Facility Base Design (Alternatives 1 and 3)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

Maintenance of monorail vehicles and equipment for Alternatives 1 and 3 would occur at the MSF Base Design. Multiple buildings would be constructed, including a multi-level maintenance-of-way building, track storage area, wash bays, ancillary storage buildings, and TPSS structure. The MSF would be constructed on parcels containing existing impervious surfaces. Additionally, the MSF Base Design compound would be in an aerial configuration, limiting the ground-level area that would be impervious to column footings and vertical circulation elements such as elevators and stairs. Therefore, the MSF Base Design would not substantially increase the existing impervious surface area at the MSF Base Design site.

Improper handling, storage, or disposal of fuels, chemical, soaps and vehicle-related fluids or improper cleaning and maintenance of equipment within the maintenance shop and train car wash building of the MSF Base Design would result in accidental spills and discharges that would contribute to water pollution.

During operations, the MSF Base Design would be required to obtain IGP coverage. An IGP SWPPP would be prepared and submitted to the SWRCB prior to operations. The IGP SWPPP would include discharge prohibitions, effluent limitations, and receiving water limitations that must be adhered to during operations. IGP SWPPP BMPs would include good housekeeping, prevention and maintenance activities, material handling and waste management, erosion and sediment controls, training, recordkeeping, and reporting of spills or releases. Other BMPs would also be employed, as appropriate, such as indoor/covered areas for maintenance, approved flammable/hazmat storage lockers for lubricants and other industrial liquids, drip/spill protection in maintenance areas and similar BMPs when conducting maintenance, dry clean-up practices, and dedicated enclosed areas for metal working, painting, and welding.

Construction activities such as demolition, excavation, and grading would temporarily expose bare soil, increasing the risk of erosion. Sediments (and their associated pollutants) from erosion if not properly managed would accumulate and block storm drain inlets in the vicinity of the MSF Base Design or indirectly be carried into the closest receiving water body (e.g., Pacoima Wash).

In addition to sediments, other pollutants including trash, concrete waste, and petroleum products, such as fuels, solvents, and lubricants, would degrade water quality and contribute to water pollution if not appropriately managed. The use of construction equipment and vehicles during the MSF Base Design construction would result in spills of vehicle-related fluids that would contribute to water pollution. Improper handling, storage, or disposal of these materials or improper cleaning and maintenance of equipment would result in accidental spills and discharges that would contribute to water pollution.

Construction activities associated with foundations would involve general earthwork and concrete work to prepare the foundations. Excavations for foundations would be between 6 and 8 feet bgs, and piles would be installed up to approximately 80 feet bgs. The groundwater depth increases progressively northward along the Project Study Area up to approximately 90 feet below grade (Metro, 2023), where the alignment shifts from being adjacent to I-405 to being adjacent to the Southern California Regional Rail Authority Metrolink ROW where the MSF Base Design would be located. As a result, the seepage of groundwater into boreholes would be expected to be minimal. However, in the unlikely event of seepage, water removed from the boreholes would be containerized and analyzed to determine the proper disposal method.

The MSF Base Design would be required to comply with the CGP in effect at the time of construction. In accordance with the CGP, the MSF Base Design would be required to prepare and submit a construction SWPPP, which must be submitted to the SWRCB prior to construction, and adhered to during construction of the MSF Base Design. Proper implementation of the construction SWPPP would avoid potential impacts to water quality. The construction SWPPP would identify the BMPs that would be in place prior to the start of construction activities and during construction of the MSF Base Design. BMP categories would include erosion control, sediment control, tracking control, wind erosion, stormwater and non-stormwater management, and materials management. Although specific temporary construction-related BMPs would be selected at the time of SWPPP preparation, potential BMPs would likely include fiber rolls, bonded-fiber matrix hydroseeding, soil furrowing, water bars, and check dams for erosion control, inlet protection (sand/gravel bags and geotextiles), silt fencing, sediment traps/basins for sediment controls, soil berming around disturbed areas, and phasing of soil disturbance during the wet season (i.e., limiting widespread grading) for effectively managing erosion and pollutant discharge during significant rainfall events.

The operation and construction of the MSF Base Design would be required to comply with all applicable water quality protection laws and regulations at the federal, state, regional, and local levels, as well as commonly used industry standards. These include the CWA, Porter-Cologne Water Quality Control Act, State of California Antidegradation Policies, NPDES CGP, the MS4 Permit, and the City of Los Angeles and County of Los Angeles LID Ordinance.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts related to the violation of any water quality standards or WDRs or substantial degradation of surface or groundwater quality during construction and operation of the MSF Base Design would be less than significant.

Monorail Transit Maintenance and Storage Facility Design Option 1 (Alternatives 1 and 3)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

Potential impacts associated with the MSF Design Option 1 for Alternatives 1 and 3 would be the same as that previously described for the MSF Base Design for Alternatives 1 and 3. The discussion of the Monorail Transit Maintenance and Storage Facility Base Design presents the impact evaluation for the MSF Design Option 1.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts related to the violation of any water quality standards or WDRs or substantial degradation of surface or groundwater quality during construction and operation of the MSF Design Option 1 would be less than significant.

Electric Bus Maintenance Storage Facility (Alternative 1)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

Light maintenance of electronic buses and equipment for Alternative 1 would be performed at an Electric Bus MSF. Multiple buildings would be acquired, modified, or reconstructed. The site would include approximately 45,000 square feet of buildings and include a maintenance shop and bay, a maintenance office, an operations center, a parts storeroom, and service areas. The Electric Bus MSF would not result in a significant increase in impervious surfaces or result in activities that could significantly impact water quality because the Electric Bus MSF would operate on existing impervious surfaces and roadways. Improper handling, storage, or disposal of fuels, chemical, soaps and vehicle-related fluids or improper cleaning and maintenance of equipment within the maintenance shop and bus car wash building would result in accidental spills and discharges that would contribute to water pollution. The Electric Bus MSF for Alternative 1 would comply with the same regulatory requirements previously described for the MSF Base Design for Alternatives 1 and 3, and the applicable regulatory requirements are presented in that discussion.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts related to the violation of any water quality standards or WDRs or substantial degradation of surface or groundwater quality during construction and operation of the Electric Bus MSF would be less than significant.

Heavy Rail Transit Maintenance and Storage Facility (Alternatives 4 and 5)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

Maintenance of vehicles and equipment would occur at the MSF, which would include multiple buildings, including a multi-level maintenance-of-way building, track storage area, wash bays, ancillary storage buildings, and TPSS structures. The MSF would be constructed on parcels containing existing impervious surfaces. Therefore, the MSF would not increase the existing impervious surface area.

The MSF for Alternatives 4 and 5 would comply with the same regulatory requirements previously described for the MSF Base Design for Alternatives 1 and 3, and applicable regulatory requirements are presented in that discussion.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts related to the violation of any water quality standards or WDRs or substantial degradation of surface or groundwater quality during construction and operation of the MSF would be less than significant.

Heavy Rail Transit Maintenance and Storage Facility (Alternative 6)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

Maintenance of vehicles and equipment would occur at the MSF, which would include multiple buildings, including a multi-level maintenance-of-way building, track storage area, wash bays, ancillary storage buildings, and TPSS structures. The MSF would be constructed on parcels containing existing impervious surfaces and would actually increase pervious surface material on existing impervious surface. Therefore, the MSF would not increase the existing impervious surface area. The MSF design for Alternative 6 would comply with the same regulatory requirements previously described for the MSF Base Design for Alternatives 1 and 3, and applicable regulatory requirements are presented in that discussion.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts related to the violation of any water quality standards or WDRs or substantial degradation of surface or groundwater quality during construction and operation of the MSF would be less than significant.

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

Project Alternatives

No Project Alternative

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

Under the No Project Alternative, the Project would not be developed and as a result any Project-related potential impacts would not occur. The only transit improvement within the Project Study Area that is reasonably foreseeable in absence of the Project would be the rerouting of Metro Line 761. Operations and maintenance of Metro Line 761 would occur at one of Metro's existing bus maintenance facilities and there would be no concern for groundwater extraction or uncontrolled discharge of pollutants into groundwater. With adherence to existing regulations and proper implementation of

stormwater compliance requirements, potential impacts to groundwater supply and recharge during operations of the No Project Alternative would be less than significant.

Construction Impacts

In absence of the Project, the only reasonably foreseeable transit improvement in the Project Study Area would involve changes to Metro Line 761. If any bus shelters or minor construction is required, the Metro Line 761 rerouting would be required to comply with all applicable water quality protection laws and regulations at the federal, state, regional, and local levels, as well as commonly used industry standards. These include the CWA, Porter-Cologne Water Quality Control Act, State of California Antidegradation Policies, NPDES CGP, the MS4 Permit, the Caltrans NPDES Statewide Stormwater Permit, and the City of Los Angeles and County of Los Angeles LID Ordinance.

With adherence to existing regulations and proper implementation of stormwater compliance requirements and because any construction impacts would be temporary, potential impacts to groundwater supply and recharge during construction of the No Project Alternative would be less than significant.

Alternative 1

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

Components that would increase the existing impervious surface area include the Metro E Line Station, Santa Monica Boulevard Station, Wilshire Boulevard/Metro D Line Station, Getty Center Station, Sherman Way Station, TPSSs, and proposed MSFs. Additionally, freeway modifications including realignment of existing lanes, columns in the medians, new median barriers, or shoulders required to operate Alternative 1 would increase the existing impervious areas.

All of the stations would be in an aerial configuration, so the ground level area that would be impervious would be limited to the column footings, as well as vertical circulation elements such as elevators and stairs. However, because there are many columns in proximity, as a conservative approach the analysis includes aboveground elements of these components, including the station canopies and platforms to calculate the total impervious area created by Alternative 1 components. The proposed stations would not result in a significant increase in impervious surfaces because most of the land surfaces in the Project Study Area are currently developed and covered by existing impervious surfaces. However, the TPSSs and I-405 freeway modifications that include new or relocated ramps, expanded shoulders, column locations, and retaining walls would result in a greater increase in impervious surface areas. Table 3.9-2 lists the existing impervious surface areas, estimated amount of new/reconstructed impervious surfaces added by Alternative 1 components, and the net impervious surface area created.

Alternative 1 would be designed to incorporate several sustainability features (i.e., City of Los Angeles LID requirements), such as pervious pavement, native landscaping/soil improvements, landscaped stormwater conveyance, on-site retention, and other appropriate and applicable design features that serve to capture, treat, and re-use stormwater in accordance with current LID requirements, promoting infiltration and groundwater recharge (after treatment). These measures and practices would be incorporated at applicable component sites along the Alternative 1 alignment. Alternative 1 would be required to comply with all applicable federal, state, regional, and local agency water quality protection

laws and regulations, and water quality control and/or sustainable groundwater management plans, including the Basin Plan (LARWQCB, 2014), as well as commonly used industry standards.

Alternative 1 would comply with the Caltrans NPDES Statewide Stormwater Permit, the City of Los Angeles Municipal Code, the City of Los Angeles and County of Los Angeles LID Ordinance, an equivalent to the Metro Rail Design Criteria, and all other applicable regulations for all operational activities, including adherence to an approved LID plan, which would identify the BMPs for Alternative 1 operations. The LID plan would identify the BMPs for the Alternative 1 post-construction design (i.e., operational characteristics to control/treat runoff for the range of potential pollutants) in accordance with current LID requirements. As the intent of LID infrastructure is to offset creation of impermeable surfaces by directing surface water toward permeable surfaces for infiltration and groundwater recharge, Alternative 1 would include design elements that serve to infiltrate stormwater in accordance with current LID requirements (e.g., depressed landscape gardens for runoff retention and infiltration, permeable surfaces to reduce runoff volume, hardscape replacement with pervious or planted substitutions, bioswales or artistic water features that creatively convey runoff into planted or pervious areas, and roof downspout discharges to vegetated areas), which would promote groundwater recharge.

Operation of Alternative 1 would not involve the extraction of any groundwater or use of groundwater supply. Therefore, Alternative 1 would not result in a decrease in groundwater supplies or interfere substantially with groundwater recharge to the extent that Alternative 1 may impede sustainable groundwater management of the basin. Depending on final design features, exfiltration from LID/treatment BMPs may improve groundwater recharge characteristics of the area. Additionally, natural treatment of infiltrated runoff would occur, thereby improving exfiltrated water from LID and water quality additions to the groundwater table.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts to groundwater supply and recharge during operations of Alternative 1 would be less than significant.

Construction Impacts

Construction of the Alternative 1 components would include route planning, site clearing and excavation, utility relocation, foundation construction, installation of support columns and beams, erection of stations, towers, and junctions, as well as construction of MSFs, TPSSs, roadway modifications, replacement or restoration of paving, sidewalks, parking, and landscaping, and the installation of rails and vehicles.

The construction activities for the modifications of the freeway would include the demolition of existing pavement and structures, excavation and grading of the site, construction of the base layer, installation of retaining walls, and paving of roadways along I-405.

Construction activities associated with guideway column foundations would include excavation and concrete work. Excavations for foundations would occur between 6 and 8 feet bgs, and piles would be installed up to approximately 80 feet bgs. Groundwater levels in the Project Study Area generally range from depths of approximately 16 to 115 feet bgs (Metro, 2023), with deeper groundwater depths occurring at the base of the Santa Monica Mountains. The Alternative 1 alignment may require the removal of groundwater that seeps into boreholes during construction. Groundwater encountered during construction would be removed from the boreholes, containerized, and analyzed consistent with existing applicable regulations to determine the proper disposal method. Dewatering would be limited

to the construction phase only. Extracting large volumes of groundwater that would decrease groundwater supplies would not be expected during construction. The volume of groundwater removed during construction would be monitored and documented.

Alternative 1 would be required to comply with all applicable water quality protection laws and regulations at the federal, state, regional, and local levels, as well as commonly used industry standards. These include the CWA, Porter-Cologne Water Quality Control Act, State of California Anti Degradation Policies, NPDES CGP, the MS4 Permit, the Caltrans NPDES Statewide Stormwater Permit and the Construction Site BMP Manual (Caltrans, 2017), and the City of Los Angeles and County of Los Angeles LID Ordinance.

Due to the limited amount of groundwater seepage anticipated to be encountered, and with adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts to groundwater supply and recharge during construction of Alternative 1 would be less than significant.

Alternative 3

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

Alternative 3 shares similar components described for Alternative 1 except that the Alternative 3 alignment would be underground in a TBM-bored tunnel south from Getty Center Station to I-405 at Wilshire Boulevard and two stations would be underground. Information on increases in impervious surface area is provided in Table 3.9-3, and regulatory compliance requirements to address groundwater discharge and recharge would be the same as those presented for Alternative 1. Operation of Alternative 3, including the underground stations, would not involve the extraction of any groundwater and would not be expected to impact groundwater supplies or groundwater recharge. Therefore, Alternative 3 would not result in a decrease in groundwater supplies or interfere substantially with groundwater recharge to the extent that Alternative 3 may impede sustainable groundwater management of the basin. Depending on final design features, exfiltration from LID/treatment BMPs may improve groundwater recharge characteristics of the area. Additionally, natural treatment of infiltrated runoff would occur, thereby improving exfiltrated water from LID and water quality additions to the groundwater table.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts to groundwater supply and recharge during operations of Alternative 3 would be less than significant.

Construction Impacts

Construction activities associated with the above ground portions of the Alternative 3 MRT alignment would be the same as those previously described for Alternative 1. The construction impacts discussion for Alternative 1 presents the regulatory compliance requirements to address groundwater impacts.

The proposed bored tunnel for Alternative 3 would cut through the south flanks of the Santa Monica Mountains and extend beneath the Bel Air Country Club and UCLA campus. The depth of the proposed tunnel would range from 30 feet to 300 feet in the south flanks of the Santa Monica Mountains. As the

tunnel extends through Westwood area, it would be shallower and transition to a bored tunnel at depths ranging from 80 to 110 feet. The groundwater depth is shallow by Wilshire Boulevard/Metro D Line Station ranging from approximately 30 to 40 feet. There is potential for groundwater to be encountered during tunnel boring activities in areas where the tunnel invert is below groundwater level; however, proposed tunnel boring activities would not be expected to require dewatering because tunnel boring would involve a closed mode machine that would operate under the water table, and a precast concrete tunnel liner (designed for full hydrostatic pressure) would be installed post-excavation. Both of these features would substantially reduce (if not eliminate) groundwater ingress during construction.

If dewatering is required, groundwater would be removed, containerized, and analyzed consistent with existing applicable regulations to determine the proper disposal method, or the dewatered water would potentially be treated and reused on-site (e.g., for dust control or cleaning equipment) rather than being disposed. Dewatering would be limited to the construction phase only. Extracting large volumes of groundwater that would decrease groundwater supplies would not be expected during construction. The volume of groundwater removed during construction would be monitored and documented.

Alternative 3 would be required to comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, as well as commonly used industry standards. These include the CWA, Porter-Cologne Water Quality Control Act, State of California Antidegradation Policies, NPDES CGP, the MS4 Permit, Caltrans NPDES Statewide Stormwater Permit, and the City of Los Angeles and County of Los Angeles LID Ordinance.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, construction activities are not anticipated to interfere substantially with groundwater recharge or groundwater resource supplies, and potential impacts to groundwater supply and recharge during construction of Alternative 3 would be less than significant.

Alternative 4

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

During operation, Alternative 4 would result in a net decrease in impervious surfaces compared to existing conditions because most of the land surfaces in the Project Study Area are developed and covered by existing impervious surfaces.

Operation of underground stations and tunnels would not be expected to impact groundwater supplies or groundwater recharge. A precast concrete tunnel liner designed for full hydrostatic pressure would be installed post-excavation, which would substantially reduce (if not eliminate) groundwater ingress during operations. Groundwater intrusion into underground facilities is not anticipated.

Alternative 4 would be designed to incorporate several sustainability features, such as pervious pavement, native landscaping/soil improvements, landscaped stormwater conveyance, on-site retention, and other appropriate and applicable design features that serve to capture, treat, and re-use stormwater in compliance with current LID requirements, promoting infiltration and groundwater recharge (after treatment). These measures and practices would be incorporated at applicable component sites along the Alternative 4 alignment. Alternative 4 would be required to comply with all

applicable federal, state, regional, and local agency water quality protection laws and regulations, and water quality control and/or sustainable groundwater management plans, including the Basin Plan (LARWQCB, 2014), as well as commonly used industry standards.

Alternative 4 would comply with the Caltrans NPDES Statewide Stormwater Permit, City of Los Angeles Municipal Code, the City of Los Angeles and County of Los Angeles LID Ordinance, an equivalent to the MRDC, and all other applicable regulations for all operational activities, including adherence to an approved Alternative 4-specific LID plan, which would identify the BMPs for Alternative 4 operations. The LID plan would identify the BMPs for Alternative 4 post-construction design (i.e., operational characteristics to control/treat runoff for the range of potential pollutants) in accordance with current LID requirements. As the intent of LID infrastructure is to offset creation of impermeable surfaces by directing surface water toward permeable surfaces for infiltration and groundwater recharge, Alternative 4 would include design elements that serve to infiltrate stormwater in accordance with current LID requirements (e.g., depressed landscape gardens for runoff retention and infiltration, permeable surfaces to reduce runoff volume, hardscape replacement with pervious or planted substitutions, bioswales or artistic water features that creatively convey runoff into planted or pervious areas, and roof downspout discharges to vegetated areas), which would promote groundwater recharge.

Additionally, operation of Alternative 4, including the underground stations, would not involve the extraction of any groundwater and would not be expected to impact groundwater supplies or groundwater recharge. Therefore, Alternative 4 would not be expected to result in a decrease in groundwater supplies or interfere substantially with groundwater recharge to the extent that Alternative 4 may impede sustainable groundwater management of the basin. Depending on final design features, exfiltration from LID/treatment BMPs is anticipated to improve groundwater recharge characteristics of the area. Additionally, natural treatment of infiltrated runoff would occur, thereby improving exfiltrated water from LID and water quality additions to the groundwater table.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts to groundwater supply and recharge during operations of Alternative 4 would be less than significant.

Construction Impacts

Construction activities associated with foundations would include excavation and concrete work, installation of drilled piles, aerial guideway, and tunneling. As previously discussed, excavations for stations, piles, and other underground structures would be performed up to depths of 6 to 140 feet bgs, and the tunnel depth would range from 40 to 470 feet bgs.

The Alternative 4 alignment may encounter groundwater in shallower areas and would require the removal of nuisance water that seeps into boreholes during construction. Nuisance water and seepage encountered during construction would be removed from the boreholes, containerized, and analyzed consistent with existing applicable regulations to determine the proper disposal method or possible treatment and reuse on-site.

Alternative 4 would include two tunnel segments running from the southern terminus of the Alternative 4 alignment to the north base of the Santa Monica Mountains. The depth of cover for the tunnel through the southern segment of the Alternative 4 alignment would vary from approximately 40 feet to 90 feet bgs. The depth of cover for the central segment of the Alternative 4 alignment would vary from approximately 470 feet as it passes under the Santa Monica Mountains to 70 feet near UCLA. The

groundwater depth along both segments of the tunnel varies from 40 to 320 feet bgs. There is potential for groundwater to be encountered during tunnel boring activities in areas where the tunnel invert is below groundwater level; however, proposed tunnel boring activities would not be expected to require dewatering because tunnel boring would involve a closed mode machine, which would operate under the water table, and a precast concrete tunnel liner (designed for full hydrostatic pressure) would be installed post-excavation. Both of these features would substantially reduce (if not eliminate) groundwater ingress during construction. Any dewatering would be limited to the construction phase only. The volume of groundwater extracted during construction would not be expected to decrease groundwater supplies. The volume of groundwater removed during construction would be monitored and documented.

Alternative 4 would be required to comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, as well as commonly used industry standards. These include the CWA, Porter-Cologne Water Quality Control Act, State of California Antidegradation Policies, NPDES CGP, the MS4 Permit, Caltrans NPDES Statewide Stormwater Permit, and the City of Los Angeles and County of Los Angeles LID Ordinance.

Due to the limited amount of nuisance seepage water anticipated to be encountered and because most of the existing surfaces at the Alternative 4 component sites are currently covered with impervious surfaces, construction activities are not anticipated to interfere substantially with groundwater recharge or groundwater resource supplies. Construction activities, including construction of underground structures, are not anticipated to decrease groundwater supplies such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts to groundwater supply and recharge during construction of Alternative 4 would be less than significant.

Alternative 5

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

Alternative 5 shares similar components as Alternative 4 and would not result in groundwater extraction or use of groundwater supply. The operational impacts discussion for Alternative 4 presents the regulatory design requirements for addressing groundwater impacts. Operation of Alternative 5, including the underground stations, would not involve the extraction of any groundwater and would not be expected to impact groundwater supplies or groundwater recharge. A precast concrete tunnel liner designed for full hydrostatic pressure would be installed post-excavation, which would substantially reduce (if not eliminate) groundwater ingress during operations. Groundwater intrusion into underground facilities is not anticipated. Therefore, Alternative 5 would not be expected to result in a decrease in groundwater supplies or interfere substantially with groundwater recharge to the extent that Alternative 5 may impede sustainable groundwater management of the basin. Depending on final design features, exfiltration from LID/treatment BMPs is anticipated to improve groundwater recharge characteristics of the area. Additionally, natural treatment of infiltrated runoff would occur, thereby improving exfiltrated water from LID and water quality additions to the groundwater table.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts to groundwater supply and recharge during operations of Alternative 5 would be less than significant.

Construction Impacts

Construction activities associated with foundations would include excavation and concrete work, installation of drilled piles, aerial guideway, and tunneling. As previously discussed, excavations for stations, piles, and other underground structures would occur at depths ranging between 6 to 140 feet bgs and tunnel depth would range from 40 feet to 470 feet deep.

The Alternative 5 alignment may encounter groundwater in shallower areas and would require the removal of nuisance water that seeps into boreholes during construction. Nuisance water and seepage encountered during construction would be removed from the boreholes, containerized, and analyzed consistent with existing applicable regulations to determine the proper disposal method or possible treatment and reuse on-site.

Alternative 5 would include a tunnel comprising three separate tunnel segments, one running north from the southern terminus to the UCLA Gateway Plaza Station, one running south from the Ventura Boulevard Station to the UCLA Gateway Plaza Station, and one running north from the Ventura Boulevard Station to the portal near Raymer Street. The depth of cover for the tunnel through the Westside would vary from approximately 40 feet to 90 feet. The depth of cover for the second segment would vary greatly from approximately 470 feet as it passes under the Santa Monica Mountains to 70 feet near UCLA. The depth of cover for the tunnel through the Valley would vary from approximately 40 feet near the Ventura Boulevard/Sepulveda Station and north of the Metro G Line Sepulveda Station to 150 feet near Weddington Street. The groundwater depth along segments of the proposed tunnel varies from 40 to 320 feet bgs.

There is potential for groundwater to be encountered during tunnel boring activities in areas where the tunnel invert is below groundwater level; however, proposed tunnel boring activities would not be expected to require dewatering because tunnel boring would involve a closed mode machine that would operate under the water table, and a precast concrete tunnel liner (designed for full hydrostatic pressure) would be installed post-excavation. Both of these features would substantially reduce (if not eliminate) groundwater ingress during construction. Any dewatering would be limited to the construction phase only. The volume of groundwater extracted during construction would not be expected to decrease groundwater supplies. The volume of groundwater removed during construction would be monitored and documented.

Alternative 5 would be required to comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, as well as commonly used industry standards. These include the CWA, Porter-Cologne Water Quality Control Act, State of California Antidegradation Policies, NPDES CGP requirements, the MS4 Permit, Caltrans NPDES Statewide Stormwater Permit, and the City of Los Angeles and County of Los Angeles LID Ordinance.

Due to the limited amount of nuisance seepage water anticipated to be encountered and because most of the existing surfaces at the Alternative 5 alignment component sites are currently covered with impervious surfaces, construction activities are not anticipated to interfere substantially with groundwater recharge or groundwater resource supplies. Construction activities, including construction of underground structures, are not anticipated to decrease groundwater supplies such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts to groundwater supply and recharge during construction of Alternative 5 would be less than significant.

Alternative 6

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

During operation, Alternative 6 would not increase impervious surfaces because most of the land surfaces in the Project Study Area are developed and covered by existing impervious surfaces. Alternative 6 would result in a net increase of approximately 395,539 square feet of pervious area compared to existing conditions.

Alternative 6 would be designed to incorporate several sustainability features, such as pervious pavement, native landscaping/soil improvements, and on-site retention, which serve to capture, treat, and re-use stormwater in accordance with current LID requirements, promoting infiltration and groundwater recharge (after treatment). These measures and practices would be incorporated at applicable component sites along the Alternative 6 alignment. Alternative 6 would be required to comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, and water quality control and/or sustainable groundwater management plans, including the Basin Plan (LARWQCB, 2014), as well as commonly used industry standards.

Alternative 6 would comply with the Caltrans NPDES Statewide Stormwater Permit, the City of Los Angeles Municipal Code, the City of Los Angeles and County of Los Angeles LID Ordinance, an equivalent to the Metro Rail Design Criteria (MRDC), and all other applicable regulations for all operational activities, including adherence to an approved Alternative 6-specific LID plan, which would identify the BMPs for Alternative 6 operations. The LID plan would identify the BMPs for the Alternative 6 post-construction design (i.e., operational characteristics to control/treat runoff for the range of potential pollutants) in accordance with current LID requirements. Alternative 6 would include design elements (e.g., depressed landscape gardens for runoff retention and infiltration, permeable surfaces to reduce runoff volume, hardscape replacement with pervious or planted substitutions, bioswales or artistic water features that creatively convey runoff into planted or pervious areas, and roof downspout discharges to vegetated areas) that would serve to infiltrate stormwater and promote groundwater recharge.

Additionally, operation of Alternative 6, including the underground stations and tunnels, would not involve the extraction of any groundwater and would not be expected to impact groundwater supplies or groundwater recharge. Groundwater intrusion into underground facilities is not anticipated. Therefore, Alternative 6 would not be expected to result in a decrease in groundwater supplies or interfere substantially with groundwater recharge to the extent that Alternative 6 may impede sustainable groundwater management of the basin. Depending on final design features, exfiltration from LID/treatment BMPs is anticipated to improve groundwater recharge characteristics of the area. Additionally, natural treatment of infiltrated runoff would occur, thereby improving exfiltrated water from LID and water quality additions to the groundwater table.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts to groundwater supply and recharge during operations of Alternative 6 would be less than significant.

Construction Impacts

Construction activities associated with foundations would include excavation and concrete work, installation of drilled piles, and tunneling. As previously discussed, excavations for station and other underground structures would occur at depths ranging between 60 and 255 feet and tunnel depth would range from 40 feet to 730 feet deep. Groundwater levels in the Project Study Area generally range from depths of approximately 40 to 310 feet bgs, with deeper groundwater depths occurring at the base of the Santa Monica Mountains.

The Alternative 6 alignment may encounter groundwater in shallower areas and would require the removal of nuisance water that seeps into boreholes during construction. Nuisance water and seepage encountered during construction would be removed from the boreholes, containerized, and analyzed consistent with existing applicable regulations to determine the proper disposal method or reuse on-site.

The tunnel alignment would be constructed over three segments. The majority of the tunnel invert along the proposed alignment is below groundwater level. However, from after Burbank Boulevard in the vicinity of the Metro G Line Station to the Van Nuys Metrolink Station, the tunnel invert is above the groundwater level. There is the potential for groundwater to be encountered during tunnel boring activities for the areas where the tunnel invert is below groundwater level; however, dewatering is expected to be minimal during pressurized-face TBM operations for bored soft-ground and bored rock tunnel segments. Pressurized-face TBMs are designed to maintain the pressure at the tunnel face to equal or slightly higher than the surrounding groundwater pressure. This balance in pressure prevents groundwater from flowing into the tunnel excavation. As the TBM advances, it would install pre-cast concrete segments (tunnel liners) behind the shield to form the tunnel's structural lining. The tunnel liners would be fitted with waterproof gaskets at the joints to seal the tunnel and prevent groundwater intrusion. Tunneling with pressurized, closed-faced TBMs and use of tunnel liners with waterproof gaskets would minimize or eliminate groundwater intrusion into the tunnel excavations and thus reduce groundwater depletion. In addition, project stations and shafts would be constructed with a watertight system (e.g., secant pile, slurry wall) to prevent groundwater intrusion.

Any dewatering would be limited to the construction phase only. The volume of groundwater extracted during construction would not be expected to decrease groundwater supplies. The volume of groundwater removed during construction would be monitored and documented. Therefore, construction activities are not anticipated to interfere substantially with groundwater recharge or groundwater resource supplies.

Alternative 6 would be required to comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, as well as commonly used industry standards. These include the CWA, Porter-Cologne Water Quality Control Act, State of California Antidegradation Policies, NPDES CGP, the MS4 Permit, Caltrans NPDES Statewide Stormwater Permit, and the City of Los Angeles and County of Los Angeles LID Ordinance.

Due to the limited amount of nuisance seepage water anticipated to be encountered and because most of the existing surfaces at the Alternative 6 alignment component sites are currently covered with impervious surfaces, and because Alternative 6 would result in a net increase in pervious area,

construction activities are not anticipated to interfere substantially with groundwater recharge or groundwater resource supplies. Construction activities, including construction of underground structures, are not anticipated to decrease groundwater supplies such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts to groundwater supply and recharge during construction of Alternative 6 would be less than significant.

Maintenance and Storage Facilities

Monorail Transit Maintenance and Storage Facility Base Design (Alternatives 1 and 3)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

As discussed in Section 3.9.4.2, Alternatives 1 and 3, the MSF Base Design would be required to comply with applicable federal, state, regional, and local agency water quality protection laws and regulations, and water quality control and/or sustainable groundwater management plans, including the Basin Plan, as well as commonly used industry standards. The MSF Base Design would include design elements that would serve to capture, treat, and re-use stormwater in accordance with current LID requirements, promoting infiltration and groundwater recharge. Operation of the proposed MSF Base Design would not involve the extraction of any groundwater. Dewatering would be limited to the construction phase only. Extracting large volumes of groundwater that would decrease groundwater supplies would not be expected during construction.

Due to the limited amount of groundwater seepage anticipated to be encountered and with adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts to groundwater supply and recharge during construction and operation of the MSF Base Design would be less than significant.

Monorail Transit Maintenance and Storage Facility Design Option 1 (Alternatives 1 and 3)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

As discussed in Section 3.9.4.2, Alternatives 1 and 3, the MSF Design Option 1 would be required to comply with applicable federal, state, regional, and local agency water quality protection laws and regulations, and water quality control and/or sustainable groundwater management plans, including the Basin Plan, as well as commonly used industry standards. The MSF Design Option 1 would include design elements that would serve to capture, treat, and re-use stormwater in accordance with current LID requirements, promoting infiltration and groundwater recharge. Operation of the MSF Design Option 1 would not involve the extraction of any groundwater. Dewatering would be limited to the construction phase only. Extracting large volumes of groundwater that would decrease groundwater supplies would not be expected during construction.

Due to the limited amount of groundwater seepage anticipated to be encountered, and with adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts to groundwater supply and recharge during construction and operation of the MSF Design Option 1 would be less than significant.

Electric Bus Maintenance and Storage Facility (Alternative 1)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

As discussed in Section 3.9.4.2, Alternative 1, the Electric Bus MSF would be required to comply with applicable federal, state, regional, and local agency water quality protection laws and regulations, and water quality control and/or sustainable groundwater management plans, including the Basin Plan, as well as commonly used industry standards. The Electric Bus MSF would include design elements that would serve to capture, treat, and re-use stormwater in accordance with current LID requirements, promoting infiltration and groundwater recharge. The electric bus operations would operate on existing roadways and would not require new impervious surfaces or infrastructure that could interfere with groundwater recharge. Operation of the proposed Electric Bus MSF would not involve the extraction of any groundwater. Dewatering would be limited to the construction phase only. Extracting large volumes of groundwater that would decrease groundwater supplies would not be expected during construction.

As no groundwater seepage is anticipated to be encountered, and with adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts to groundwater supply and recharge during construction and operation of the Electric Bus MSF would be less than significant.

Heavy Rail Transit Maintenance and Storage Facility (Alternatives 4 and 5)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

The MSF would be designed to incorporate several sustainability features in compliance with the *LID Standards Manual*, which would serve to promote infiltration and groundwater recharge. It would also comply with all applicable federal, state, regional and local agency water quality protection laws and regulations, and water quality control and/or sustainable groundwater management plans, including the *Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan) (LARWQCB, 2014), as well as commonly used industry standards.

The MSF would comply with an MRDC equivalent, City of Los Angeles Municipal Code, and all other applicable regulations for all operational activities, including adherence to an approved LID Plan, which would identify the BMPs for MSF operations. The LID Plan would identify the BMPs for the MSF's post-construction design (i.e., operational characteristics to control/treat runoff). The MSF would include design elements that would serve to capture and re-use stormwater in accordance with current LID requirements, such as depressed landscape gardens for runoff retention and infiltration, permeable surfaces to reduce runoff volume, hardscape replacement with pervious or planted substitutions,

bioswales or artistic water features that creatively convey runoff into planted or pervious areas, roof downspout discharges to vegetated areas, and rainwater cisterns and other onsite stormwater retention methods. These measures and practices would be incorporated at applicable component sites within the MSF site. Additionally, operation of the MSF would not involve the extraction of any groundwater. Dewatering would be limited to the construction phase only. Extracting large volumes of groundwater that would decrease groundwater supplies would not be expected during construction. Therefore, the MSF would not be expected to result in a decrease in groundwater supplies or interfere substantially with groundwater recharge to the extent that the proposed MSF may impede sustainable groundwater management of the basin. Depending on final design features, exfiltration from LID BMPs is anticipated to improve groundwater recharge characteristics of the area.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts to groundwater supply and recharge during construction and operations of the MSF would be less than significant.

Heavy Rail Transit Maintenance and Storage Facility (Alternative 6)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

The MSF would be designed to incorporate several sustainability features in compliance with the LID Standards Manual, which would serve to promote infiltration and groundwater recharge. It would also comply with all applicable federal, state, regional and local agency water quality protection laws and regulations, and water quality control and/or sustainable groundwater management plans, including the Basin Plan (LARWQCB, 2014), as well as commonly used industry standards.

The MSF would comply with an MRDC equivalent, City of Los Angeles Municipal Code, and all other applicable regulations for all operational activities, including adherence to an approved LID Plan, which would identify the BMPs for MSF operations. The LID Plan would identify the BMPs for the MSF's post-construction design (i.e., operational characteristics to control/treat runoff). The MSF would include design elements that would serve to capture and re-use stormwater in accordance with current LID requirements, such as depressed landscape gardens for runoff retention and infiltration, permeable surfaces to reduce runoff volume, hardscape replacement with pervious or planted substitutions, bioswales or artistic water features that creatively convey runoff into planted or pervious areas, roof downspout discharges to vegetated areas, and rainwater cisterns and other onsite stormwater retention methods. These measures and practices would be incorporated at applicable component sites within the MSF site. Additionally, operation of the MSF would not involve the extraction of any groundwater. Dewatering would be limited to the construction phase only. Extracting large volumes of groundwater that would decrease groundwater supplies would not be expected during construction. Therefore, the MSF would not be expected to result in a decrease in groundwater supplies or interfere substantially with groundwater recharge to the extent that the proposed MSF may impede sustainable groundwater management of the basin. Depending on final design features, exfiltration from LID BMPs is anticipated to improve groundwater recharge characteristics of the area.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts to groundwater supply and recharge during construction and operations of the MSF would be less than significant.

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

i) result in substantial erosion or siltation on- or off-site

ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite

iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

iv) impede or redirect flood flows?

Project Alternatives

No Project Alternative

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

Under the No Project Alternative, the Project would not be developed and as a result any Project-related potential impacts would not occur. The only transit improvement within the Project Study Area that is reasonably foreseeable in absence of the Project would be the rerouting of Metro Line 761. Since Metro Line 761 is an existing bus route operating along existing streets and highways, there is limited potential for changes to drainage characteristics within the Project Study Area. Minor curb modifications may be required to install potential stations for the bus route; however, it is anticipated that such changes would result in less than significant impacts related to site drainage. It is unlikely that any improvements associated with the No Project Alternative would alter the course of a stream or river as these are heavily regulated by local, regional, or federal agencies.

With adherence to existing laws and regulations and proper implementation of stormwater compliance requirements, potential impacts related to substantial erosion or siltation, a substantial increase in the rate or amount of surface runoff that would cause flooding, creation of runoff that would exceed drainage system capacity or provide additional sources of polluted runoff, or impede or redirect flood flows during operation of the No Project Alternative would be less than significant.

Construction Impacts

During construction, improvements associated with Metro Line 761 would be required to comply with all applicable water quality protection laws and regulations at the federal, state, regional, and local levels, as well as commonly used industry standards. These include the CWA, Porter-Cologne Water Quality Control Act, State of California Antidegradation Policies, NPDES CGP, the MS4 Permit, the Caltrans NPDES Statewide Stormwater Permit, and the City of Los Angeles and County of Los Angeles LID Ordinance.

With adherence to existing laws and regulations and proper implementation of stormwater compliance requirements, and because any construction impacts would be temporary, potential impacts related to substantial erosion or siltation, a substantial increase in the rate or amount of surface runoff that would

cause flooding, creation of runoff that would exceed drainage system capacity or provide additional sources of polluted runoff, or impede or redirect flood flows during construction of the No Project Alternative would be less than significant.

Alternative 1

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

Components that would increase the existing impervious surface area include the Metro E Line Station, Santa Monica Boulevard Station, Wilshire Boulevard/Metro D Line Station, Getty Center Station, Sherman Way Station, TPSSs, and proposed MSFs. Additionally, freeway modifications including realignment of existing lanes, columns in the medians, new median barriers, or shoulders required to operate Alternative 1 would increase the existing impervious areas.

All of the stations would be in an aerial configuration, so the ground level area that would be impervious would be limited to the column footings, as well as vertical circulation elements such as elevators and stairs. However, because there are many columns in proximity, as a conservative approach the analysis includes aboveground elements of these components, including the station canopies and platforms to calculate the total impervious area created by the Alternative 1 components. The proposed stations would not result in a significant increase in impervious surfaces compared to the area of the watershed and groundwater basin, because most of the land surfaces in the Project Study Area are developed and covered by existing impervious surfaces. However, the TPSSs and I-405 freeway modifications that include new or relocated ramps, expanded shoulders, column locations, and retaining walls would result in an increase in impervious surface areas. Table 3.9-2 lists the existing impervious surface area, estimated amount of new/reconstructed impervious surfaces added by Alternative 1 components, and the net impervious surface area created.

The Alternative 1 stations would generally be in the public ROW and on impervious/paved surfaces, with the exception of the Wilshire Boulevard/Metro D Line Station, Getty Center Station, and the Sherman Way Station, which would be constructed on landscaped areas and an undeveloped hillside, respectively. Additionally, the Santa Monica Boulevard Station and the Ventura Boulevard Station would be constructed on parcels containing some existing pervious surfaces, which would be maintained.

The proposed roadway modifications would involve grading, paving, retaining walls, and drainage system improvements, including improvements to stormwater quantity control facilities and stormwater quality control devices as needed. The proposed roadway modifications to I-405 would increase impervious surfaces and stormwater runoff along the Alternative 1 alignment, which would result in increases in flooding and erosion potential and pollutant discharge (e.g., sediment/siltation, petroleum products/lubricants, metals, paints, and solvents) to surface receiving waters. Any increase in impervious surface area would potentially increase runoff rates, pollutant concentrations, and pollutant loading. However, as discussed in Section 3.9.4.1, LID features would be implemented to maintain existing drainage patterns, reduce runoff amounts, and minimize pollutant discharge.

To accommodate the proposed roadway widenings, existing drainage systems may need to be modified or removed. However, adherence to existing regulations and review from Caltrans, LA County, and LADWP on design and specifications for the drainage modifications would ensure that the drainage

meets all applicable standards and requirements for stormwater management. Existing Caltrans and Los Angeles County Flood Control District (LACFCD) drainage mainline would be maintained, and the existing drainage patterns would be maintained as much as possible. Alternative 1 design and LID BMPs would offset any increases in flow and changes to drainage patterns post-Alternative 1. Operation of Alternative 1 would not alter the course of any streams or rivers or impede or redirect flows.

As previously described, Alternative 1 would be designed to incorporate several sustainability features and would be required to comply with the LID Standards Manual and the City of Los Angeles *Planning and Land Development Handbook for Low Impact Development*, which would serve to reduce impervious area, promote infiltration, and reduce runoff, thereby improving water quality. Alternative 1 would also comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, and water quality control and/or sustainable groundwater management plans, including the *Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan) (LARWQCB, 2014), the MS4 Permit, and commonly used industry standards. Alternative 1 would comply with the Caltrans NPDES Statewide Stormwater Permit, the City of Los Angeles Municipal Code, the City of Los Angeles and County of Los Angeles LID Ordinance, and all other applicable regulations for all operational activities, including adherence to an approved Alternative 1-specific LID plan, which would identify the BMPs for Alternative 1 operations. The LID plan would identify the BMPs for the Alternative 1 post-construction design (i.e., operational characteristics to control/treat runoff for the range of potential pollutants). Alternative 1 would include design elements that serve to infiltrate, capture and re-use stormwater in accordance with current LID requirements — thereby minimizing the potential for increased runoff rates/amounts, flooding, erosion/siltation, and pollutant runoff. LID design features would slow (detain or retain) stormwater, which would reduce the runoff volume discharged from Alternative 1 and would decrease the peak runoff discharge velocity for design storms — which would also ultimately reduce the amount of stormwater runoff burden into the city's stormwater conveyance systems. As a result, LID design would reduce flow to maintain pre-Alternative 1 conditions; therefore, less flow with fewer pollutants would be transported through the conveyance systems, which would minimize flooding potential and pollutant transport into surface receiving waters.

Alternative 1 is anticipated to require Industrial General Permit (IGP) coverage for maintenance facilities, fueling operations, equipment cleaning/washing operations, and TPSSs. As such, an IGP SWPPP would be prepared and submitted to the SWRCB prior to operations and adhered to during operations. IGP SWPPP BMPs would include good housekeeping, prevention and maintenance activities, material handling and waste management, erosion and sediment controls, training, recordkeeping, and reporting of spills or releases. Other BMPs for the protection of water quality may also be employed as appropriate, such as indoor/covered areas for cabin maintenance, approved flammable/hazmat storage lockers for lubricants and other industrial liquids, drip/spill protection in maintenance areas and similar BMPs when conducting tower maintenance, dry clean-up practices, and dedicated enclosed areas for metal working, painting, and welding.

With adherence to existing laws and regulations and proper implementation of stormwater compliance requirements, potential impacts related to substantial erosion or siltation, a substantial increase in the rate or amount of surface runoff in a manner that would result in flooding, creation of runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or impede or redirect flood flows during operation of Alternative 1 would be less than significant.

Construction Impacts

The majority of the Metro E Line Station, Ventura Boulevard Station, Metro G Line Station, and the Van Nuys Metrolink Station would be constructed on parcels that currently contain existing asphalt and concrete pavement on and/or adjacent to the road ROW, which is surrounded by existing development and structures. Construction activities such as demolition of existing site structures and excavation for foundations would temporarily expose bare soil, which would be at increased risk for erosion. Exposed or stockpiled soils would also be at increased risk for erosion. Construction activities would temporarily increase the potential for stormwater to contact other construction-related contaminants. Sediment from erosion and other pollutants would be carried by stormwater runoff into storm drain inlets and would affect water quality in Alternative 1 receiving waters (e.g., Pacoima Wash, Encino Creek, and the Los Angeles River) if not appropriately managed.

The proposed roadway modifications would involve grading, paving, retaining walls, and drainage system improvements, and would increase impervious surface area. Any increase in impervious surface area would increase stormwater runoff along the Alternative 1 alignment, which, if not properly managed, would result in localized increases in siltation, other pollutants, and changes in sediment loads in surface receiving waters. Additionally, placement of construction equipment and materials may temporarily affect existing drainage patterns. To accommodate the proposed roadway widenings, existing drainage systems may need to be modified or removed. However, adherence to existing regulations and review from Caltrans, LA County, and LADWP on design and specifications for the drainage modifications would ensure that the drainage meets all applicable standards and requirements for stormwater management. Existing Caltrans and LACFCD drainage mainlines, as well as current drainage patterns, would be maintained as much as possible.

The Santa Monica Boulevard Station and the Ventura Boulevard Station would be partially constructed on existing landscaped berms. To the extent possible, existing landscaping would be preserved, as the facilities would be primarily constructed on aerial platforms. The Wilshire Boulevard/Metro D Line Station, Santa Monica Boulevard Station, Getty Center Station, and the Sherman Way Station would be constructed on sites that currently consist of partial pervious surfaces. The existing pervious surfaces would help to control drainage, promote infiltration, and reduce runoff; however, placement of construction equipment and materials may temporarily affect existing drainage patterns.

As previously discussed, Alternative 1 would be required to comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, as well as commonly used industry standards. These include the CWA, Porter-Cologne Water Quality Control Act, State of California Antidegradation Polices, NPDES CGP regulations, Caltrans NPDES Statewide Stormwater Permit, Basin Plan, City of Los Angeles Municipal Code, the City of Los Angeles and County of Los Angeles LID Ordinance, and all other applicable regulations for all construction activities.

In accordance with the CGP, Alternative 1 would be required to prepare and submit a construction SWPPP, which must be submitted to the SWRCB prior to construction and adhered to during construction. Proper implementation of the construction SWPPP would avoid potential impacts to water quality. The construction SWPPP would identify the BMPs that would be in place to protect water quality prior to the start of construction activities and during construction. BMP categories would include erosion control, sediment control, non-stormwater management, and materials management BMPs. Although specific temporary construction-related BMPs would be selected at the time of SWPPP preparation, potential BMPs would likely include fiber rolls, bonded-fiber matrix hydroseeding, soil furrowing, water bars, and check dams for erosion control, inlet protection (sand/gravel bags and

geotextiles), silt fencing, sediment traps/basins for sediment controls, soil berming around disturbed areas, and phasing of soil disturbance during the wet season (i.e., limiting widespread grading) for effectively managing erosion and pollutant discharge during significant rainfall events.

Construction activities would temporarily impact localized drainage patterns; however, these impacts would not substantially increase the rate or volume of stormwater flows. Construction activities would comply with all applicable federal and local floodplain regulations, including the *Los Angeles County Comprehensive Floodplain Management Plan*. Furthermore, implementation of runoff control measures and pollution prevention practices would control stormwater runoff from Alternative 1 construction areas and would minimize construction-related flooding impacts, erosion, and pollutant discharge.

With adherence to existing laws and regulations and proper implementation of stormwater compliance requirements, potential impacts related to substantial erosion or siltation, a substantial increase in the rate or amount of surface runoff that would cause flooding, creation of runoff that would exceed drainage system capacity or provide additional sources of polluted runoff, or impede or redirect flood flows during construction of Alternative 1 would be less than significant.

Alternative 3

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

While Alternative 3 includes two underground stations, both in areas with existing impervious surfaces, Alternative 3 shares all of the same components described for Alternative 1. Therefore, information on regulatory compliance to address site runoff and drainage would be the same as Alternative 1. The operational impacts discussion for Alternative 1 presents the regulatory requirements to address drainage. Operation of Alternative 3 would not result in substantial erosion or siltation, a substantial increase in the rate or amount of surface runoff that would cause flooding, creation of runoff that would exceed drainage system capacity, or provide additional sources of polluted runoff, or impede or redirect flood flows.

With adherence to existing laws and regulations and proper implementation of stormwater compliance requirements, potential impacts to substantial erosion or siltation, a substantial increase in the rate or amount of surface runoff that would cause flooding, creation of runoff that would exceed drainage system capacity or provide additional sources of polluted runoff, or impede or redirect flood flows during operation of Alternative 3 would be less than significant.

Construction Impacts

Section 3.9.4.3, Alternative 1 Construction Impacts, presents the impact evaluation of the Alternative 3 components and discusses the regulatory requirements to address site runoff and drainage. Construction of Alternative 3 would also include tunneling and cut-and-cover construction. Tunneling activities may encounter groundwater ingress, which would require dewatering in compliance with applicable NPDES permits and WDRs. Drilling fluids and tunnel spoils generated during boring operations would be properly managed to prevent pollutant discharge. Cut-and-cover construction for underground stations may temporarily increase erosion or sediment discharge, which would be addressed through erosion control BMPs such as silt fencing and sediment basins.

With adherence to existing laws and regulations and proper implementation of stormwater compliance requirements, potential impacts related to substantial erosion or siltation, a substantial increase in the rate or amount of surface runoff that would cause flooding, creation of runoff that would exceed drainage system capacity or provide additional sources of polluted runoff, or impede or redirect flood flows during construction of Alternative 3 would be less than significant.

Alternative 4

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

Operation of Alternative 4 would result in a net decrease in impervious surfaces compared to existing conditions because the Alternative 4 alignment and components would generally be in the public ROW and partially underground, and other land surfaces in the Project Study Area are developed and covered by existing impervious surfaces, including the footprint of the Alternative 4 components.

Components that may increase (based on initial estimates) the existing impervious surface area include the UCLA Gateway Plaza Station, Metro G Line Station, and the Van Nuys Metrolink Station. The actual footprint of Alternative 4 at the ground level would be less than the total amount of impervious surface area created by the Alternative 4 components. The footprints of the Alternative 4 components would be nominal when compared to the area of the watershed. Table 3.9-4 lists the existing impervious surface area, estimated amount of new/reconstructed impervious surfaces added by Alternative 4 components, and the net impervious surface area created.

Any increase in impervious surface area would potentially increase runoff rates, pollutant concentrations, and pollutant loading. Even though Alternative 4 would result in a net decrease in impervious area compared to existing conditions, LID features would be implemented to maintain existing drainage patterns, reduce runoff amounts, and minimize pollutant discharge. Alternative 4 design and LID BMPs would offset any increases in flow and changes to drainage patterns post-Alternative 4. Operation of Alternative 4 would not alter the course of any streams or rivers or impede or redirect flows. Existing drainage patterns would be maintained as much as possible.

As previously described, Alternative 4 would be designed to incorporate sustainability features and would be required to comply with the LID Standards Manual (LADPW, 2014) and the City of Los Angeles *Planning and Land Development Handbook for Low Impact Development* (City of Los Angeles Department of Sanitation, 2016), which would serve to reduce impervious area, promote infiltration, and reduce runoff, thereby improving water quality. Alternative 4 would also comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, and water quality control plans including the Basin Plan (LARWQCB, 2014) and the MS4 Permit, as well as commonly used industry standards.

Alternative 4 would comply with the Caltrans NPDES Statewide Stormwater Permit, the City of Los Angeles Municipal Code, the City of Los Angeles and County of Los Angeles LID Ordinance, and all other applicable regulations for all operational activities, including adherence to an approved Alternative 4-specific LID plan, which would identify the BMPs for Alternative 4 operations. The LID plan would identify the BMPs for Alternative 4 post-construction design (i.e., operational characteristics to control/treat runoff for the range of potential pollutants). Alternative 4 would include design elements

that would serve to infiltrate, capture and re-use stormwater in accordance with current LID requirements — thereby minimizing the potential for increased surface runoff, flooding, erosion and siltation, and pollutant discharge. LID design features would slow (detain or retain) stormwater, which would reduce the runoff volume discharged from Alternative 4 and would decrease the peak runoff discharge velocity for design storms — which would also ultimately reduce the amount of stormwater runoff burden into the city's stormwater conveyance systems. As a result, LID design would reduce flow to maintain pre-Alternative 4 conditions; therefore, less flow with fewer pollutants would be transported through the conveyance systems minimizing the potential for flooding and pollutant transport into surface receiving waters.

Alternative 4 is anticipated to require Industrial General Permit (IGP) coverage for maintenance facilities, fueling operations, equipment cleaning/washing operations, and TPSSs. As such, an IGP SWPPP would be prepared and submitted to the SWRCB prior to operations and adhered to during operations. IGP SWPPP BMPs would include good housekeeping, prevention and maintenance activities, material handling and waste management, erosion and sediment controls, training, recordkeeping, and reporting of spills or releases. Other BMPs may also be employed as appropriate, such as indoor/covered areas for cabin maintenance, approved flammable/hazmat storage lockers for lubricants and other industrial liquids, drip/spill protection in maintenance areas and similar BMPs when conducting tower maintenance, dry clean-up practices, and dedicated enclosed areas for metal working, painting, and welding.

With adherence to existing laws and regulations and proper implementation of stormwater compliance requirements, potential impacts related to substantial erosion or siltation, a substantial increase in the rate or amount of surface runoff resulting in flooding, creation of runoff that would exceed drainage system capacity or provide additional sources of polluted runoff, or impede or redirect flood flows during operation of Alternative 4 would be less than significant.

Construction Impacts

Construction activities such as demolition of existing site structures and excavation for foundations would temporarily expose bare soil, which would be at increased risk for erosion. Exposed or stockpiled soils would also be at increased risk for erosion. Sediments resulting from erosion might accumulate, blocking storm drain inlets and causing downstream sedimentation. Uncontrolled erosion and discharge of sediments and other potential pollutants would affect water quality in the Alternative 4 receiving waters if not appropriately managed by proper implementation of the construction SWPPP.

The construction of new impervious surfaces would increase the rate of runoff, pollutant concentrations, and pollutant loading from these new impervious surfaces. Construction activities would temporarily increase the potential for stormwater to contact other construction-related contaminants creating additional sources of pollutant runoff. Additionally, placement of construction equipment and materials may temporarily impact localized drainage patterns. To address these temporary impacts, Alternative 4 would implement runoff control measures and pollution prevention practices in compliance with the construction SWPPP to control runoff rates/amounts and the discharge of potential pollutants. Existing drainage systems would be modified where applicable and the existing drainage patterns would be maintained as much as possible and monitored throughout construction.

Alternative 4 would be located within the Los Angeles Watershed and the Santa Monica Bay Watershed in the Ballona Creek subwatershed. The vast majority of land in the Los Angeles Watershed (approximately 80 percent) is developed with urban uses. Most of the Ballona Creek subwatershed drainage network has been modified into storm drains, underground culverts, and open concrete

channels. A few natural channels remain in the Santa Monica Mountains and Baldwin Hills. Construction activities associated with Alternative 4, such as excavation near the Santa Monica Mountains and Baldwin Hills, and tunneling through the Eastern Santa Monica Mountains, would temporarily impact the drainage course of these natural channels. However, any impacts to channels would be temporary and would be minimized with implementation of a SWPPP, which would help to maintain existing drainage patterns and control stormwater runoff from construction areas.

As previously discussed, Alternative 4 would be required to comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, as well as commonly used industry standards. These include the CWA, Porter-Cologne Water Quality Control Act, State of California Antidegradation Polices, NPDES CGP regulations, Caltrans NPDES Statewide Stormwater Permit, Basin Plan, City of Los Angeles Municipal Code, the City of Los Angeles and County of Los Angeles LID Ordinance, and all other applicable regulations for all construction activities.

In accordance with the CGP, Alternative 4 would be required to prepare and submit a construction SWPPP, which must be submitted to the SWRCB prior to construction and adhered to during construction. Proper implementation of the construction SWPPP would avoid potential impacts to water quality. The construction SWPPP would identify the BMPs that would be in place to protect water quality prior to the start of construction activities and during construction. BMP categories would include erosion control, sediment control, non-stormwater management, and materials management BMPs. Although specific temporary construction-related BMPs would be selected at the time of SWPPP preparation, potential BMPs would likely include fiber rolls, bonded-fiber matrix hydroseeding, soil furrowing, water bars, and check dams for erosion control, inlet protection (sand/gravel bags and geotextiles), silt fencing, sediment traps/basins for sediment controls, soil berming around disturbed areas, and phasing of soil disturbance during the wet season (i.e., limiting widespread grading) for effectively managing erosion and pollutant discharge during significant rainfall events.

Construction activities would temporarily impact localized drainage patterns; however, these impacts would not substantially increase the rate or volume of stormwater flows. Construction activities would comply with all applicable federal and local floodplain regulations, including the *Los Angeles County Comprehensive Floodplain Management Plan*. Furthermore, implementation of runoff control measures and pollution prevention practices would control stormwater runoff from the Alternative 4 construction areas and would minimize construction-related flooding impacts, erosion, and pollutant discharge.

With adherence to existing laws and regulations and proper implementation of stormwater compliance requirements, potential impacts related to substantial erosion or siltation, a substantial increase in the rate or amount of surface runoff resulting in flooding, creation of runoff that would exceed drainage system capacity or provide additional sources of polluted runoff, or impede or redirect flood flows during construction of Alternative 4 would be less than significant.

Alternative 5

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

Alternative 5 shares all of the same components described for Alternative 4 and therefore, information on regulatory compliance to address site runoff and drainage would be the same as Alternative 4. The

operational impacts discussion for Alternative 4 presents the regulatory requirements to address drainage. Operation of Alternative 5 would not result in substantial erosion or siltation, a substantial increase in the rate or amount of surface runoff that would cause flooding, creation of runoff that would exceed drainage system capacity or provide additional sources of polluted runoff, or impede or redirect flood flows.

With adherence to existing laws and regulations and proper implementation of stormwater compliance requirements, potential impacts to substantial erosion or siltation, a substantial increase in the rate or amount of surface runoff that would cause flooding, creation of runoff that would exceed drainage system capacity or provide additional sources of polluted runoff, or impede or redirect flood flows during operation of Alternative 5 would be less than significant.

Construction Impacts

Construction activities associated with Alternative 5 would be the same as those previously described for Alternative 4 components, and information on regulatory compliance to address site runoff and drainage would be the same as Alternative 4. The construction impacts discussion for Alternative 4 presents the regulatory requirements to address drainage.

With adherence to existing laws and regulations and proper implementation of stormwater compliance requirements, potential impacts related to substantial erosion or siltation, a substantial increase in the rate or amount of surface runoff that would cause flooding, creation of runoff that would exceed drainage system capacity or provide additional sources of polluted runoff, or impede or redirect flood flows during construction of Alternative 5 would be less than significant.

Alternative 6

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

Operation of Alternative 6 would not increase impervious surfaces compared to existing conditions because most of the Alternative 6 alignment would be underground and other land surfaces in the Project Study Area are developed and covered by existing impervious surfaces, including the footprints of Alternative 6 components. Components that would slightly increase the existing impervious surface area include the mountain shaft facility, TPSS structures, and the access road. However, new pervious surface would be created at the MSF on existing impervious surface. Therefore, Alternative 6 would result in a net increase of approximately 395,539 square feet of pervious area compared to existing conditions.

Even though Alternative 6 would result in a net decrease in impervious area and a net increase in pervious area compared to existing conditions, LID features would be implemented to maintain existing drainage patterns, reduce runoff amounts, and minimize pollutant discharge. Alternative 6 design and LID BMPs would offset any increases in flow and changes to drainage patterns post-Alternative 6. Operation of Alternative 6 would not alter the course of any streams or rivers or impede or redirect flows. Existing drainage patterns would be maintained as much as possible.

As previously described, Alternative 6 would be designed to incorporate several sustainability features in compliance with the LID Standards Manual (LADPW, 2014) and the City of Los Angeles *Planning and*

Land Development Handbook for Low Impact Development (City of Los Angeles Department of Sanitation, 2016), which would serve to reduce impervious area, promote infiltration, and reduce runoff, thereby improving water quality. It would also comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, and water quality control and/or sustainable groundwater management plans including the Basin Plan (LARWQCB, 2014) and the MS4 Permit, as well as commonly used industry standards.

Alternative 6 would comply with the Caltrans NPDES Statewide Stormwater Permit, the City of Los Angeles Municipal Code, the City of Los Angeles and County of Los Angeles LID Ordinance, and all other applicable regulations for all operational activities, including adherence to an approved Alternative 6-specific LID plan, which would identify the BMPs for Alternative 6 operations. The LID plan would identify the BMPs for Alternative 6 post-construction design (i.e., operational characteristics to control/treat runoff for the range of potential pollutants). Alternative 6 would include design elements that would serve to infiltrate, capture and re-use stormwater in accordance with current LID requirements — thereby minimizing the potential for increased surface runoff, flooding, erosion and siltation, and pollutant discharge. LID design features would slow (detain or retain) stormwater, which would reduce the runoff volume discharged from Alternative 6 and would decrease the peak runoff discharge velocity for design storms — which would also ultimately reduce the amount of stormwater runoff burden into the city's stormwater conveyance systems. As a result, LID design would reduce flow to maintain pre-Alternative 6 conditions; therefore, less flow with fewer pollutants would be transported through the conveyance systems, which would minimize the potential for flooding and pollutant transport into surface receiving waters.

Alternative 6 is anticipated to require Industrial General Permit (IGP) coverage for maintenance facilities, fueling operations, equipment cleaning/washing operations, and TPSSs. As such, an IGP SWPPP would be prepared and submitted to the SWRCB prior to operations and adhered to during operations. IGP SWPPP BMPs would include good housekeeping, prevention and maintenance activities, material handling and waste management, erosion and sediment controls, training, recordkeeping, and reporting of spills or releases. Other BMPs may also be employed as appropriate, such as indoor/covered areas for cabin maintenance, approved flammable/hazmat storage lockers for lubricants and other industrial liquids, drip/spill protection in maintenance areas and similar BMPs when conducting tower maintenance, dry clean-up practices, and dedicated enclosed areas for metal working, painting, and welding.

With adherence to existing laws and regulations and proper implementation of stormwater compliance requirements, potential impacts related to substantial erosion and siltation, a substantial increase in the rate or amount of surface runoff resulting in flooding, creation of runoff that would exceed drainage system capacity or provide additional sources of polluted runoff, or impede or redirect flood flows during operation of Alternative 6 would be less than significant.

Construction Impacts

Construction activities such as demolition of existing site structures and excavation for foundations would temporarily expose bare soil, which would be at increased risk for erosion. Exposed or stockpiled soils would also be at increased risk for erosion. Sediments resulting from erosion might accumulate, blocking storm drain inlets and causing downstream sedimentation. Uncontrolled erosion and discharge of sediments and other potential pollutants would be carried by stormwater runoff into storm drain inlets and would affect water quality in Alternative 6 receiving waters (e.g., Pacoima Wash, Tujunga Wash, and Los Angeles River) if not appropriately managed.

Even though Alternative 6 would result in a net decrease in impervious area, the construction of any new impervious surfaces would increase the rate of runoff, pollutant concentrations, and pollutant loading from these new impervious surfaces. Construction activities would temporarily increase the potential for stormwater to contact other construction-related contaminants creating additional sources of pollutant runoff. Additionally, placement of construction equipment and materials may temporarily impact localized drainage patterns.

Alternative 6 would be located within the Los Angeles River Watershed and the Santa Monica Bay Watershed in the Ballona Creek subwatershed. The vast majority of land in the Los Angeles Watershed (approximately 80 percent) is developed with urban uses. Most of the Ballona Creek subwatershed drainage network has been modified into storm drains, underground culverts, and open concrete channels. A few natural channels remain in the Santa Monica Mountains and Baldwin Hills. Construction activities associated with Alternative 6, such as excavation near Santa Monica Mountains and Baldwin Hills, and tunneling through the Eastern Santa Monica Mountains, would temporarily impact the drainage course of these natural channels. However, any impacts to channels would be temporary and would be minimized with implementation of a SWPPP, which would help to maintain existing drainage patterns and control stormwater runoff from construction areas.

The TPSS structures, the deep vent shaft structure at Stone Canyon Reservoir, additional vent shafts, and parking facilities adjacent to stations would be constructed on parcels that currently contain existing asphalt and concrete pavement on and/or adjacent to the road ROW and surrounded by existing development and structures. Construction of the Stone Canyon Reservoir vent shaft and other ancillary facilities near the Stone Canyon Reservoir may temporarily affect the natural drainage pattern.

Drainage facilities at the westbound I-10 loop off ramp to southbound Bundy Drive and the drainage facilities along the station box section of Santa Monica Boulevard would be impacted by Alternative 6. Placement of construction equipment and materials may temporarily affect existing drainage patterns.

To address these temporary impacts, Alternative 6 would implement runoff control measures and pollution prevention practices in compliance with the construction SWPPP to control runoff rates/amounts and the discharge of potential pollutants. Existing drainage systems would be modified where applicable and the existing drainage patterns would be maintained as much as possible and monitored throughout construction. In addition, drainage facilities would be replaced in kind at the end of the construction activities. At curb inlets on Santa Monica Boulevard, trash collection devices would be installed as part of water quality features of Alternative 6.

As previously discussed, Alternative 6 would be required to comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, as well as commonly used industry standards. These include the CWA, Porter-Cologne Water Quality Control Act, State of California Antidegradation Polices, NPDES CGP regulations, Caltrans NPDES Statewide Stormwater Permit, Basin Plan, City of Los Angeles Municipal Code, the City of Los Angeles and County of Los Angeles LID Ordinance, and all other applicable regulations for all construction activities.

In accordance with the CGP, Alternative 6 would be required to prepare and submit a construction SWPPP, which must be submitted to the SWRCB prior to construction, and adhered to during construction. Proper implementation of the construction SWPPP would avoid potential impacts to water quality. The construction SWPPP would identify the BMPs that would be in place to protect water quality prior to the start of construction activities and during construction. BMP categories would include erosion control, sediment control, non-stormwater management, and materials management BMPs. Although specific temporary construction-related BMPs would be selected at the time of SWPPP

preparation, potential BMPs would likely include fiber rolls, bonded-fiber matrix hydroseeding, soil furrowing, water bars, and check dams for erosion control, inlet protection (sand/gravel bags and geotextiles), silt fencing, sediment traps/basins for sediment controls, soil berming around disturbed areas, and phasing of soil disturbance during the wet season (i.e., limiting widespread grading) for effectively managing erosion and pollutant discharge during significant rainfall events.

Construction activities would temporarily impact localized drainage patterns; however, these impacts would not substantially increase the rate or volume of stormwater flows. Construction activities would comply with all applicable federal and local floodplain regulations, including the *Los Angeles County Comprehensive Floodplain Management Plan*. Furthermore, implementation of runoff control measures and pollution prevention practices would control stormwater runoff from construction areas and would minimize construction-related flooding impacts, erosion, and pollutant discharge.

With adherence to existing laws and regulations and proper implementation of stormwater compliance requirements, potential impacts related to substantial erosion or siltation, a substantial increase in the rate or amount of surface runoff resulting in flooding, creation of runoff that would exceed drainage system capacity or provide additional sources of polluted runoff, or impede or redirect flood flows during construction of Alternative 6 would be less than significant.

Maintenance and Storage Facilities

Monorail Transit Maintenance and Storage Facility Base Design (Alternatives 1 and 3)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

As described in Section 3.9.4.3, Alternatives 1 and 3, the MSF Base Design would comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, as well as commonly used industry standards. The MSF Base Design would include design elements that would serve to capture and re-use stormwater in accordance with current LID requirements — thereby minimizing the potential for increased runoff rates/amounts, flooding, erosion and siltation, and pollutant runoff. LID design features would slow (detain or retain) stormwater, which would reduce the runoff volume discharged from the MSF Base Design and would decrease the peak runoff discharge velocity for design storms. As a result, LID BMPs would offset any increases in flow and changes to drainage patterns post-MSF Base Design; therefore, less flow with fewer pollutants would be transported through the conveyance systems, which would minimize flooding and pollutant transport into surface receiving waters. In addition, existing drainage patterns would be maintained as much as possible and operation of the MSF Base Design would not alter the course of any streams or rivers or impede or redirect flows.

During operations, the MSF Base Design would be required to obtain IGP coverage. An IGP SWPPP would be prepared and submitted to the SWRCB prior to operations. The IGP SWPPP would include discharge prohibitions, effluent limitations, and receiving water limitations that must be adhered to during operations. IGP SWPPP BMPs would include good housekeeping, prevention and maintenance activities, material handling and waste management, erosion and sediment controls, training, recordkeeping, and reporting of spills or releases.

Construction activities would comply with all applicable federal and local floodplain regulations. Any impacts to existing drainage patterns would be temporary. Implementation of runoff control measures and pollution prevention practices in compliance with the construction SWPPP would control stormwater runoff from the MSF Base Design construction areas to minimize construction-related flooding impacts, erosion, and the discharge of potential pollutants, including sedimentation/siltation.

With adherence to existing laws and regulations and proper implementation of stormwater compliance requirements, potential impacts related to substantial erosion or siltation, a substantial increase in the rate or amount of surface runoff that would cause flooding, creation of runoff that would exceed drainage system capacity or provide additional sources of polluted runoff, or impede or redirect flood flows during construction and operation of the MSF Base Design would be less than significant.

Monorail Transit Maintenance and Storage Facility Design Option 1 (Alternatives 1 and 3)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

The previous impact evaluation provided for the MSF Base Design for Alternatives 1 and 3 is applicable to the MSF Design Option 1. The MSF Design Option 1 would be required to comply with applicable federal, state, regional, and local agency water quality protection laws and regulations, and water quality control and/or sustainable groundwater management plans, including the Basin Plan, as well as commonly used industry standards. The MSF Design Option 1 would include design elements that serve to capture and re-use stormwater in accordance with current LID requirements — thereby minimizing the potential for increased runoff rates/amounts, flooding, erosion and siltation, and pollutant runoff. In addition, existing drainage patterns would be maintained as much as possible and operation of the MSF Design Option 1 would not alter the course of any streams or rivers or impede or redirect flows.

Construction activities would comply with all applicable federal and local floodplain regulations and any impacts to existing drainage patterns would be temporary. Implementation of BMPs in compliance with the construction SWPPP would control stormwater runoff from the MSF Design Option 1 construction areas to minimize construction-related flooding impacts, erosion, and the discharge of potential pollutants, including sedimentation/siltation.

With adherence to existing laws and regulations and proper implementation of stormwater compliance requirements, potential impacts related to substantial erosion or siltation, a substantial increase in the rate or amount of surface runoff that would cause flooding, creation of runoff that would exceed drainage system capacity or provide additional sources of polluted runoff, or impede or redirect flood flows during construction and operation of the MSF Design Option 1 would be less than significant.

Electric Bus Maintenance and Storage Facility (Alternative 1)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

As described in Section 3.9.4.3, Alternative 1, the Electric Bus MSF would comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, as well as commonly used industry standards. The electric bus operations would operate on existing roadways and would not require additional impervious surfaces or drainage modifications. The Electric Bus MSF would include design elements that would serve to capture and re-use stormwater in accordance with current LID requirements — thereby minimizing the potential for increased runoff rates/amounts, flooding, erosion and siltation, and pollutant runoff. LID design features would slow (detain or retain) stormwater, which would reduce the runoff volume discharged from the Electric Bus MSF and would decrease the peak runoff discharge velocity for design storms. As a result, the Electric Bus MSF design and LID BMPs would offset any increases in flow and changes to drainage patterns post-Electric Bus MSF; therefore, less flow with fewer pollutants would be transported through the conveyance systems, which would minimize flooding potential and pollutant transport into surface receiving waters. In addition, existing drainage patterns would be maintained as much as possible and operation of the Electric Bus MSF would not alter the course of any streams or rivers or impede or redirect flows.

During operations, the Electric Bus MSF would be required to obtain IGP coverage. An IGP SWPPP would be prepared and submitted to the SWRCB prior to operations. The IGP SWPPP would include discharge prohibitions, effluent limitations, and receiving water limitations that must be adhered to during operations. IGP SWPPP BMPs would include good housekeeping, prevention and maintenance activities, material handling and waste management, erosion and sediment controls, training, recordkeeping, and reporting of spills or releases.

Construction activities would comply with all applicable federal and local floodplain regulations. Any impacts to existing drainage patterns would be temporary. Implementation of runoff control measures and pollution prevention practices in compliance with the construction SWPPP would control stormwater runoff from the Electric Bus MSF construction areas to minimize construction-related flooding impacts, erosion, and the discharge of potential pollutants, including sedimentation/siltation.

With adherence to existing laws and regulations and proper implementation of stormwater compliance requirements, potential impacts related to substantial erosion or siltation, a substantial increase in the rate or amount of surface runoff that would cause flooding, creation of runoff that would exceed drainage system capacity or provide additional sources of polluted runoff, or impede or redirect flood flows during construction and operation of the Electric Bus MSF would be less than significant.

Heavy Rail Transit Maintenance and Storage Facility (Alternatives 4 and 5)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

As described in Section 3.9.4.3, Alternatives 4 and 5, the MSF would comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, as well as commonly used industry standards. The MSF would include design elements that would serve to capture and re-use stormwater in accordance with current LID requirements — thereby minimizing the potential for increased runoff rates/amounts, flooding, erosion and siltation, and pollutant runoff. LID design features would slow (detain or retain) stormwater, which would reduce the runoff volume discharged from the

MSF and would decrease the peak runoff discharge velocity for design storms. As a result, MSF design and LID BMPs would offset any increases in flow and changes to drainage patterns post-MSF; therefore, less flow with fewer pollutants would be transported through the conveyance systems minimizing flooding and pollutant transport into surface receiving waters. In addition, existing drainage patterns would be maintained as much as possible and operation of the MSF would not alter the course of any streams or rivers or impede or redirect flows.

During operations, the MSF would be required to obtain IGP coverage. An IGP SWPPP would be prepared and submitted to the SWRCB prior to operations. The IGP SWPPP would include discharge prohibitions, effluent limitations, and receiving water limitations that must be adhered to during operations. IGP SWPPP BMPs would include good housekeeping, prevention and maintenance activities, material handling and waste management, erosion and sediment controls, training, recordkeeping, and reporting of spills or releases.

Construction activities would comply with all applicable federal and local floodplain regulations. Any impacts to existing drainage patterns would be temporary. Implementation of runoff control measures and pollution prevention practices in compliance with the construction SWPPP would control stormwater runoff from the MSF construction areas to minimize construction-related flooding impacts, erosion, and the discharge of potential pollutants, including sedimentation/siltation.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts related to substantial erosion or siltation, a substantial increase in the rate or amount of surface runoff that would cause flooding, creation of runoff that would exceed drainage system capacity or provide additional sources of polluted runoff, or impede or redirect flood flows during construction and operation of the MSF would be less than significant.

Heavy Rail Transit Maintenance and Storage Facility (Alternative 6)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

As described in Section 3.9.4.3, Alternative 6, the MSF would comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, as well as commonly used industry standards. The MSF would include design elements that would serve to capture and re-use stormwater in accordance with current LID requirements — thereby minimizing the potential for increased runoff rates/amounts, flooding, erosion and siltation, and pollutant runoff. LID design features would slow (detain or retain) stormwater, which would reduce the runoff volume discharged from the MSF and would decrease the peak runoff discharge velocity for design storms. As a result, MSF design and LID BMPs would offset any increases in flow and changes to drainage patterns post-MSF; therefore, less flow with fewer pollutants would be transported through the conveyance systems minimizing flooding and pollutant transport into surface receiving waters. In addition, existing drainage patterns would be maintained as much as possible and operation of the MSF would not alter the course of any streams or rivers or impede or redirect flows.

During operations, the MSF would be required to obtain IGP coverage. An IGP SWPPP would be prepared and submitted to the SWRCB prior to operations. The IGP SWPPP would include discharge prohibitions, effluent limitations, and receiving water limitations that must be adhered to during

operations. IGP SWPPP BMPs would include good housekeeping, prevention and maintenance activities, material handling and waste management, erosion and sediment controls, training, recordkeeping, and reporting of spills or releases.

Construction activities would comply with all applicable federal and local floodplain regulations. Any impacts to existing drainage patterns would be temporary. Implementation of runoff control measures and pollution prevention practices in compliance with the construction SWPPP would control stormwater runoff from the MSF construction areas to minimize construction-related flooding impacts, erosion, and the discharge of potential pollutants, including sedimentation/siltation.

With adherence to existing regulations and proper implementation of stormwater compliance requirements, potential impacts related to substantial erosion or siltation, a substantial increase in the rate or amount of surface runoff that would cause flooding, creation of runoff that would exceed drainage system capacity or provide additional sources of polluted runoff, or impede or redirect flood flows during construction and operation of the MSF would be less than significant.

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

Project Alternatives

No Project Alternative

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

Under the No Project Alternative, the Project would not be developed and as a result any Project-related potential impacts would not occur. The only transit improvement within the Project Study Area that is reasonably foreseeable in absence of the Project would be the rerouting of Metro Line 761. Metro Line 761 is an existing bus route operating along existing streets and highways.

The majority of the Project Study Area is located outside of the FEMA-designated 100-year floodplain and would be in an inland area that is not in proximity to the ocean; therefore, the risk of inundation by a tsunami is considered low. A small segment of the Project Study Area, located at the ridgetop of the Santa Monica Mountains at Mulholland Drive, and open space areas, owned by Los Angeles County, are located in Zone D, which is an area of undetermined flood hazard. The channelized limits of the Los Angeles River, where it crosses I-405 and Sepulveda Boulevard, is identified as Zone AE, and other small portions within the Project Study Area east of Overland Avenue are within Zones AO and AH and are subject to inundation by a 1 percent annual chance of flooding. There are no 500-year floodplains within the Project Study Area.

The Encino Reservoir is located approximately 2.1 miles west of the median of I-405 and the Stone Canyon Reservoir is located approximately 1.3 miles east of I-405. Both reservoirs are in the Santa Monica Mountains and are subject to Zones A and AE, respectively. These reservoirs have a risk of inundation with a 1 percent annual chance of flooding since they retain a significant amount of water. However, any oscillation and subsequent release of water in the reservoirs as part of a seiche would not likely cause inundation. Therefore, there would be no potential for risk of release of pollutants due to inundation by seiche.

The Los Angeles River and Ballona Creek are the major flood control measures for draining stormwater from the Project Study Area and directing it safely to the San Pedro Bay and Santa Monica Bay, respectively. The risk related to flooding would be considered low as the Project Study Area extends along well-developed areas that maintain storm drainage and water runoff control.

The No Project Alternative would have no impact related to risk of release of pollutants due to inundation by flood, tsunami, or seiche, and potential impacts during operations would be less than significant.

Construction Impacts

As described for operational impacts, the majority of the Project Study Area is located outside of the FEMA-designated 100-year floodplain and portions of the Project Study Area include Zones D, AE, AO and AH, particularly in the vicinity of the Los Angeles River.

Other water features in the Project Study Area include the Encino Reservoir and the Stone Canyon Reservoir which are subject to Zones A and AE, respectively. These reservoirs have a risk of inundation with a 1 percent annual chance of flooding since they retain a significant amount of water; however, any oscillation and subsequent release of water in the reservoirs as part of a seiche would not likely cause inundation due to the distance from the Project Study Area.

The Los Angeles River and Ballona Creek are the major flood control measures for draining stormwater from the Project Study Area and directing it safely to the San Pedro Bay and Santa Monica Bay, respectively. The risk related to flooding would be considered low.

The No Project Alternative would have no impact related to risk of release of pollutants due to inundation by flood, tsunami, or seiche, and potential impacts during construction would be less than significant.

Alternative 1

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

The majority of the Alternative 1 alignment would be constructed outside of the FEMA-designated 100-year floodplain and would be in an inland area that is not in proximity to the ocean; therefore, the risk of inundation by a tsunami is considered low. A small segment of Alternative 1, located at the ridgetop of the Santa Monica Mountains at Mulholland Drive, and open space areas, owned by Los Angeles County, are located in Zone D, which is an area of undetermined flood hazard. The channelized limits of the Los Angeles River, where it crosses I-405 and Sepulveda Boulevard, is identified as Zone AE, and other small portions within Alternative 1 east of Overland Avenue are within Zone AO and AH and are subject to inundation by a 1 percent annual chance of flooding. There are no 500-year floodplains within the Project Study Area.

The Encino Reservoir is located on the west side of the Project Study Area approximately 2.1 miles west of the Alternative 1 alignment, and the Stone Canyon Reservoir is located on the eastern side of the Project Study Area approximately 1.3 miles east of the Alternative 1 alignment. Both reservoirs are in the Santa Monica Mountains and are subject to Zones A and AE, respectively. These reservoirs have a risk of inundation with a 1 percent annual chance of flooding since they retain a significant amount of

water. However, given the distance of Alternative 1 from the reservoirs, any oscillation and subsequent release of water in the reservoirs as part of a seiche would not inundate Alternative 1. Therefore, there would be no potential for risk of release of pollutants due to inundation by seiche.

The Los Angeles River and Ballona Creek are the major flood control measures for draining stormwater from the Project Study Area and directing it safely to the San Pedro Bay and Santa Monica Bay, respectively. The risk related to flooding would be considered low as Alternative 1 would extend along well-developed areas that maintain storm drainage and water runoff control. In addition, as previously described, Alternative 1 would implement LID BMPs to offset any increases in runoff rates due to the creation of new impervious surface areas. LID design features would reduce the runoff volume discharged from Alternative 1, thereby minimizing the potential for flooding.

The Alternative 1 alignment would not result in impacts to the hydrology, hydraulics, and connectivity of natural watercourses, including floodways. Alternative 1 would not alter the ability of floodways to convey the 100-year flows and there would be negligible change to the floodplain extents.

Alternative 1 would have no impacts related to risk of release of pollutants due to inundation by flood, tsunami, or seiche, and potential impacts during operations would be less than significant.

Construction Impacts

Impacts related to release of pollutants due to inundation by flood, tsunami, or seiche during construction activities would be similar to operational impacts. Similar to operational impacts, the majority of the Alternative 1 alignment would be constructed outside of the FEMA-designated 100-year floodplain and would be in an inland area that is not in proximity to the ocean; therefore, the risk of inundation by a tsunami is considered low.

Given the distance of Alternative 1 from the Encino Reservoir and Stone Canyon Reservoir, any oscillation and subsequent release of water in the reservoirs as part of a seiche would not inundate Alternative 1. Therefore, there would be low potential for risk of release of pollutants due to inundation by seiche.

The Los Angeles River and Ballona Creek are the major flood control measures for draining stormwater from the Project Study Area and directing it safely to the San Pedro Bay and Santa Monica Bay, respectively. The risk related to flooding would be considered low as Alternative 1 would extend along well-developed areas that maintain storm drainage and water runoff control.

The Alternative 1 alignment would not result in impacts to the hydrology, hydraulics, and connectivity of natural watercourses, including floodways.

Alternative 1 would have no impacts related to risk of release of pollutants due to inundation by flood, tsunami, or seiche, and potential impacts during construction would be less than significant.

Alternative 3

Impact Statement

Operational Impact: Less than Significant Impact

Construction Impact: Less than Significant Impact

Operational Impacts

Alternative 3 shares all of the same components described for Alternative 1; therefore, information on potential flood risks would be the same as Alternative 1. The majority of the Alternative 3 alignment

would be constructed outside of the FEMA-designated 100-year floodplain and would be in an inland area that is not in proximity to the ocean; therefore, the risk of inundation by a tsunami is considered low. A small segment of Alternative 3, located at the ridgetop of the Santa Monica Mountains at Mulholland Drive, and open space areas owned by Los Angeles County, would be located in Zone D, which is an area of undetermined flood hazard. The channelized limits of the Los Angeles River, where it crosses I-405 and Sepulveda Boulevard, is identified as Zone AE, and other small portions within Alternative 3 east of Overland Avenue are within Zones AO and AH and are subject to inundation by a 1 percent annual chance of flooding. There are no 500-year floodplains within the Project Study Area.

The Encino Reservoir, located approximately 2.1 miles west of the Alternative 3 alignment, and the Stone Canyon Reservoir, located approximately 1.3 miles east of the Alternative 3 alignment, are subject to Zones A and AE, respectively. These reservoirs have a risk of inundation with a 1 percent annual chance of flooding since they retain a significant amount of water; however, given the distance of Alternative 3 from the reservoirs, any oscillation and subsequent release of water in the reservoirs as part of a seiche would not inundate Alternative 3. Therefore, there would be no potential for risk of release of pollutants due to inundation by seiche.

The Los Angeles River and Ballona Creek are the major flood control measures for draining stormwater from the Project Study Area and directing it safely to the San Pedro Bay and Santa Monica Bay, respectively. The risk related to flooding would be considered low as Alternative 3 would extend along well-developed areas that maintain storm drainage and water runoff control. In addition, as previously described, Alternative 3 would implement LID BMPs to offset any increases in runoff rates due to the creation of new impervious surface areas. LID design features would reduce the runoff volume discharged from Alternative 3, thereby minimizing the potential for flooding.

The Alternative 3 alignment would not result in impacts to the hydrology, hydraulics, and connectivity of natural watercourses, including floodways. Alternative 3 would not alter the ability of floodways to convey the 100-year flows, and there would be negligible change to the floodplain extents.

Alternative 3 would have no impacts related to risk of release of pollutants due to inundation by flood, tsunami, or seiche, and potential impacts during operations would be less than significant.

Construction Impacts

Impacts related to release of pollutants due to inundation by flood, tsunami, or seiche during construction activities would be similar to operational impacts. Similar to operational impacts, the majority of the Alternative 3 alignment would be constructed outside of the FEMA-designated 100-year floodplain and would be in an inland area that is not in proximity to the ocean; therefore, the risk of inundation by a tsunami is considered low.

Given the distance of Alternative 3 from the Encino Reservoir and Stone Canyon Reservoir, any oscillation and subsequent release of water in the reservoirs as part of a seiche would not inundate Alternative 3. Therefore, there would be low potential for risk of release of pollutants due to inundation by seiche.

The Los Angeles River and Ballona Creek are the major flood control measures for draining stormwater from the Project Study Area and directing it safely to the San Pedro Bay and Santa Monica Bay, respectively. The risk related to flooding would be considered low as Alternative 3 would extend along well-developed areas that maintain storm drainage and water runoff control.

The Alternative 3 alignment would not result in impacts to the hydrology, hydraulics, and connectivity of natural watercourses, including floodways.

Alternative 3 would have no impacts related to risk of release of pollutants due to inundation by flood, tsunami, or seiche, and potential impacts during construction would be less than significant.

Alternative 4

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

The Alternative 4 alignment is partially underground. Thus, there would be minimal potential for operations of the underground portion of Alternative 4 to release pollutants during inundation by flooding, tsunami, or seiche.

The majority of the aerial and underground portions of the Alternative 4 alignment would be constructed outside of the FEMA-designated 100-year floodplain and would be in an inland area that is not in proximity to the ocean; therefore, the risk of inundation by a tsunami is considered low. A small segment of Alternative 4, located at the ridgetop of the Santa Monica Mountains at Mulholland Drive, and open space areas, owned by Los Angeles County, are located in Zone D, which is an area of undetermined flood hazard. However, the Alternative 4 alignment at Mulholland Drive would be underground, and there would be low potential for inundation. The channelized limits of the Los Angeles River, where it crosses I-405 and Sepulveda Boulevard, is identified as Zone AE and other small portions within Alternative 4 east of Overland Avenue would be within Zones AO and AH and would be subject to inundation by a 1 percent annual chance of flooding. The Alternative 4 alignment would be underground in a bored tunnel where it intersects with these identified flood zones. There are no 500-year floodplains within the Project Study Area.

Both Encino Reservoir and Stone Canyon Reservoir are in the Santa Monica Mountains and are subject to Zones A and AE, respectively. These reservoirs have a risk of inundation with a 1 percent annual chance of flooding since they retain a significant amount of water. However, given the distance of Alternative 4 from the reservoirs, any oscillation and subsequent release of water in the reservoirs as part of a seiche would not inundate Alternative 4. Therefore, there would be low potential for risk of release of pollutants due to inundation by seiche.

The Los Angeles River and Ballona Creek are the major flood control measures for draining stormwater from the Project Study Area and directing it safely to the San Pedro Bay and Santa Monica Bay, respectively. The potential risk related to flooding would be considered low as Alternative 4 would extend along well-developed areas that maintain storm drainage and water runoff control. In addition, as previously described, Alternative 4 would implement LID BMPs to offset any increases in runoff rates due to the creation of new impervious surface areas. LID design features would reduce the runoff volume discharged from Alternative 4, thereby minimizing the potential for flooding.

The Alternative 4 alignment would not result in impacts to the hydrology, hydraulics, and connectivity of natural watercourses, including floodways. Alternative 4 would not alter the ability of floodways to convey the 100-year flows and there would be negligible change to the floodplain extents.

Alternative 4 would have no impacts related to risk of release of pollutants due to inundation by flood, tsunami, or seiche, and potential impacts during operations would be less than significant.

Construction Impacts

Impacts related to release of pollutants due to Alternative 4 inundation by flood, tsunami, or seiche during construction activities would be similar to operational impacts. Similar to operational impacts, the majority of the Alternative 4 alignment would be constructed outside of the FEMA-designated 100-year floodplain and would be in an inland area that is not in proximity to the ocean; therefore, the risk of inundation by a tsunami is considered low.

Given the distance of Alternative 4 from the Encino Reservoir and Stone Canyon Reservoir, any oscillation and subsequent release of water in the reservoirs as part of a seiche would not inundate Alternative 4. Therefore, there would be low potential for risk of release of pollutants due to inundation by seiche.

Los Angeles River and Ballona Creek are the major flood control measures for draining stormwater from the Project Study Area and directing it safely to the San Pedro Bay and Santa Monica Bay, respectively. The risk related to flooding would be considered low as Alternative 4 would extend along well-developed areas that maintain storm drainage and water runoff control.

The Alternative 4 alignment would not result in impacts to the hydrology, hydraulics, and connectivity of natural watercourses, including floodways.

Alternative 4 would have no impacts related to risk of release of pollutants due to inundation by flood, tsunami, or seiche, and potential impacts during construction would be less than significant.

Alternative 5

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

The Alternative 5 alignment is mostly underground. Thus, there would be minimal potential for operations of the underground portion of Alternative 5 to release pollutants during inundation by flooding, tsunami, or seiche.

The majority of the aerial and underground portions of the Alternative 5 alignment would be constructed outside of the FEMA-designated 100-year floodplain and would be in an inland area that is not in proximity to the ocean; therefore, the risk of inundation by a tsunami is considered low.

A small segment of Alternative 5, located at the ridgetop of the Santa Monica Mountains at Mulholland Drive, and open space areas, owned by Los Angeles County, are located in Zone D, which is an area of undetermined flood hazard. However, the Alternative 5 alignment at Mulholland Drive would be underground, and there would be low potential for inundation. The channelized limits of the Los Angeles River, where it crosses I-405 and Sepulveda Boulevard, is identified as Zone AE and other small portions within Alternative 5 east of Overland Avenue are within Zones AO and AH and are subject to inundation by a 1 percent annual chance of flooding. There are no 500-year floodplains within the Project Study Area.

Both Encino Reservoir and Stone Canyon Reservoir are in the Santa Monica Mountains and are subject to Zones A and AE, respectively. These reservoirs have a risk of inundation with a 1 percent annual chance of flooding since they retain a significant amount of water. However, given the distance of Alternative 5 from the reservoirs, any oscillation and subsequent release of water in the reservoirs as part of a seiche would not inundate Alternative 5. Therefore, there would be low potential for risk of release of pollutants due to inundation by seiche.

The Los Angeles River and Ballona Creek are the major flood control measures for draining stormwater from the Project Study Area and directing it safely to the San Pedro Bay and Santa Monica Bay, respectively. The potential risk related to flooding would be considered low as Alternative 5 would extend along well-developed areas that maintain storm drainage and water runoff control. In addition, as previously described, Alternative 5 would implement LID BMPs to offset any increases in runoff rates due to the creation of new impervious surface areas. LID design features would reduce the runoff volume discharged from Alternative 5, thereby minimizing the potential for flooding.

The Alternative 5 alignment would not result in impacts to the hydrology, hydraulics, and connectivity of natural watercourses, including floodways. Alternative 5 would not alter the ability of floodways to convey the 100-year flows, and there would be negligible change to the floodplain extents.

Alternative 5 would have no impacts related to risk of release of pollutants due to inundation by flood, tsunami, or seiche, and potential impacts during operations would be less than significant.

Construction Impacts

Impacts related to release of pollutants due to Alternative 5 inundation by flood, tsunami, or seiche during construction activities would be similar to operational impacts. Similar to operational impacts, the majority of the Alternative 5 alignment would be constructed outside of the FEMA-designated 100-year floodplain and would be in an inland area that is not in proximity to the ocean; therefore, the risk of inundation by a tsunami is considered low.

Given the distance of Alternative 5 from Encino and Stone Canyon Reservoirs, any oscillation and subsequent release of water in the reservoirs as part of a seiche would not inundate Alternative 5. Therefore, there would be low potential for risk of release of pollutants due to inundation by seiche.

The Los Angeles River and Ballona Creek are the major flood control measures for draining stormwater from the Project Study Area and directing it safely to the San Pedro Bay and Santa Monica Bay, respectively. The risk related to flooding would be considered low as Alternative 5 would extend along well-developed areas that maintain storm drainage and water runoff control.

The Alternative 5 alignment would not result in impacts to the hydrology, hydraulics, and connectivity of natural watercourses, including floodways.

Alternative 5 would have no impacts related to risk of release of pollutants due to inundation by flood, tsunami, or seiche, and potential impacts during construction would be less than significant.

Alternative 6

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

The Alternative 6 alignment is mostly underground. Thus, there would be minimal potential for operations of the underground portion of Alternative 6 to release pollutants during inundation by flooding, tsunami, or seiche.

The majority of the Alternative 6 alignment would be constructed outside of the FEMA-designated 100-year floodplain and would be in an inland area that is not in proximity to the ocean; therefore, the risk of inundation by a tsunami is considered low. A small segment of Alternative 6, located at the ridgetop of the Santa Monica Mountains at Mulholland Drive, and open space areas, owned by Los Angeles County, are located in Zone D, which is an area of undetermined flood hazard. However, the alignment at Mulholland Drive would be underground and there would be low potential for inundation. The channelized limits of the Los Angeles River, where it crosses I-405 and Sepulveda Boulevard, is identified as Zone AE and other small portions within Alternative 6 east of Overland Avenue are within Zones AO and AH and are subject to inundation by a 1 percent annual chance of flooding. There are no 500-year floodplains within the Project Study Area.

The Encino Reservoir is located on the west side of the Project Study Area approximately 3 miles west of the Alternative 6 alignment, and the Stone Canyon Reservoir is located on the eastern side of the Project Study Area approximately 0.5 mile west of the Alternative 6 alignment. Both reservoirs are in the Santa Monica Mountains and are subject to Zones A and AE, respectively. These reservoirs have a risk of inundation with a 1 percent annual chance of flooding since they retain a significant amount of water. However, given the distance of Alternative 6 from the reservoirs, any oscillation and subsequent release of water in the reservoirs as part of a seiche would not inundate Alternative 6. Therefore, there would be low potential for risk of release of pollutants due to inundation by seiche.

The Los Angeles River and Ballona Creek are the major flood control measures for draining stormwater from the Project Study Area and directing it safely to the San Pedro Bay and Santa Monica Bay, respectively. The potential risk related to flooding would be considered low as the Alternative 6 alignment would extend along well-developed areas that maintain storm drainage and water runoff control. In addition, as previously described, Alternative 6 would implement LID BMPs to offset any increases in runoff rates due to the creation of new impervious surface areas. LID design features would reduce the runoff volume discharged from Alternative 6, thereby minimizing the potential for flooding.

The Alternative 6 alignment would not result in impacts to the hydrology, hydraulics, and connectivity of natural watercourses, including floodways. Alternative 6 would not alter the ability of floodways to convey the 100-year flows and there would be negligible change to the floodplain extents.

Alternative 6 would have no impacts related to risk of release of pollutants due to inundation by flood, tsunami, or seiche, and potential impacts during operations would be less than significant.

Construction Impacts

Impacts related to release of pollutants due to inundation by flood, tsunami, or seiche during construction activities of Alternative 6 would be similar to operational impacts. Similar to operational impacts, the majority of the Alternative 6 alignment would be constructed outside of the FEMA-designated 100-year floodplain and would be in an inland area that is not in proximity to the ocean; therefore, the risk of inundation by a tsunami is considered low.

Given the distance of Alternative 6 from the Encino Reservoir and Stone Canyon Reservoir, any oscillation and subsequent release of water in the reservoirs as part of a seiche would not inundate

Alternative 6. Therefore, there would be low potential for risk of release of pollutants due to inundation by seiche.

Construction activities during construction of the Stone Canyon Reservoir vent shaft and other ancillary facilities near the Stone Canyon Reservoir may temporarily increase the potential for a release of construction-related pollutants during inundation. However, the risk related to flooding would be considered low as the Alternative 6 alignment would extend along well-developed areas that maintain storm drainage and water runoff control.

The Alternative 6 alignment would not result in impacts to the hydrology, hydraulics, and connectivity of natural watercourses, including floodways. Alternative 6 would not alter the ability of floodways to convey the 100-year flows and there would be negligible change to the floodplain extents.

Alternative 6 would have no impacts related to risk of release of pollutants due to inundation by flood, tsunami, or seiche, and potential impacts during construction would be less than significant.

Maintenance and Storage Facilities

Monorail Transit Maintenance and Storage Facility Base Design (Alternatives 1 and 3)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

Impacts related to release of pollutants due to inundation by flood, tsunami, or seiche during operational and construction activities of the MSF Base Design would be similar to operational and construction activities of the rest of Alternative 1 and Alternative 3 components. The MSF Base Design would be constructed outside of the FEMA-designated 100-year floodplain and would be in an inland area that is not in proximity to the ocean; therefore, the risk of inundation by a tsunami is considered low.

Given the distance of the MSF Base Design from the Encino Reservoir and Stone Canyon Reservoir, any oscillation and subsequent release of water in the reservoirs as part of a seiche would not inundate the MSF Base Design. Therefore, there would be low potential for risk of release of pollutants due to inundation by seiche.

The Los Angeles River and Ballona Creek are the major flood control measures for draining stormwater from the Project Study Area and directing it safely to the San Pedro Bay and Santa Monica Bay, respectively. The risk related to flooding would be considered low as the MSF Base Design is within a well-developed area that maintains storm drainage and water runoff control.

The MSF Base Design would not result in impacts to the hydrology, hydraulics, and connectivity of natural watercourses, including floodways.

The MSF Base Design would have no impacts related to risk of release of pollutants due to inundation by flood, tsunami, or seiche, and potential impacts during construction or operation of the MSF Base Design would be less than significant.

Monorail Transit Maintenance and Storage Facility Design Option 1 (Alternatives 1 and 3)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

The previous impact evaluation provided in Section 3.9.4.4, MSF Base Design (Alternatives 1 and 3), is applicable to the MSF Design Option 1. The MSF Design Option 1 would be constructed outside of the FEMA-designated 100-year floodplain and would be in an inland area that is not in proximity to the ocean; therefore, the risk of inundation by a tsunami is considered low.

Given the distance of the MSF Design Option 1 from the Encino Reservoir and Stone Canyon Reservoir, any oscillation and subsequent release of water in the reservoirs as part of a seiche would not inundate the MSF Design Option 1. Therefore, there would be low potential for risk of release of pollutants due to inundation by seiche.

The Los Angeles River and Ballona Creek are the major flood control measures for draining stormwater from the Project Study Area and directing it safely to the San Pedro Bay and Santa Monica Bay, respectively. The risk related to flooding would be considered low as the MSF Design Option 1 is within a well-developed area that maintains storm drainage and water runoff control.

The MSF Design Option 1 would not result in impacts to the hydrology, hydraulics, and connectivity of natural watercourses, including floodways.

The MSF Design Option 1 would have no impacts related to risk of release of pollutants due to inundation by flood, tsunami, or seiche, and potential impacts during construction or operation of the MSF Design Option 1 would be less than significant.

Electric Bus Maintenance and Storage Facility (Alternative 1)

Impact Statement

Operational Impact: Less than Significant

Construction Impact: Less than Significant

Operational and Construction Impacts

Impacts related to release of pollutants due to inundation by flood, tsunami, or seiche during operational and construction activities of the Electric Bus MSF would be similar to the operational and construction activities of the rest of the Alternative 1 components. The Electric Bus MSF would be constructed outside of the FEMA-designated 100-year floodplain and would be in an inland area that is not in proximity to the ocean; therefore, the risk of inundation by a tsunami is considered low.

Given the distance of the Electric Bus MSF from the Encino Reservoir and Stone Canyon Reservoir, any oscillation and subsequent release of water in the reservoirs as part of a seiche would not inundate the Electric Bus MSF. Therefore, there would be low potential for risk of release of pollutants due to inundation by seiche.

The Los Angeles River and Ballona Creek are the major flood control measures for draining stormwater from the Project Study Area and directing it safely to the San Pedro Bay and Santa Monica Bay,

respectively. The risk related to flooding would be considered low as the Electric Bus MSF is within a well-developed area that maintains storm drainage and water runoff control.

The Electric Bus MSF would not result in impacts to the hydrology, hydraulics, and connectivity of natural watercourses, including floodways.

The Electric Bus MSF would have no impacts related to risk of release of pollutants due to inundation by flood, tsunami, or seiche, and potential impacts during construction or operation of the Electric Bus MSF would be less than significant.

Heavy Rail Transit Maintenance and Storage Facility (Alternatives 4 and 5)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

Impacts related to release of pollutants due to inundation by flood, tsunami, or seiche during operational and construction activities of the MSF would be similar to the operational and construction activities of the rest of the Alternative 4 and 5 components. The MSF would be located outside of the FEMA-designated 100-year floodplain and would be in an inland area that is not in proximity to the ocean; therefore, the risk of inundation by a tsunami is considered low.

Given the distance of the MSF from the Encino Reservoir and Stone Canyon Reservoir, any oscillation and subsequent release of water in the reservoirs as part of a seiche would not inundate the MSF. Therefore, there would be low potential for risk of release of pollutants due to inundation by seiche.

The Los Angeles River and Ballona Creek are the major flood control measures for draining stormwater from the Project Study Area and directing it safely to the San Pedro Bay and Santa Monica Bay, respectively. The risk related to flooding would be considered low as the MSF is within a well-developed area that maintains storm drainage and water runoff control.

The MSF would not result in impacts to the hydrology, hydraulics, and connectivity of natural watercourses, including floodways.

The MSF would have no impacts related to risk of release of pollutants due to inundation by flood, tsunami, or seiche, and potential impacts during construction or operation of the MSF would be less than significant.

Heavy Rail Transit Maintenance and Storage Facility (Alternative 6)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

The MSF would be located outside of the FEMA-designated 100-year floodplain and would be in an inland area that is not in proximity to the ocean; therefore, the risk of inundation by a tsunami is considered low.

Given the distance of the MSF from the Encino Reservoir and Stone Canyon Reservoir, any oscillation and subsequent release of water in the reservoirs as part of a seiche would not inundate the MSF. Therefore, there would be low potential for risk of release of pollutants due to inundation by seiche.

The Los Angeles River and Ballona Creek are the major flood control measures for draining stormwater from the Project Study Area and directing it safely to the San Pedro Bay and Santa Monica Bay, respectively. The risk related to flooding would be considered low as the MSF is within a well-developed area that maintains storm drainage and water runoff control.

The MSF would not result in impacts to the hydrology, hydraulics, and connectivity of natural watercourses, including floodways.

The MSF would have no impacts related to risk of release of pollutants due to inundation by flood, tsunami, or seiche, and potential impacts during construction or operation of the MSF would be less than significant.

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

Project Alternatives

No Project Alternative

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

Under the No Project Alternative, the Project would not be developed and as a result any Project-related potential impacts would not occur. Section 3.9.4.1, No Project Alternative Operational Impacts, presents the impact evaluation. With adherence to existing laws and regulations and with proper implementation of stormwater compliance requirements, potential impacts related to conflict with implementation of a water quality control plan or sustainable groundwater management plan during operations of the No Project Alternative would be less than significant.

Construction Impacts

Section 3.9.4.1, No Project Alternative Construction Impacts, presents the impact evaluation. With adherence to existing laws and regulations and with proper implementation of stormwater compliance requirements, potential impacts related to conflict with implementation of a water quality control plan or sustainable groundwater management plan during construction of the No Project Alternative would be less than significant.

Alternative 1

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

Alternative 1 would require routine maintenance that would be performed by the system operator. Potential pollutants (e.g., petroleum products/lubricants, paints, solvents, and other Alternative 1-related products) used during Alternative 1 operations and maintenance would contribute to water pollution. Uncontrolled discharge of runoff carrying these potential pollutants would result in significant impacts to water quality in receiving waters, violating federal, state, and local water quality standards and WDRs, if not appropriately managed. As previously discussed, Alternative 1 would be required to comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, and water quality control and/or sustainable groundwater management plans, including the City of Los Angeles and County of Los Angeles LID Ordinance, the *Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan) (LARWQCB, 2014), the Caltrans NPDES Statewide Stormwater Permit, the *Ballona Creek Watershed Management Plan* (LADPW, 2004), and the *LA River Master Plan (*Los Angeles County and Los Angeles County Department of Public Works, 2022), as well as commonly used industry standards.

The City of Los Angeles city ordinances related to stormwater control and its LID requirements for sustainability contain compliance provisions for BMPs that must address water infiltration, treatment, and peak-flow discharge. The City of Los Angeles provides guidance to developers of newly developed projects for compliance with regulatory standards through the LID Standards Manual.

As previously described, Alternative 1 would comply with all applicable regulations for all operational activities, including adherence to an approved LID plan that would identify the BMPs for Alternative 1 operations. Alternative 1 would incorporate into its design on-site drainage systems and sustainability features that would meet regulatory requirements of the applicable plans for the protection of water resources.

The LID plan would identify the BMPs for Alternative 1 post-construction design (i.e., operational characteristics to control/treat runoff for the range of potential pollutants). Alternative 1 would include design elements that would serve to infiltrate, capture and re-use stormwater in accordance with current LID requirements — thereby minimizing the potential for increased runoff volumes/rates and pollutant transport. LID design features, such as depressed landscape gardens for runoff retention and infiltration, permeable surfaces to reduce runoff volume, hardscape replacement with pervious or planted substitutions, bioswales or artistic water features that creatively convey runoff into planted or pervious areas, roof downspout discharges to vegetated areas, and rainwater cisterns and other on-site stormwater retention methods, would slow (detain or retain) stormwater, which would reduce the runoff volume discharged from Alternative 1 and would decrease the peak runoff discharge velocity for design storms — which would also ultimately reduce the amount of stormwater runoff burden into the city's stormwater conveyance systems. As a result, less flow with fewer pollutants would be transported through the conveyance systems, and ultimately into surface waters, including ancillary exfiltration to the groundwater table. Additionally, natural treatment of infiltrated runoff would occur, thereby improving exfiltrated water from LID and water quality additions to the groundwater table.

Additionally, operation of Alternative 1 would not involve the extraction of any groundwater. Therefore, Alternative 1 would not be expected to result in a decrease in groundwater supplies or interfere substantially with groundwater recharge to the extent that Alternative 1 may impede sustainable groundwater management of the basin. Depending on final design features, exfiltration from LID BMPs is anticipated to improve groundwater recharge characteristics of the area.

Alternative 1 is anticipated to require Industrial General Permit (IGP) coverage for maintenance facilities, fueling operations, equipment cleaning/washing operations, and TPSSs. As such, an IGP SWPPP would be prepared and submitted to the SWRCB prior to and adhered to during operations. IGP SWPPP BMPs would include good housekeeping, prevention and maintenance activities, material handling and waste management, erosion and sediment controls, training, recordkeeping, and reporting of spills or releases. Other BMPs may also be employed as appropriate, such as indoor/covered areas for maintenance, approved flammable/hazmat storage lockers for lubricants and other industrial liquids, drip/spill protection in maintenance areas and similar BMPs when conducting tower maintenance, dry clean-up practices, and dedicated enclosed areas for metal working, painting, and welding.

With adherence to existing laws and regulations and with proper implementation of stormwater compliance requirements, potential impacts related to conflict with implementation of a water quality control plan or sustainable groundwater management plan during operations of Alternative 1 would be less than significant.

Construction Impacts

Construction of the Alternative 1 components would be conducted in several phases, including site preparation and installation of foundations and columns; erection of stations; and construction of ancillary components, including replacement or restoration of paving, sidewalk, and landscaping.

Construction of Alternative 1 has the potential to impact water quality of downstream receiving waters if applicable and appropriate BMPs are not implemented. Construction activities such as demolition of existing site structures and excavation for foundations would temporarily expose bare soil, and temporarily increase the potential for erosion. Exposed or stockpiled soils would also be at increased risk for erosion. Uncontrolled erosion and discharge of sediments and other potential pollutants would affect water quality in Alternative 1 receiving waters (e.g., the Pacoima Wash, Tujunga Wash, and Los Angeles River) if not appropriately managed by proper implementation of the construction SWPPP.

In addition to sediments, other pollutants including trash, concrete waste, and petroleum products (e.g., heavy equipment fuels, solvents, and lubricants) would contribute to stormwater pollution if not appropriately managed. The use of construction equipment and other vehicles during Alternative 1 construction would result in spills of oil, brake fluid, grease, antifreeze, or other vehicle-related fluids, which would contribute to water quality impacts. Improper handling, storage, or disposal of fuels and vehicle-related fluids or improper cleaning and maintenance of equipment would result in accidental spills and discharges that would contribute to water pollution.

Nuisance groundwater may be encountered during installation of piles for each of the components, which may result in degradation of groundwater quality if not addressed properly. Additionally, potentially impacted groundwater may result in degradation of surface water if it is not properly managed during construction activities. Although construction activities are not anticipated to interfere substantially with groundwater recharge, groundwater resource supplies, or groundwater quality, any accidental interference would be handled in accordance with applicable federal, state, regional, and local laws and regulations, groundwater management plans, and WDRs for groundwater discharge.

As discussed previously, Alternative 1 would be required to comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, and water quality control and/or sustainable groundwater management plans, including the Basin Plan, as well as commonly used industry standards. Alternative 1 would comply with the Caltrans NPDES Statewide Stormwater Permit;

the NPDES CGP; the MS4 Permit; the City of Los Angeles and County of Los Angeles LID Ordinance; the City of Los Angeles Municipal Code, and all other applicable regulations for all construction activities.

In accordance with the CGP, Alternative 1 would have a construction SWPPP, which must be submitted to the SWRCB prior to construction and adhered to during construction. Proper implementation of the construction SWPPP would avoid potential impacts to water quality. The construction SWPPP would identify the BMPs that would be in place to protect water quality prior to the start of construction activities and during construction. The BMP categories would include erosion control, sediment control, non-stormwater management, and materials management BMPs. Although specific temporary construction-related BMPs would be selected at the time of SWPPP preparation, potential BMPs would likely include fiber rolls, bonded-fiber matrix hydroseeding, soil furrowing, water bars, and check dams for erosion control, inlet protection (sand/gravel bags and geotextiles), silt fencing, sediment traps/basins for sediment controls, soil berming around disturbed areas, and phasing of soil disturbance during the wet season (i.e., limiting widespread grading) for effectively managing erosion and pollutant discharge during significant rainfall events.

With adherence to existing laws and regulations and with proper implementation of stormwater compliance requirements, potential impacts related to conflict with implementation of a water quality control plan or sustainable groundwater management plan during construction of Alternative 1 would be less than significant.

Alternative 3

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

Alternative 3 would have the same potential operational impacts as described above for Alternative 1. With adherence to existing laws and regulations and with proper implementation of stormwater compliance requirements, potential impacts related to conflict with implementation of a water quality control plan or sustainable groundwater management plan during operations of Alternative 3 would be less than significant.

Construction Impacts

Alternative 3 would have the same potential construction impacts as described above for Alternative 1. With adherence to existing laws and regulations and with proper implementation of stormwater compliance requirements, potential impacts related to conflict with implementation of a water quality control plan or sustainable groundwater management plan during construction of Alternative 3 would be less than significant.

Alternative 4

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

Alternative 4 would require routine maintenance that would be performed by the system operator. Potential pollutants (e.g., petroleum products/lubricants, paints, solvents, and other project-related products) used or generated during Alternative 4 operations and maintenance would contribute to water pollution. Uncontrolled discharge of runoff carrying these potential pollutants would result in significant impacts to water quality in receiving waters, which would violate federal, state, and local water quality standards and WDRs, if not appropriately managed. As previously discussed, Alternative 4 would be required to comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, and water quality control and/or sustainable groundwater management plans, including the Basin Plan (LARWQCB, 2014), the Caltrans NPDES Statewide Stormwater Permit, the *Ballona Creek Watershed Management Plan* (LADPW, 2004), and the *LA River Master Plan* (Los Angeles County and Los Angeles County Department of Public Works, 2022), the MS4 Permit, and the City of Los Angeles and County of Los Angeles LID Ordinance, as well as commonly used industry standards.

The City of Los Angeles city ordinances related to stormwater control and LID requirements for sustainability contain compliance provisions for BMPs that must address water infiltration, treatment, and peak-flow discharge. The City of Los Angeles provides guidance to developers of newly developed projects for compliance with regulatory standards through the LID Standards Manual.

As previously described, Alternative 4 would comply with all applicable regulations for all operational activities, including adherence to an approved LID Plan that would identify the BMPs for Alternative 4 operations. Alternative 4 would incorporate into its design on-site drainage systems and sustainability features that would meet regulatory requirements of the applicable plans for the protection of water resources.

The LID plan would identify the BMPs for Alternative 4 post-construction design (i.e., operational characteristics to control/treat runoff for the range of potential pollutants). Alternative 4 would include design elements that would serve to infiltrate, capture and re-use stormwater in accordance with current LID requirements — thereby minimizing the potential for increased runoff volumes/rates and pollutant transport. LID design features, such as depressed landscape gardens for runoff retention and infiltration, permeable surfaces to reduce runoff volume, hardscape replacement with pervious or planted substitutions, bioswales or artistic water features that creatively convey runoff into planted or pervious areas, roof downspout discharges to vegetated areas, and rainwater cisterns and other on-site stormwater retention methods, would slow (detain or retain) stormwater, which would reduce the runoff volume discharged from Alternative 4 and would decrease the peak runoff discharge velocity for design storms — which would also ultimately reduce the amount of stormwater runoff burden into the city's stormwater conveyance systems. As a result, less flow with fewer pollutants would be transported through the conveyance systems, and ultimately into surface waters, including ancillary exfiltration to the groundwater table. Additionally, natural treatment of infiltrated runoff would occur, thereby improving exfiltrated water from LID and water quality additions to the groundwater table.

Additionally, operation of Alternative 4 would not involve the extraction of any groundwater. Therefore, Alternative 4 would not be expected to result in a decrease in groundwater supplies or interfere substantially with groundwater recharge to the extent that Alternative 4 may impede sustainable groundwater management of the basin. Depending on final design features, exfiltration from LID BMPs is anticipated to improve groundwater recharge characteristics of the area.

Alternative 4 is anticipated to require Industrial General Permit (IGP) coverage for maintenance facilities, fueling operations, equipment cleaning/washing operations, and TPSSs. As such, an IGP SWPPP would be prepared and submitted to the SWRCB prior to and adhered to during operations. IGP SWPPP BMPs would include good housekeeping, prevention and maintenance activities, material handling and waste management, erosion and sediment controls, training, recordkeeping, and reporting of spills or releases. Other BMPs may also be employed as appropriate, such as indoor/covered areas for maintenance, approved flammable/hazmat storage lockers for lubricants and other industrial liquids, drip/spill protection in maintenance areas and similar BMPs when conducting tower maintenance, dry clean-up practices, and dedicated enclosed areas for metal working, painting, and welding.

With adherence to existing laws and regulations and with proper implementation of stormwater compliance requirements, potential impacts related to conflict with implementation of a water quality control plan or sustainable groundwater management plan during operations of Alternative 4 would be less than significant.

Construction Impacts

Construction of the Alternative 4 components would be conducted in several phases, including site preparation and installation of foundations and columns; erection of stations, construction of tunnels; and construction of ancillary components, including replacement or restoration of paving, sidewalk, and landscaping.

Construction of Alternative 4 has the potential to impact water quality of downstream receiving waters if applicable and appropriate BMPs are not implemented. Construction activities such as demolition of existing site structures and excavation for foundations would temporarily expose bare soil and would temporarily increase erosion. Exposed or stockpiled soils would also be at increased risk for erosion. Uncontrolled erosion and discharge of sediments and other potential pollutants would affect water quality in Alternative 4 receiving waters (e.g., the Pacoima Wash, Tujunga Wash, and Los Angeles River) if not appropriately managed by proper implementation of the construction SWPPP.

In addition to sediments, other pollutants including trash, concrete waste, and petroleum products (e.g., heavy equipment fuels, solvents, and lubricants) would contribute to stormwater pollution if not appropriately managed. The use of construction equipment and other vehicles during Alternative 4 construction would result in spills of oil, brake fluid, grease, antifreeze, or other vehicle-related fluids, which would contribute to water quality impacts. Improper handling, storage, or disposal of fuels and vehicle-related fluids or improper cleaning and maintenance of equipment would result in accidental spills and discharges that would contribute to water pollution.

Nuisance groundwater may be encountered during installation of piles for each of the components, which may result in degradation of groundwater quality if not addressed properly. Additionally, potentially impacted groundwater may result in degradation of surface water if it is not properly managed during construction activities. Although construction activities are not anticipated to interfere substantially with groundwater recharge, groundwater resource supplies, or groundwater quality, any accidental interference would be handled in accordance with applicable federal, state, regional, and local laws and regulations, groundwater management plans, and WDRs for groundwater discharge.

As discussed previously, Alternative 4 would be required to comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, and water quality control and/or sustainable groundwater management plans, including the Basin Plan, as well as commonly used industry standards. Alternative 4 would comply with the Caltrans NPDES Statewide Stormwater Permit;

the NPDES CGP; the MS4 Permit; the City of Los Angeles and County of Los Angeles LID Ordinance; the City of Los Angeles Municipal Code, and all other applicable regulations for all construction activities.

In accordance with the CGP, Alternative 4 would be required to implement a construction SWPPP, which must be submitted to the SWRCB prior to construction and adhered to during construction. Proper implementation of the construction SWPPP would avoid potential impacts to water quality. The construction SWPPP would identify the BMPs that would be in place to protect water quality prior to the start of construction activities and during construction. The BMP categories would include erosion control, sediment control, non-stormwater management, and materials management BMPs. Although specific temporary construction-related BMPs would be selected at the time of SWPPP preparation, potential BMPs would likely include fiber rolls, bonded-fiber matrix hydroseeding, soil furrowing, water bars, and check dams for erosion control, inlet protection (sand/gravel bags and geotextiles), silt fencing, sediment traps/basins for sediment controls, soil berming around disturbed areas, and phasing of soil disturbance during the wet season (i.e., limiting widespread grading) for effectively managing erosion and pollutant discharge during significant rainfall events.

With adherence to existing laws and regulations and with proper implementation of stormwater compliance requirements, potential impacts related to conflict with implementation of a water quality control plan or sustainable groundwater management plan during construction of Alternative 4 would be less than significant.

Alternative 5

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

Alternative 5 would have the same potential operational impacts as described above for Alternative 4. With adherence to existing laws and regulations and with proper implementation of stormwater compliance requirements, potential impacts related to conflict with implementation of a water quality control plan or sustainable groundwater management plan during operations of Alternative 5 would be less than significant.

Construction Impacts

Alternative 5 would have the same potential construction impacts as described above for Alternative 4. With adherence to existing laws and regulations and with proper implementation of stormwater compliance requirements, potential impacts related to conflict with implementation of a water quality control plan or sustainable groundwater management plan during construction of Alternative 5 would be less than significant.

Alternative 6

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational Impacts

Alternative 6 would require routine maintenance that would be performed by the system operator. Potential pollutants (e.g., petroleum products/lubricants, paints, solvents, and other Alternative 6 related products) used during Alternative 6 operations and maintenance would contribute to water pollution. Uncontrolled discharge of runoff carrying these potential pollutants would result in significant impacts to water quality in receiving waters, which would violate federal, state, and local water quality standards and WDRs, if not appropriately managed. As previously discussed, Alternative 6 would be required to comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, and water quality control and/or sustainable groundwater management plans, including the Basin Plan (LARWQCB, 2014), the *Ballona Creek Watershed Management Plan* (LADPW, 2004), and the *LA River Master Plan* (Los Angeles County and Los Angeles County Department of Public Works, 2022), the MS4 Permit, the Caltrans NPDES Statewide Stormwater Permit, and the City of Los Angeles and County of Los Angeles LID Ordinance, as well as commonly used industry standards.

The City of Los Angeles city ordinances related to stormwater control and LID requirements for sustainability contain compliance provisions for BMPs that must address water infiltration, treatment, and peak-flow discharge. The City of Los Angeles provides guidance to developers of newly developed projects for compliance with regulatory standards through the LID Standards Manual.

As previously described, Alternative 6 would comply with all applicable regulations for all operational activities, including adherence to an approved LID plan that would identify the BMPs for Alternative 6 operations. Alternative 6 would incorporate into its design on-site drainage systems and sustainability features that would meet regulatory requirements of the applicable plans for the protection of water resources.

The LID Plan would identify the BMPs for the Alternative 6 post-construction design (i.e., operational characteristics to control/treat runoff for the range of potential pollutants). Alternative 6 would include design elements that would serve to infiltrate, capture and re-use stormwater in accordance with current LID requirements — thereby minimizing the potential for increased runoff volumes/rates and pollutant transport. LID design features, such as depressed landscape gardens for runoff retention and infiltration, permeable surfaces to reduce runoff volume, hardscape replacement with pervious or planted substitutions, bioswales or artistic water features that creatively convey runoff into planted or pervious areas, roof downspout discharges to vegetated areas, and rainwater cisterns and other on-site stormwater retention methods, would slow (detain or retain) stormwater, which would reduce the runoff volume discharged from Alternative 6 and would decrease the peak runoff discharge velocity for design storms — which would also ultimately reduce the amount of stormwater runoff burden into the City of Los Angeles' stormwater conveyance systems. As a result, less flow with fewer pollutants would be transported through the conveyance systems, and ultimately into surface waters, including ancillary exfiltration to the groundwater table. Additionally, natural treatment of infiltrated runoff would occur, thereby improving exfiltrated water from LID and water quality additions to the groundwater table.

Additionally, operation of Alternative 6 would not involve the extraction of any groundwater. Therefore, Alternative 6 would not be expected to result in a decrease in groundwater supplies or interfere substantially with groundwater recharge to the extent that Alternative 6 may impede sustainable groundwater management of the basin. Depending on final design features, exfiltration from LID BMPs is anticipated to improve groundwater recharge characteristics of the area.

Alternative 6 is anticipated to require Industrial General Permit (IGP) coverage for maintenance facilities, fueling operations, equipment cleaning/washing operations, and TPSSs. As such, an IGP SWPPP

would be prepared and submitted to the SWRCB prior to and adhered to during operations. IGP SWPPP BMPs would include good housekeeping, prevention and maintenance activities, material handling and waste management, erosion and sediment controls, training, recordkeeping, and reporting of spills or releases. Other BMPs may also be employed as appropriate, such as indoor/covered areas for maintenance, approved flammable/hazmat storage lockers for lubricants and other industrial liquids, drip/spill protection in maintenance areas and similar BMPs when conducting tower maintenance, dry clean-up practices, and dedicated enclosed areas for metal working, painting, and welding.

With adherence to existing laws and regulations and with proper implementation of stormwater compliance requirements, potential impacts related to conflict with implementation of a water quality control plan or sustainable groundwater management plan during operations of Alternative 6 would be less than significant.

Construction Impacts

Construction of the Alternative 6 components would be conducted in several phases, including site preparation and installation of foundations and columns; erection of stations; construction of tunnels; and construction of ancillary components, including replacement or restoration of paving, sidewalk, and landscaping.

Construction of Alternative 6 has the potential to impact the water quality of downstream receiving waters if applicable and appropriate BMPs are not implemented. Construction activities such as demolition of existing site structures and excavation for foundations would temporarily expose bare soil and would temporarily increase erosion. Exposed or stockpiled soils would also be at increased risk for erosion. Uncontrolled erosion and discharge of sediments and other potential pollutants would affect water quality in Alternative 6 receiving waters (e.g., the Pacoima Wash, Tujunga Wash, and Los Angeles River) if not appropriately managed by proper implementation of the construction SWPPP.

In addition to sediments, other pollutants including trash, concrete waste, and petroleum products (e.g., heavy equipment fuels, solvents, and lubricants) would contribute to stormwater pollution if not appropriately managed. The use of construction equipment and other vehicles during Alternative 6 construction would result in spills of oil, brake fluid, grease, antifreeze, or other vehicle-related fluids, which would contribute to water quality impacts if not appropriately managed. Improper handling, storage, or disposal of fuels and vehicle-related fluids or improper cleaning and maintenance of equipment would result in accidental spills and discharges that would contribute to water pollution.

Nuisance groundwater may be encountered during installation of piles for each of the components, which may result in degradation of groundwater quality if not addressed properly. Additionally, potentially impacted groundwater may result in degradation of surface water if it is not properly managed during construction activities. Although construction activities are not anticipated to interfere substantially with groundwater recharge, groundwater resource supplies, or groundwater quality, any accidental interference would be handled in accordance with applicable federal, state, regional, and local laws and regulations, groundwater management plans, and WDRs for groundwater discharge.

As discussed previously, Alternative 6 would be required to comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, and water quality control and/or sustainable groundwater management plans, including the Basin Plan, as well as commonly used industry standards. Alternative 6 would comply with the Caltrans NPDES Statewide Stormwater Permit; the NPDES CGP; the MS4 Permit; the City of Los Angeles and County of Los Angeles LID Ordinance; the City of Los Angeles Municipal Code, and all other applicable regulations for all construction activities.

In accordance with the CGP, Alternative 6 would be required to implement a construction SWPPP, which must be submitted to the SWRCB prior to construction and adhered to during construction. Proper implementation of the construction SWPPP would avoid potential impacts to water quality. The construction SWPPP would identify the BMPs that would be in place to protect water quality prior to the start of construction activities and during construction Alternative 6. The BMP categories would include erosion control, sediment control, non-stormwater management, and materials management BMPs. Although specific temporary construction-related BMPs would be selected at the time of SWPPP preparation, potential BMPs would likely include fiber rolls, bonded-fiber matrix hydroseeding, soil furrowing, water bars, and check dams for erosion control, inlet protection (sand/gravel bags and geotextiles), silt fencing, sediment traps/basins for sediment controls, soil berming around disturbed areas, and phasing of soil disturbance during the wet season (i.e., limiting widespread grading) for effectively managing erosion and pollutant discharge during significant rainfall events.

With adherence to existing laws and regulations and with proper implementation of stormwater compliance requirements, potential impacts related to conflict with implementation of a water quality control plan or sustainable groundwater management plan during construction of Alternative 6 would be less than significant.

Maintenance and Storage Facilities

Monorail Transit Maintenance and Storage Facility Base Design (Alternatives 1 and 3)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

The MSF Base Design would have the same potential operational and construction impacts as described above for Alternatives 1 and 3. The MSF Base Design would be required to comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, and water quality control and/or sustainable groundwater management plans. The MSF Base Design would incorporate into its design on-site drainage systems and sustainability features that would meet regulatory requirements of the applicable plans for the protection of water resources. The MSF Base Design would include design elements that would serve to capture, treat, and re-use stormwater in accordance with current LID requirements, promoting infiltration and groundwater recharge. The MSF Base Design would not be expected to result in a decrease in groundwater supplies or interfere substantially with groundwater recharge to the extent that the MSF Base Design may impede sustainable groundwater management of the basin. Dewatering would be limited to the construction phase only. Extracting large volumes of groundwater that would decrease groundwater supplies would not be expected during construction.

With adherence to existing laws and regulations and with proper implementation of stormwater compliance requirements, potential impacts related to conflict with implementation of a water quality control plan or sustainable groundwater management plan during operations and construction of the MSF Base Design would be less than significant.

Monorail Transit Maintenance and Storage Facility Design Option 1 (Alternatives 1 and 3)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

MSF Design Option 1 would have the same potential operational and construction impacts as described above for Alternatives 1 and 3. The MSF Design Option 1 would be required to comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, and water quality control and/or sustainable groundwater management plans. The MSF Design Option 1 would incorporate into its design on-site drainage systems and sustainability features that would meet regulatory requirements of the applicable plans for the protection of water resources. The MSF Design Option 1 would include design elements that would serve to capture, treat, and re-use stormwater in accordance with current LID requirements, promoting infiltration and groundwater recharge. The MSF Design Option 1 would not be expected to result in a decrease in groundwater supplies or interfere substantially with groundwater recharge to the extent that the MSF Design Option 1 may impede sustainable groundwater management of the basin. Dewatering would be limited to the construction phase only. Extracting large volumes of groundwater that would decrease groundwater supplies would not be expected during construction.

With adherence to existing laws and regulations and with proper implementation of stormwater compliance requirements, potential impacts related to conflict with implementation of a water quality control plan or sustainable groundwater management plan during operations and construction of the MSF Design Option 1 would be less than significant.

Electric Bus Maintenance and Storage Facility (Alternative 1)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

The Electric Bus MSF would have the same potential operational and construction impacts as described above for Alternative 1. The Electric Bus MSF would be required to comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, and water quality control and/or sustainable groundwater management plans. The Electric Bus MSF would incorporate into its design on-site drainage systems and sustainability features that would meet regulatory requirements of the applicable plans for the protection of water resources. The Electric Bus MSF would include design elements that would serve to capture, treat, and re-use stormwater in accordance with current LID requirements, promoting infiltration and groundwater recharge. The Electric Bus MSF would not be expected to result in a decrease in groundwater supplies or interfere substantially with groundwater recharge to the extent that the Electric Bus MSF may impede sustainable groundwater management of the basin. Dewatering would be limited to the construction phase only. Extracting large volumes of groundwater that would decrease groundwater supplies would not be expected during construction.

With adherence to existing laws and regulations and with proper implementation of stormwater compliance requirements, potential impacts related to conflict with implementation of a water quality control plan or sustainable groundwater management plan during operations and construction of the Electric Bus MSF would be less than significant.

Heavy Rail Transit Maintenance and Storage Facility (Alternatives 4 and 5)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

As described in Section 3.9.4.5, Alternatives 4 and 5, the MSF would be required to comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, and water quality control and/or sustainable groundwater management plans. The MSF would incorporate into its design on-site drainage systems and sustainability features that would meet regulatory requirements of the applicable plans for the protection of water resources. The MSF would include design elements that would serve to capture, treat, and re-use stormwater in accordance with current LID requirements, promoting infiltration and groundwater recharge. The MSF would not be expected to result in a decrease in groundwater supplies or interfere substantially with groundwater recharge to the extent that the MSF may impede sustainable groundwater management of the basin. Dewatering would be limited to the construction phase only. Extracting large volumes of groundwater that would decrease groundwater supplies would not be expected during construction.

With adherence to existing regulations and with proper implementation of stormwater compliance requirements, potential impacts related to conflict with implementation of a water quality control plan or sustainable groundwater management plan during operations and construction of the MSF would be less than significant.

Heavy Rail Transit Maintenance and Storage Facility (Alternative 6)

Impact Statement

Operational Impact: Less Than Significant

Construction Impact: Less Than Significant

Operational and Construction Impacts

As described in Section 3.9.4.5, Alternative 6, the MSF would be required to comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, and water quality control and/or sustainable groundwater management plans. The MSF would incorporate into its design on-site drainage systems and sustainability features that would meet regulatory requirements of the applicable plans for the protection of water resources. The MSF would include design elements that would serve to capture, treat, and re-use stormwater in accordance with current LID requirements, promoting infiltration and groundwater recharge. The MSF would not be expected to result in a decrease in groundwater supplies or interfere substantially with groundwater recharge to the extent that the MSF may impede sustainable groundwater management of the basin. Dewatering would be limited to the construction phase only. Extracting large volumes of groundwater that would decrease groundwater supplies would not be expected during construction.

With adherence to existing regulations and with proper implementation of stormwater compliance requirements, potential impacts related to conflict with implementation of a water quality control plan or sustainable groundwater management plan during construction and operation of the MSF would be less than significant.

3.9.5 Mitigation Measures

Operational Impacts

No mitigation measures are required.

Construction Impacts

No mitigation measures are required.

Table 3.9-7. Summary of Mitigation Measures and Impacts Before and After Mitigation for the Project Alternatives

CEQA Impact Topic		No Project	Alt 1	Alt 3	Alt 4	Alt 5	Alt 6
Operational							
Impact HWQ-1: Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS
Impact HWQ-2: Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS
Impact HWQ-3: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i. result in substantial erosion or siltation on- or off-site; ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv. impede or redirect flood flows??	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS
Impact HWQ-4: Would the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS

CEQA Impact Topic		No Project	Alt 1	Alt 3	Alt 4	Alt 5	Alt 6
Impact HWQ-5: Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS
Construction							
Impact HWQ-1: Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS
Impact HWQ-2: Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS
Impact HWQ-3: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i. result in substantial erosion or siltation on- or off-site; ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv. impede or redirect flood flows?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS
Impact HWQ-4: Would the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS

CEQA Impact Topic		No Project	Alt 1	Alt 3	Alt 4	Alt 5	Alt 6
Impact HWQ-5: Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS

Source: HTA, 2024

Alt = Alternative
CEQA = California Environmental Quality Act
HWQ = Hydrology and Water Quality
LTS = Less than significant
NA = Not applicable

Table 3.9-8. Summary of Mitigation Measures and Impacts Before and After Mitigation for the Maintenance Storage Facilities

CEQA Impact Topic		MRT MSF (Alt 1 and 3)	MRT MSF Design Option 1 (Alt 1 and 3)	Electric Bus MSF (Alt 1)	HRT MSF (Alt 4, 5)	HRT MSF (Alt 6)
Operational						
Impact HWQ-1: Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS
Impact HWQ-2: Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS
Impact HWQ-3: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i. result in substantial erosion or siltation on- or off-site; ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv. impede or redirect flood flows?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS
Impact HWQ-4: Would the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS

CEQA Impact Topic		MRT MSF (Alt 1 and 3)	MRT MSF Design Option 1 (Alt 1 and 3)	Electric Bus MSF (Alt 1)	HRT MSF (Alt 4, 5)	HRT MSF (Alt 6)
Impact HWQ-5: Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS
Construction						
Impact HWQ-1: Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS
Impact HWQ-2: Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS
Impact HWQ-3: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i. result in substantial erosion or siltation on- or off-site; ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv. impede or redirect flood flows?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS
Impact HWQ-4: Would the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS

CEQA Impact Topic		MRT MSF (Alt 1 and 3)	MRT MSF Design Option 1 (Alt 1 and 3)	Electric Bus MSF (Alt 1)	HRT MSF (Alt 4, 5)	HRT MSF (Alt 6)
Impact HWQ-5: Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS

Source: HTA, 2024

Alt = Alternative
HWQ = Hydrology and Water Quality
LTS = Less than significant
NA = Not applicable