

3.10 HYDROLOGY AND WATER QUALITY

This section of the Draft EIR provides an analysis of the potential impacts on hydrology and water quality.

3.10-1 Regulatory Framework

Federal, state, regional, and local regulations concerning hydrology and water quality are described in the following section.

3.10-1.1 Federal Regulations

Clean Water Act

The Clean Water Act (CWA) (Title 33 of the United States Code [USC], 1972) is the nation's primary mechanism for protecting and improving water quality. The goal of the CWA is to eliminate the discharge of pollutants into the nation's waters, and to restore and maintain their chemical, physical and biological integrity. The CWA makes the states and the United States Environmental Protection Agency (USEPA) jointly responsible for identifying and regulating both point (localized) and nonpoint (diffuse) sources of pollution. A 1987 amendment to the CWA added Section 402(p), which requires the USEPA to develop regulations for the control of nonpoint source discharges, which generally result from surface runoff, precipitation, drainage, seepage, or hydrologic stormwater modification.

Section 401(a)(1) of the CWA specifies that any applicant for a federal license or permit to conduct any activity, including, but not limited to, the construction or operation of facilities that may result in any discharge into navigable waters, shall provide the federal licensing or permitting agency a certification from the state in which the discharge originates or will originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the navigable water at the point where the discharge originates or will originate. Section 401(a)(1) also specifies that any such discharge will comply with the applicable provisions of Sections 301, 302, 303, 306 and 307 of the CWA. Succinctly, this means that in California, the Regional Water Quality Control Board (RWQCB) must certify that a project will comply with water quality standards. The Section 401 Program was recently updated with new procedural requirements established by the Environmental Protection Agency's newly promulgated "Clean Water Act Section 401 Certification Rule" (85 Fed. Reg. 42,210 [July 13, 2020]) (EPA, 2020). These requirements relate more to between-agency coordination timelines and procedures. In addition, the State Water Resources Control Board (SWRCB) updated their Section 401 procedures with a new application process and state wetland definition (SWRCB, 2019a; SWRCB, 2019b). These new procedures became effective May 2020.

Section 402 of the CWA also established the National Pollutant Discharge Elimination System (NPDES). NPDES permits are required for the discharge of pollutants from point sources into navigable waters. In California, the SWRCB and the nine RWQCBs are responsible for administering the NPDES stormwater program.

Section 404 of the CWA and Executive Order 11990 authorize the Secretary of the Army, acting through the United States Army Corps of Engineers (USACE), to issue permits when a federally-funded project impacts "Waters of the U.S." Section 404 of the CWA establishes a permit program for the discharge of dredged or fill material into Waters of the U.S. Waters of the U.S. are those waters used in interstate or foreign commerce, subject to ebb and flow of tide, and all interstate waters, including interstate wetlands. Waters of the U.S. are further defined as all other waters such as navigable waterways, intrastate lakes, rivers, streams, intermittent streams, mudflats, sandflats, wetlands, sloughs, prairie

potholes, wet meadows, playa lakes, natural ponds or impoundments of water, tributaries of waters and territorial seas. This permit is not required as part of the Project unless USACE jurisdictional waters are impacted, which is not anticipated.

Section 303(d) of the CWA requires that states maintain a list of impaired waterbodies. Impaired waterbodies do not meet water quality standards, even after generators of point sources of pollution have implemented the minimum required levels of pollution control technology. Furthermore, Section 303(d) requires that priority rankings and action plans are established for waterbodies on the impaired waterbodies list, and that Total Maximum Daily Loads (TMDL) be developed to provide water quality goals. TMDLs are discussed in more detail in Section 3.10-1.3. Listed water bodies, their associated impairments, and related TMDLs are described in Section 3.10-3.2 for water bodies located within or downstream of the resource study areas (RSA) for the Proposed Project and Options.

Federal Emergency Management Agency Executive Order 11988 and National Flood Insurance Program

Executive Order 11988 (Floodplain Management, 1977) directs all federal agencies to avoid to the extent possible long- and short-term adverse impacts associated with the modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative. The Federal Emergency Management Agency (FEMA) provides floodplain information and regulates development in and around FEMA established floodplains for many areas of the country through Flood Insurance Studies and their associated Flood Insurance Rate Maps (FIRM). FEMA manages the National Flood Insurance Program (NFIP) that provides flood insurance to property owners renters and businesses (FEMA, 2022).

United States Fish and Wildlife Coordination Act

The United States Fish and Wildlife Service (USFWS) Coordination Act (16 USC 661-666) requires consultation with the USFWS and the state agency responsible for wildlife resources whenever a stream or other body of water is proposed to be modified for any purpose whatsoever. The Proposed Project is not anticipated to require USFWS coordination related to impacts on rivers, streams, or lakes.

3.10-1.2 State and Regional Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (1969), codified as Division 7 (Water Quality) of the State Water Code, established the responsibilities and authorities of the SWRCB and the nine RWQCBs. According to Section 13001 of the Porter-Cologne Water Quality Control Act, these RWQCBs are to be "... the principal state agencies with primary responsibility for the coordination and control of water quality." The RWQCBs issue NPDES permits for discharges into surface waters. Section 13050 directs each RWQCB to "...formulate and adopt water quality control plans (Basin Plans) for all areas within the region " (SWRCB, 2020).

The RWQCBs implement the Basin Plans by issuing and enforcing waste discharge requirements (WDR) to individuals, communities, or businesses whose discharges can affect water quality. These regulations can be either WDRs for discharges onto land, or NPDES permits for discharges into surface water. For surface waters that are not within federal jurisdiction (i.e., not considered waters of the U.S.), the same new procedures as mentioned in Section 3.10-1.1 above apply here as well (California Water Boards, 2022). The Basin Plan implemented by the RWQCB is described in more detail in Section 3.10-1.3.

California Fish and Game Code (Section 1602)

Section 1602 of the California Fish and Game Code requires agencies to notify the California Department of Fish and Wildlife (CDFW) of any project that will divert, obstruct, or change the natural flow or bed, channel, or bank of any river, stream, or lake. If CDFW jurisdictional areas are impacted by a project, a Section 1602 Streambed Alteration Agreement would be required. The Proposed Project is not anticipated to impact CDFW jurisdictional areas related to rivers, streams, or lakes.

Construction General Permit

Projects within the state that would disturb greater than one acre of ground surface during construction are required to obtain coverage under the SWRCB Construction General Permit (Order 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ). The existing Construction General Permit expired September 2, 2014 but was administratively extended until the SWRCB adopted a permit reissuance. An updated version of the Construction General Permit (Order No. 2022-0057-DWQ) was approved on September 8, 2022 and will go into effect on September 1, 2023; the permit is valid for five years (SWRCB, 2022a).

Construction activities that are typically subject to this permit include clearing, grading and disturbances to the ground such as stockpiling, or excavation. The RWQCB is responsible for administering the Construction General Permit within its jurisdiction. The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) developed by a certified Qualified SWPPP Developer. SWPPPs are required to include best management practices (BMP) designed to protect water quality (SWRCB, 2013). Example BMPs include but are not limited to soil stabilization (i.e., erosion control), sediment control, and waste management. The Los Angeles RWQCB Construction Site Best Management Practices Manual lists minimum required BMPs that must be implemented during various construction activities (LARWCB, 2010).

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA), passed by the State in 2014, was designed to help protect groundwater quality and supply over the long-term. The SGMA ranked groundwater basins throughout the state as high, medium, low, or very low priority with regard to protecting their groundwater. Local agencies that manage high and medium priority basins are required to form groundwater sustainability agencies that develop and implement groundwater sustainability plans to avoid undesirable results and mitigate overdraft within 20 years. The Coastal Plan of Los Angeles is currently ranked as “very low” priority (California Department of Water Resources, 2022). Therefore, a groundwater sustainability plan has not been developed by the RWQCB for the West Coast Subbasin of the Coastal Plain of the Los Angeles Groundwater Basin.

Los Angeles Regional Water Quality Control Board

Surface water discharge resulting from construction dewatering activities is regulated under Los Angeles RWQCB Order No. R4-2003-0108 NPDES No. CAG994004 (LRWQCB, 2003). Effluent limits are also established by this permit. The TMDLs are achieved on the local and regional levels through the NPDES construction permitting process and the implementation of regional and local watershed management plans (SWRCB, 2018).

The RWQCB implements the Section 402 program (see Section 3.10-1.1 above) and regulates construction activities and groundwater dewatering. Discharge of dewatered groundwater to surface waters during construction is regulated by the RWQCB Waste Discharge Requirements for Construction Dewatering (Order No. R4-2018-0125).

The RWQCB promulgates policies to protect surface waters (e.g., hydromodification); and protects surface and groundwater through implementation of the Basin Plan. The RWQCB adopted the regional Basin Plan in 1994 in compliance with the State Porter-Cologne Water Quality Control Act. The Basin Plan assigns beneficial uses, water quality objectives, waste discharge requirements, and TMDLs to each 303(d)-listed receiving water body. A TMDL is a calculation of the maximum amount of a pollutant allowed to enter a waterbody so that the waterbody will meet and continue to meet water quality objectives for that particular pollutant. Specific TMDLs and beneficial uses for the watersheds within the RSAs are included in Section 3.10-3.2.

The most recent RWQCB Regional Municipal Separate Storm Sewer System (MS4) National Pollutant Discharge Elimination System (NPDES) Permit¹ (MS4 Permit) was adopted in 2021 (Order No. 2021-0105). The MS4 Permit regulates stormwater discharges and protects water quality. The MS4 Permit lists minimum BMPs that must be implemented on all construction sites, including erosion control, sediment control, non-stormwater management, and waste management BMPs. The MS4 Permit also lists additional BMPs that must be implemented on all construction sites disturbing one or more acre, along with additional BMPs for enhanced risk construction sites. BMPs for roadway paving and repair are also specified. Non-stormwater discharges to receiving waters are prohibited by the MS4 Permit (with some exceptions) (LARWQCB, 2021).

Low impact development (LID) plans are required by the MS4 Permit for new developments that would add 10,000 square feet of impervious surfaces to an area. The LID Plan must include design details/BMPs to retain stormwater runoff on site for the stormwater quality design volume (SWQDv). The SWQDv is defined as either the eighty-fifth (85th) percentile twenty-four (24) hour runoff event as determined from the Los Angeles County eighty-fifth (85th) percentile precipitation isohyetal map; or the volume of runoff produced from a three-quarters (0.75) inch, twenty-four (24) hour rain event, whichever is greater. Retaining stormwater for the SWQDv can be achieved through infiltration and/or bioretention. If it is not feasible to fully infiltrate or use bioretention to handle the SWQDv, stormwater runoff harvest and use is the next preferred control measure (LADPW, 2014).

Enhanced Watershed Management Programs

Watersheds within California have been grouped into Watershed Management Areas (WMAs), which are generally single large watersheds containing smaller watersheds. Two WMAs are located within the RSAs: Santa Monica Bay and Dominguez Channel (SWRCB, 2021; 2022b). Enhanced watershed management programs (EWMP) have been prepared that encompass both WMAs: the Beach Cities EWMP and the Dominguez Channel EWMP. EWMPs are comprehensive watershed plans intended to facilitate effective, watershed-specific implementation strategies in accordance with the MS4 Permit and summarize specific water quality priorities (LARWQCB, 2015;LARWQCB, 2018).

The Beach Cities EWMP was last updated in 2016 by the Cities of Hermosa Beach, Manhattan Beach, Redondo Beach and Torrance, together with the Los Angeles County Flood Control District (LACFCD) for the Santa Monica Bay and Dominguez Channel watersheds within their jurisdictions. This area is collectively referred to herein as the Beach Cities EWMP Area. Approximately 7,840 acres of the Beach

¹ Order No. R4-2012-0175 NPDES Permit No. CAS004001 Waste Discharge Requirements for Municipal Separate Storm Sewer System (MS4) Discharges within the Coastal Watersheds of Los Angeles County, except those Discharges Originating from the City of Long Beach MS4.

Cities EWMP Area drains to Santa Monica Bay; approximately 7,380 acres is tributary to the Dominguez Channel (including the Torrance Carson Channel [Torrance Lateral]) (Beach Cities EWMP Group, 2016). More information on the Santa Monica Bay and Dominguez Channel watersheds is provided in Section 3.10-3.2.

The Dominguez Channel EWMP was last updated in 2016 by the cities of Carson, El Segundo, Hawthorne, Inglewood, Lawndale, Lomita, and Los Angeles; the unincorporated areas of the County of Los Angeles; and the LACFCD for the watersheds within their jurisdictions. This area is collectively referred to as the Dominguez Channel WMA. The Dominguez Channel WMA encompasses approximately 133 square miles of land and water, including the Dominguez Channel Watershed, the Machado Lake Watershed, and the Los Angeles/Long Beach Harbors Watershed (Dominguez Channel Watershed Management Group, 2015). More information on the Dominguez Channel Watershed is provided in Section 3.10-3.2. The Machado Lake and Los Angeles/Long Beach Harbors watersheds are not located within the vicinity of the RSAs and are thus not discussed further.

Metro's Water Use and Conservation Policy

Metro adopted a Water Use and Conservation Policy statement in July 2009 to conserve the use of potable water resources at its facilities in the most cost-effective and efficient manner (Metro, 2010). The goal of Metro's Water Use and Conservation Policy is to conserve the use of potable water resources at its facilities in the most cost-effective and efficient manner. The policy asserts that the use of water for construction, operations and maintenance purposes must be consistent with local, state, or federal water conservation measures and that in instances where it is necessary to protect public safety, human health and the environment, Metro may deviate from water conservation measures. In addition, Metro is committed to use drought-tolerant plants for landscaping to the maximum extent practical.

3.10-1.3 Local Regulations

City of Hawthorne

The City of Hawthorne’s City Code contains regulations that focus on water resources and water conservation, described in Table 3.10-1.

Table 3.10-1. City of Hawthorne - Relevant Regulations

Code/Goal/Policy	Description
City of Hawthorne City Code	
Title 8, Chapter 50.070	Projects applying to the City for a grading permit that will disturb five or more acres must submit satisfactory proof to city that: (1) a notice of intent (NOI) to comply with a state Construction General Permit has been filed; and (2) a SWPPP has been prepared before the City shall issue any grading or building permit on the construction project.
Title 8, Chapter 50.060	Best management practices must be implemented during project operation, including the removal and lawful disposal of any solid waste or any other substance which, if it were to be discharged to the MS4, would be a pollutant, including fuels, waste fuels, chemicals, chemical wastes and animal wastes, from any part of the premises exposed to stormwater.
Title 8, Chapter 60.040	The use of recycled or non-potable water for construction purposes is required, when available. The washing down of paved surfaces, including, but not limited to, sidewalks, driveways, parking lots, tennis courts, or patios, is prohibited, except when it is necessary to alleviate safety or sanitation hazards. The washing of vehicles requires the use of a bucket and a hand-held hose with positive shut-off nozzle, mobile high pressure/low volume wash system, or at a commercial site that recirculates (reclaims) water on-site. Washing during hot conditions is prohibited when additional water is required due to evaporation.

Source: City of Hawthorne, 2022

City of Lawndale

The City of Lawndale’s City Code and General Plan contains BMPs and objectives and policies that focus on water resources and water conservation, described in Table 3.10-2.

Table 3.10-2. City of Lawndale - Relevant Regulations

Code/Goal/Policy	Description
City of Lawndale City Code	
Title 13, Chapter 13.16	The Standard Urban Stormwater Mitigation Plan and Low Impact Development Implementation chapter requires compliance with the regional MS4 Permit, including retaining stormwater runoff for the SWQDv. The Chapter also includes BMPs for erosion control on slopes and channels, signage at storm drains, outdoor storage of materials, and outdoor trash storage areas.
City of Lawndale General Plan Land Use Element	
Goal 1	Conserve water resources in the city through retention of the existing drainage system, the protection of limited groundwater resources, and domestic water conservation measures.
Policy 1a	New construction and development shall conserve water through conservation techniques relating to water usage and waste (Policies 1b – 1g are similar).
Policy 1h	Provide additional storm drainage facilities, and improve existing deficient facilities, where necessary as determined by the LAC Dept. of Wastewater Management and/or the City of Lawndale.
City of Lawndale General Plan Conservation Element	
Implementation Program 1	<ul style="list-style-type: none"> > Water Conservation Ordinance about water conservation measures for new construction, development, landscaping, and general water usage and waste. > Utilization of runoff. Research and develop a system to utilize storm drainage runoff for public landscaping needs. > Surface Drainage Improvements. The City shall identify the locations in need of surface drainage facilities or improvements and coordinate with the LAC Dept. of Wastewater Management to carry out the improvement projects. > Zoning Ordinance Revisions. For replenishment of groundwater supply, the City shall revise the City’s zoning Ordinance to promote the use of permeable materials in order to encourage water percolation into the soil.

Source: City of Lawndale, 1992c; 1992f; 2022

City of Redondo Beach

The City of Redondo Beach’s City Code and General Plan contains BMPs and objectives and policies that focus on water resources, described in Table 3.10-3.

Table 3.10-3. City of Redondo Beach - Relevant Regulations

Code/Goal/Policy	Description
City of Redondo Beach City Code	
Title 5, Chapter 7	<p>The Stormwater Management and Discharge Control chapter includes hydrology and water quality-related regulations. The requirements of various sections of this chapter are detailed below.</p> <p>Section 109 lists prohibited discharges, including disposal of landscape debris (leaves, dirt, or other landscape debris) and discharges from the washing out of concrete trucks.</p> <ul style="list-style-type: none"> > Section 111 details general good housekeeping practices, including: <ul style="list-style-type: none"> • Runoff of water used for irrigation purposes shall be minimized to the maximum extent practicable. Runoff of water from the permitted washing down of paved areas shall be minimized to the maximum extent practicable. • Machinery or equipment that is to be repaired or maintained in areas susceptible to or exposed to stormwater, shall be placed in a manner so that leaks, spills, and other maintenance-related pollutants are not discharged to the storm sewer system. • Best management practices shall be used in areas exposed to stormwater for the removal and lawful disposal of all fuels, chemicals, fuel and chemical wastes, animal wastes, garbage, batteries, or other materials which have potential adverse impacts on water quality. > Section 113 states that construction activities and operations to comply with the current Municipal NPDES Permit by using smart growth practices and integrate LID practices and standards for stormwater pollution mitigation through means of infiltration, evapotranspiration, biofiltration, and rainfall harvest and use details prohibited discharges into the storm system.
City of Redondo Beach General Plan Infrastructure Systems and Community Services Element	
Policy 6.2.1	Ensure the provision and operation of adequate storm drainage facilities, where necessary, throughout the city.
Policy 6.2.3	Require that the approval of new development in the city be contingent upon the ability of the project to be served with adequate storm drainage infrastructure and service.
Policy 6.2.7	Require that improvements to or expansion of existing storm drainage facilities necessitated by specific new development projects be borne by the project proponent, either through the payment of impact fees or the actual construction of such improvements

Source: City of Redondo Beach, 1993d; 2022

City of Torrance

The City of Torrance’s City Code and General Plan contains BMPs and objectives and policies that focus on water resources, described in Table 3.10-4.

Table 3.10-4. City of Torrance – Relevant Regulations

Code/Goal/Policy	Description
City of Torrance City Code	
Division 4, Chapter 10	<p>The Stormwater and Urban Runoff Pollution Control chapter includes BMPs that must be implemented on construction sites that require a building or grading permit. These BMPs include:</p> <ul style="list-style-type: none"> > Retain on site the sediments generated on or brought to the project site, using treatment control or structural BMPs. > Retain construction-related materials and wastes, spills and residues at the project site and prevent discharges to streets, drainage facilities, the MS4, receiving waters or adjacent properties. > Contain non-stormwater runoff from equipment and vehicle washing at the project site. > Control erosion from slopes and channels through use of effective BMPs, such as limitation of grading during the wet season, inspection of graded areas during rain events, planting and maintenance of vegetation on slopes, if any, and covering any slopes susceptible to erosion. > Prepare and implement an erosion and sediment control plan > No person shall wash any concrete truck or any part of any concrete truck, in any place in the City except an area designated for that purpose by the City, if the City has designated such a place. No person shall permit or suffer any concrete rinsewater or wash water from any truck, pump, tool, or equipment to enter any drain, open ditch, street or road or any catch basin or any other part of the MS4.
Division 4, Chapter 11	<p>The Low Impact Development Strategies for Development and Redevelopment chapter includes contains requirements for stormwater pollution control measures in development and redevelopment projects, including implementation of LID strategies. This includes retaining stormwater runoff for the SWQDv per MS4 Permit requirements.</p>
Division 7, Chapter 9	<p>The Flood Hazard Insurance chapter identifies the requirements and provisions that apply to all areas of special flood hazards within the City. This section establishes a development permit process for flood hazard areas, designates a floodplain administrator for the City, and establishes standards for construction within flood hazard areas. These requirements are part of the City of Torrance’s participation in NFIP.</p>
City of Torrance General Plan Community Resources Element	
Policy CR.15.1	<p>Continue to cooperate with and support regional programs that protect water resources in Torrance.</p>
Policy CR.15.5	<p>Enforce regulations aimed at reducing groundwater and urban runoff pollution, including the National Pollutant Discharge Elimination System (NPDES) requirements of the Regional Water Quality Control Board.</p>
Policy CR.15.10	<p>Promote implementation of effective water conservation and water demand management measures including Best Management Practices.</p>
Policy CR.16.1	<p>Maintain the Madrona Marsh Nature Preserve for the enjoyment and education of present and future generations.</p>
Policy CR.16.2	<p>Support the dual use of drainage detention and retention basins for open space, recreation, and/or wildlife habitat opportunities, and increased groundwater recharge as long as the secondary use does not conflict or interfere with the operation and maintenance of the primary function of flood control and drainage.</p>

Source: City of Torrance, 2010c; 2022a

It should be noted that according to the Torrance General Plan, the Madrona Marsh is a permanent ecological preserve owned and maintained by the City of Torrance. The County of Los Angeles has also designated the Madrona Marsh and adjacent sandy upland as a Significant Ecological Area (SEA). SEAs are officially designated areas within the County with irreplaceable biological resources. A SEA within unincorporated areas of the County is maintained and regulated by the County's SEA Program, whereas a SEA within an incorporated city, such as the Madrona Marsh, is maintained and regulated by the incorporated city.

3.10-2 Methodology

Information in this section is focused on the following topics:

Hydrology

- > Identify and describe construction and operation activities that could affect surface runoff and drainage;
- > Identify and describe impacts related to surface runoff impervious surfaces (e.g., guideway viaduct, trench structure, and surface parking lots);
- > Identify and describe permits required; and
- > Ensure that project stormwater drainage regulatory requirements are met during construction and operation.

Water Quality

- > Identify issues that may prevent or slow the implementation of a water quality control plan (i.e., basin plan);
- > Identify and describe beneficial uses and potential effects;
- > Identify and describe impaired waters, and potential for increasing such impairments; and
- > Describe if there may be any violation of water quality standards, waste discharge requirements, or degradation of surface or groundwater quality.

Visual surveys of the RSAs were conducted in November of 2020. Site-based surveys consisted of visual observation and selected photographic documentation of all surface water features within the RSAs, but especially parks and open space areas. Thus, based on the urban nature of any new areas, along with the general stasis of the baseline conditions, it was determined to be acceptable to conduct web-based aerial reconnaissance. A visual review was conducted in May 2020 using web-based aerial photographs of the RSAs. This work also included using Google Earth (2020) to evaluate both past (starting in 1994) and current conditions.

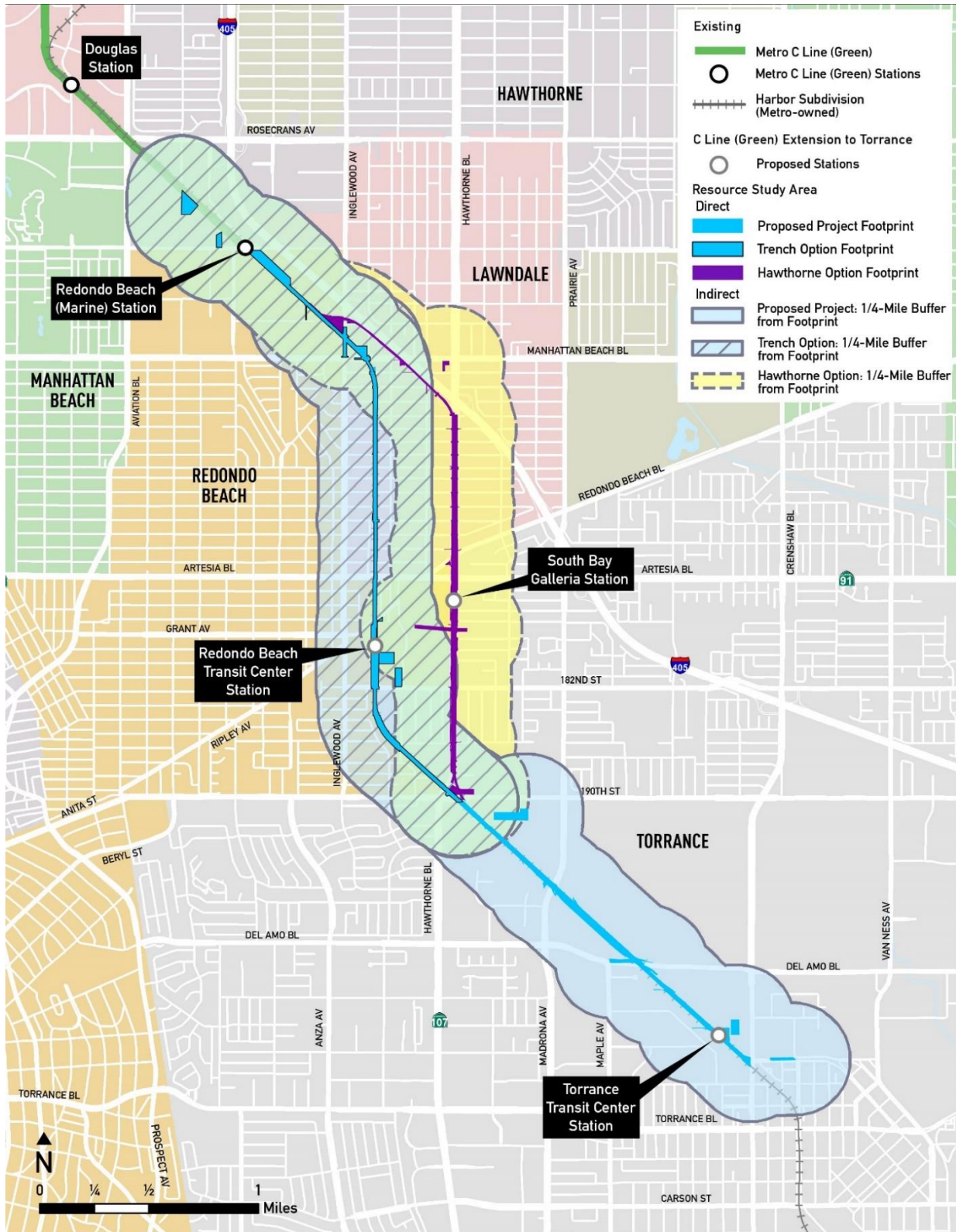
The amount of impervious surfaces was calculated using proportion assumptions from the Los Angeles County Hydrology Manual, Appendix D (Los Angeles County, 2006). Although the Trench and Hawthorne Options are defined as the segment from the Redondo Beach (Marine) Station to 190th Street (see Chapter 2, Project Description), the impervious surface area calculations for the options were conducted "end-to-end" (from the Redondo Beach [Marine] Station to Torrance Transit Center [TC]) to allow for better comparison with the Proposed Project.

3.10-2.1 Resource Study Area

To analyze direct impacts to hydrology and water quality, the direct RSA was established as the project footprint. The project footprint includes the area necessary to construct, operate, and maintain the Proposed Project, Trench Option, or Hawthorne Option. The permanent footprint area includes the light rail guideway, as well as other permanent features such as the surface parking lot at the Torrance TC Station, and, for the Proposed Project and Trench Option, areas where the existing freight track would be relocated within the Metro owned railroad right-of-way (Metro ROW). Additionally, to understand hydrology and water quality impacts in a larger context, an indirect RSA was established as a quarter-mile buffer of the Proposed Project, Trench Option, and Hawthorne Option footprints. The direct and indirect RSAs are shown in Figure 3.10-1.

The impacts section addresses the impacts of the Proposed Project, Trench Option, and Hawthorne Option based on an analysis of water resources within the RSAs as described in the existing conditions section. The analysis considers whether the Proposed Project and Options would contribute to a new or existing deficiency in stormwater conveyance capacity downstream of the RSAs. The analysis also evaluates the pollutants expected to be generated by the Project and Options in relation to receiving water impairments and their related TMDLs. Existing setting information and analysis is also included in Appendix 3.10-A, Drainage Study/Hydraulics Report.

Figure 3.10-1. Resource Study Areas



Source: STV, 2022

3.10-2.2 Significance Thresholds

Based upon the thresholds of significance contained in Appendix G of the CEQA Guidelines, implementation of the Proposed Project would result in a significant impact if any of the following occurred:

- a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality;
- b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin;
- c. 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 offsite;
 - 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;
- d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or
- e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

3.10-2.3 Project Features

As described in Chapter 2, Project Description, a number of features have been incorporated into the project to ensure compliance with the laws, guidelines, and best practices of regulatory agencies. The following project features have been developed for hydrological resources and water quality.

PF-HWQ-1. SWPPP Implementation per Construction General Permit and MS4 Permit

Construction of the Proposed Project, Trench Option, and Hawthorne Option would disturb greater than one acre of ground surface and are thus subject to the Construction General Permit SWPPP requirements. The SWPPP would include BMPs designed to prevent impacts to water quality from occurring during construction. BMPs included would be the minimum BMPs required by the MS4 Permit for all construction sites and additional BMPs determined necessary by the SWPPP developer. BMPs designed to prevent introduction of chemicals, trash, and/or hazardous substances into waters may include but are not limited to fueling equipment offsite, secondary containment, drip pans, spill response plans, and designed waste receptacles on site. BMPs designed to prevent erosion, prevent sedimentation, and slow and capture runoff on the construction site may include but are not limited to stabilized construction entrances/exits, fiber rolls, silt fences, sandbags, water application for dust control, check dams, drainage inlet protections, infiltration basins, and hydroseeding. BMPs would be implemented before, during, and/or immediately after construction.

PF-HWQ-2. Groundwater Treatment and Discharge per RWQCB Waste Discharge Requirements for Construction Dewatering

Per the requirements of the RWQCB Waste Discharge Requirements for Construction Dewatering, dewatered groundwater would be treated if necessary and then discharged in a pre-approved location specified by said requirements.

PF-HWQ-3. Trench Construction Groundwater Pressure Control

During Trench Option construction, BMPs would be implemented that include but are not limited to installing wall drains and appropriate drainage at the top of the trench to help relieve groundwater pressure buildup along the trench walls (Metro 2022b). BMPs used for groundwater pressure control would minimize the potential for introduction of pollutants into groundwater and surface flows, as well as the potential for erosion, siltation, and flooding to occur on or offsite.

PF-HWQ-4. Trench Construction Runoff Collection and Treatment

During Trench Option construction, surface runoff flowing within the trench would be collected, pumped out of the trench, treated (if necessary), and discharged a pervious area on site for infiltration into the soil. BMPs used for surface runoff collection, treatment, and discharge would minimize the potential for introduction of pollutants into surface runoff, as well as the potential for erosion, siltation, flooding, and exceedance of existing storm drain system capacities on or offsite. Surface runoff treatment and discharge would comply with RWQCB Basin Plan water quality requirements.

PF-HWQ-5. Temporary Storm Drain Inflow Rerouting

Although no existing storm drain rerouting is proposed under the Trench Option, runoff from the Trench Option footprint may be directed to different discharge points than existing points to avoid adverse hydrology and water quality impacts. Hawthorne Option construction would involve the permanent rerouting of two major storm drains running parallel to the alignment and one minor storm drain crossing the alignment. While these new permanent storm drain routes are constructed, temporary rerouting of inflows would be necessary during Hawthorne Option construction.

For both the Trench and Hawthorne Options, stormwater inflows would be captured, treated (if necessary), rerouted around the construction site, and discharged into the existing storm drain system. Treatment and discharge of storm drain inflows to the existing storm drain system would be conducted per RWQCB Basin Plan water quality requirements.

PF-HWQ-6. LID BMPs per Regional Requirements

The operational design of the Proposed Project, Trench Option, and Hawthorne Option alignments would include LID BMPs designed to retain the SWQDv on site per regional LID requirements. Examples of potential LID BMPs that may be implemented include but are not limited to increasing runoff's flow path length of travel and providing on-site detention basins for retainment and infiltration. Additional runoff (beyond the SWQDv) would continue to be discharged via new or existing tie-ins to the existing stormwater drainage system. In elevated portions of the alignment, runoff would be collected by down drains. Discharge locations of underdrains installed along the Proposed Project alignment would be the same as existing discharge locations. Although no existing storm drain rerouting is proposed under the Trench Option, runoff from the Trench Option footprint may be directed to different existing discharge points. Rerouted storm drains under the Hawthorne Option would be discharged to the same or similar discharge points as existing conditions. Existing catch basins on adjacent storm drains would be retained during operation to prevent debris and trash from entering the stormwater drainage system.

PF-HWQ-7. Trench Operation Runoff Collection and Treatment

During Trench Option operation, runoff that exceeds the SWQDv in the trench would be collected via a sump drainage system (two sumps in the vicinity of Manhattan Beach Boulevard and 182nd Street) at the low point along the trenched alignment. Runoff collected in the sump would be treated as needed, and then would either be pumped or flow via gravity from the sump to the existing storm drain system in compliance with RWQCB Basin Plan water quality requirements.

PF-HWQ-8. City of Torrance Flood Zone Requirements

A small portion of the Proposed Project temporary footprint would be located within the 100-year flood zone, where a temporary construction easement would be needed for removal of an existing spur track. Construction in this area would be required to comply with Division 7, Chapter 9 of the Torrance City Code, titled "Flood Hazard Insurance." This section establishes a development permit process for flood hazard areas, designates a floodplain administrator for the City, and establishes standards for construction within flood hazard areas.

3.10-3 Affected Environment / Existing Conditions

This section describes the affected environment/existing conditions related to water resources within the RSAs. In addition, resources located outside of the RSAs are also discussed if they are regionally significant and/or downstream of the RSAs (thereby potentially affected by Proposed Project activities).

3.10-3.1 Climate

With prevailing winds from the west and northwest, moist air from the Pacific Ocean is carried inland across the County until it is forced upward by the mountains. The resulting storms, common from November through March, are followed by dry periods during summer months. Differences in topography are responsible for large variations in temperature, humidity, precipitation, and cloud cover throughout the County. The coastal portions of the County, with mild rainy winters and warm dry summers, have a subtropical Mediterranean climate. Precipitation in the Region generally occurs as rainfall, although snowfall can occur at high elevations. Most precipitation occurs during limited storm events. The average annual rainfall for Los Angeles County is 15.7 inches. However, large variations exist within the County, ranging from approximately 14 inches for the coastal plain to over 35 inches in the mountains (LARWCQB, 2018; 2021).

3.10-3.2 Watersheds and Surface Water Quality Within the RSA

As discussed above, two WMAs are located within the RSAs: Santa Monica Bay and Dominguez Channel (SWRCB 2021; 2022b). As noted, EWMPs have been prepared for both of these WMAs. Information has been included below on two applicable watersheds located within the Beach Cities and Dominguez Channel EWMP Areas.

Watershed boundaries are also assigned hydrologic units, each of which can be identified by a 12-digit hydrologic unit code (HUC-12). The two hydrologic units located within the RSAs, along with their receiving waterbodies, are listed below.

> **HUC-12 180701060101**

- Dominguez Channel (above 135th Street)
- Dominguez Channel Estuary

> **HUC-12 180701060102**

- Dominguez Channel (Estuary to 135th Street)
- Dominguez Channel Estuary
- Torrance Lateral
- Dominguez Channel Estuary
- Dominguez Channel Estuary
- Los Angeles Harbor

Santa Monica Bay Watershed

The RSAs are partially located within the Santa Monica Bay Watershed, which falls within the Beach Cities EWMP mentioned previously. The predominant land uses within the Santa Monica Bay watershed are residential land uses (Beach Cities EWMP Group, 2016). Table 3.10-5 and Table 3.10-6 list beneficial uses and 303(d) impairments/TMDLs, respectively, for the waterbodies within the Santa Monica Bay Watershed as identified by the Basin Plan.

Table 3.10-5. Santa Monica Bay Watershed Beneficial Uses

Water Body	MUN	IND	NAV	REC 1	REC 2	COMM	MAR	WILD	RARE	MIGR	SPWN	SHELL
Santa Monica Bay Nearshore + Offshore		E	E	E	E	E	E	E	E	E	E	E
Hermosa Beach			E	E	E	E	E	E			E ¹	E
King Harbor		E	E	E	E	E	E	E	E			
Redondo Beach			E	E	E	E	E	E	E	E	E ¹	E
Torrance Beach			E	E	E	E	E	E		E	E ¹	E

Source: Beach Cities EWMP, 2016 (Table B-2).

E = Existing Beneficial Use Beneficial Use Code Descriptions: MUN: municipal; IND: industrial; NAV: navigation; REC-1: water contact recreation; REC-2: non-contact water recreation; COMM: commercial and sport fishing; WARM: warm freshwater habitat; MAR: marine habitat; WILD: wildlife habitat, RARE: rare, threatened, and endangered species; MIGR: migration of aquatic organisms; SPWN: spawning, reproduction, and/or early development; SHELL: shellfish harvesting

¹Most frequently used grunion spawning beaches. Other beaches may be used as well.

Table 3.10-6. Santa Monica Bay Watershed 303(d) Impairments and TMDLs

Waterbody	303(d)-Listed Pollutants ¹	TMDL? ²
Santa Monica Bay	PCBs (Polychlorinated biphenyls)	Yes
	Trash	Yes
	DDT (Dichlorodiphenyltrichloroethane)	Yes
	Mercury	No – expected in 2027
	Arsenic	No – expected in 2027

Source: SWRCB, 2022c

TMDL: Total maximum daily load

¹ Water quality impairments according to the most recent 303(d) list approved by the SWRCB in 2022 are listed here. The most up to date 303(d) list should be consulted prior to beginning project work to ensure no changes to TMDLs have occurred.

²Not all water quality impairments have been assigned a TMDL. A “yes” indicates a TMDL has been assigned to the waterbody listed for that impairment; a “no” indicates no TMDL has been assigned. If an expected completion date of a future TMDL exists, that year has been included.

Dominguez Channel Watershed

The RSAs are partially located within the Dominguez Channel watershed, which is located in both the Beach Cities EWMP Area and the Dominguez Channel WMA. The predominant land uses of the Dominguez Channel watershed are industrial, residential, and commercial uses. Storm drains from the Cities of Manhattan Beach and Redondo Beach drain through the City of Lawndale before discharging to the freshwater portion of Dominguez Channel. The City of Torrance’s MS4 discharges directly to Dominguez Channel (freshwater) and Lateral ((Beach Cities EWMP Group, 2016; Dominguez Channel WMA Group, 2015). Table 3.10-7 and Table 3.10-8 list beneficial uses and TMDLs, respectively, for waterbodies within the Dominguez Channel watershed as identified by the Basin Plan.

Table 3.10-7. Dominguez Channel Watershed Beneficial Uses^{1,2}

Water Body	MUN	REC 1	REC 2	COMM	WARM	EST	MAR	WILD	RARE	MIGR	SPWN
Dominguez Channel	p ³	P	E		P			P	E		
Torrance Lateral ⁴	p ³	P	E		P			P	E		
Dominguez Channel Estuary		E	E	E		E	E	E	E	E	E

Source: LARWQCB 2018; 2021

¹ E = Existing Beneficial Use; P = Potential Beneficial Use

² Beneficial Use Code Descriptions: MUN: municipal; REC-1: water contact recreation; REC-2: non-contact water recreation; COMM: commercial and sport fishing; WARM: warm freshwater habitat; EST: estuarine habitat; MAR: marine habitat; WILD: wildlife habitat, RARE: rare, threatened, and endangered species; MIGR: migration of aquatic organisms; SPWN: spawning, reproduction, and/or early development

³ Designated under SB 88-63 and RB 89-03. Some designations may be considered for exemption at a later date.

⁴ Listed in Basin Plan Table 1 as a “major surface water,” tributary to Dominguez Channel Estuary.

Table 3.10-8. Dominguez Channel Watershed 303(d) Impairments and TMDLs

Waterbody	303(d)-Listed Pollutants ¹	TMDL? ²
Dominguez Channel Estuary (unlined portion below Vermont Avenue)	PCBs (Polychlorinated biphenyls)	Yes
	Benzo(a)pyrene	Yes
	Pyrene	Yes
	Phenanthrene	Yes
	Chrysene (C1-C4)	Yes
	Benzo(a)anthracene	Yes
	DDT (tissue and sediment)	Yes
	Lead	Yes
	Dieldrin (tissue)	Yes
	Chlordane (tissue)	Yes
	Indicator bacteria	No – expected in 2027
	Benthic Community Effects	Yes
	Toxicity	Yes
	Copper	Yes
	Indicator bacteria	No – expected in 2027

Waterbody	303(d)-Listed Pollutants ¹	TMDL? ²
Dominguez Channel (lined portion above Vermont Ave)	Zinc	Yes
	Copper	Yes
	Lead	Yes
	Toxicity	Yes
Torrance Carson Channel (Torrance Lateral)	Lead	Yes
	Indicator bacteria	No – expected in 2027
	Copper	Yes
Los Angeles Harbor (Cabrillo Marina, Consolidated Slip, Fish Harbor, Inner Cabrillo Beach Area)	PCBs	Yes
	DDT (general, tissue, and sediment)	Yes
	Benzo(a)pyrene	Yes
	Copper (general and sediment)	Yes
	Chromium	Yes
	Toxaphene (tissue)	Yes
	Zinc (general and sediment)	Yes
	Mercury (general and sediment)	Yes
	Dieldrin	Yes
	Cadmium (sediment)	Yes
	Chlordane (tissue and sediment)	Yes
	Phenathrene	Yes
	Pyrene	Yes
	Chrysene (C1-C4)	Yes
	2-methylnaphthalene	Yes
	Benzo(a)anthracene	Yes
	Benthic community effects	Yes
	DDT (tissue and sediment)	Yes
	Lead (general and sediment)	Yes
	Toxicity	Yes
Dibenz(a,h)anthracene	Yes	
PAHs (polycyclic aromatic hydrocarbons)	Yes	
Indicator bacteria	Yes	

Source: SWRCB, 2022b

¹ Water quality impairments according to the most recent 303(d) list approved by the SWRCB in 2016 2022 are listed here. The most up to date 303(d) list should be consulted prior to beginning project work to ensure no changes to TMDLs have occurred.

²Not all water quality impairments have been assigned a TMDL. A “yes” indicates a TMDL has been assigned to the waterbody listed for that impairment; a “no” indicates no TMDL has been assigned. If an expected completion date of a future TMDL exists, that year has been included.

3.10-3.3 Surface Water Hydrology and Drainage Facilities

The RSAs are urbanized with few natural areas or natural drainage features. The RSAs consist mostly of impervious surfaces conveying runoff to storm drains. Most of the drainage networks are controlled by structural flood control measures, including storm drains, underground culverts, and open concrete

channels. Local storm drains convey stormwater southeasterly to Dominguez Channel, except for the section between the Redondo Beach TC and Hawthorne Boulevard/190th Street. Stormwater in this area is conveyed by storm drainage west towards South Santa Monica Bay. The drainage from the proposed rail alignments is conveyed by underground storm drain systems. There are several open channels within the RSAs, but no Waters of the U.S. or natural drainage features cross these proposed rail alignments.

Multiple storm drainage features are located within the RSAs. Figure 3.10-2 shows the location of current storm drains. The RSAs drain in a southeasterly direction to Dominguez Channel and west to the South Santa Monica Bay through municipal storm drains. These waters are located approximately four miles east and three miles west of the RSA, respectively. Most of the northern and southern sections of the RSAs drain to Dominguez Channel, which is shown in yellow as the Dominguez Channel and Los Angeles Harbor watershed area in Figure 3.10-2. The area from the proposed Redondo Beach TC to Hawthorne Boulevard/190th Street drains to South Santa Monica Bay, which is shown in orange as the South Santa Monica Bay watershed area in Figure 3.10-2. Although Amie Basin is within the Dominguez Channel Watershed in the figures below, during wet weather, the Amie Basin pumps to the west to the Henrietta Sump, located in the Santa Monica Bay Watershed. The Henrietta Sump is described more detail below under “City of Torrance – Sumps.”

City of Torrance - Sumps

The City of Torrance includes a series of sumps in addition to storm drain systems. According to the 2010 Torrance General Plan, “sumps” is a local term for shallow depressions that are used for flood control and retention basins. Torrance has several sumps (i.e., stormwater retention basins) and detention basins that control stormwater runoff and prevent localized ponding and flooding (City of Torrance, 2015b). Sumps hold water after a storm but have no outlet per se, though they do contribute to discharge via pumps. In addition to providing flood control, sumps provide natural treatment of water quality, improve infiltration and groundwater recharge, and provide habitat within an otherwise highly urbanized area (City of Torrance, 2022d). Sumps that are located within or downstream of the RSAs have the potential to be affected by hydrological or water quality-related changes in the RSAs. Sumps within the RSAs include the following:

- > Pioneer Avenue Basin (located on the west side of Prairie Avenue and adjacent to the western edge of the Metro ROW). This sump is located within the Dominguez Channel Watershed directly south of and adjacent to the Proposed Project footprint near its intersection with Prairie Avenue.

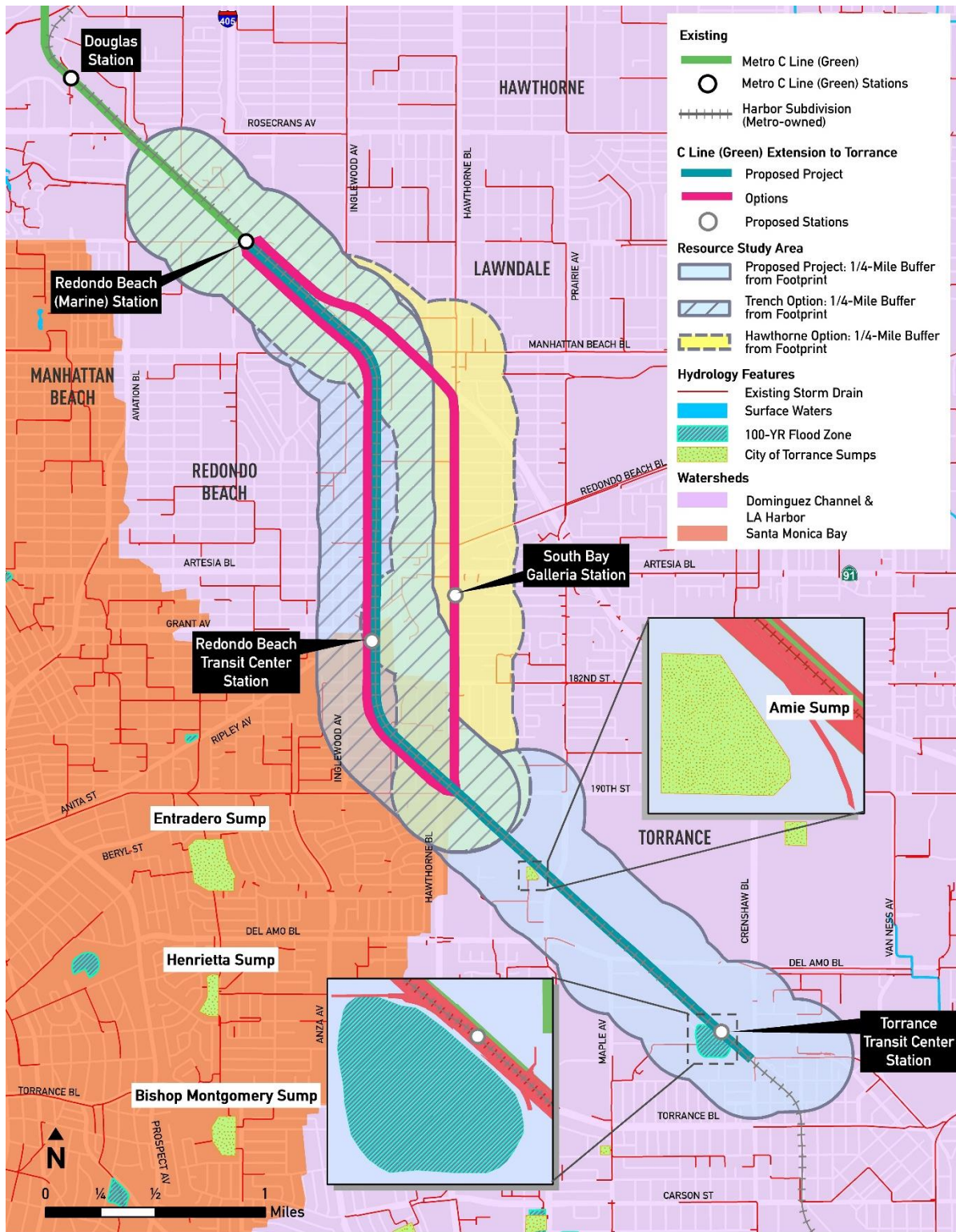
Sumps downstream of the RSAs include the following:

- > Amie Sump (located east of Hawthorne Boulevard, between Del Amo Boulevard to the north and Torrance Boulevard to the south). This feature is located approximately 0.5 miles south of the RSAs in the Dominguez Channel Watershed. During wet weather, this sump pumps to Henrietta Sump (listed above) that is located in the Santa Monica Bay Watershed.
- > Entradero Sump and Drainage Ditch (located to the west of Hawthorne Boulevard, between 190th Street to the north and Del Amo Boulevard to the south). This feature is located approximately 1 mile southwest of the RSAs within the Santa Monica Bay Watershed.
- > Henrietta Sump (located south of Del Amo Boulevard, east of Anza Avenue, and north of Torrance Boulevard). This feature is located approximately 1.3 miles southwest of the RSAs within the Santa Monica Bay Watershed.

- > Bishop Montgomery Sump (located south of Torrance Boulevard and west of Palos Verdes Boulevard. This feature is located approximately 2 miles southwest of the RSAs within the Santa Monica Bay Watershed.

The City of Torrance has plans via their Stormwater Basin Enhancement Program to improve the Entradero, Henrietta, and Amie sumps to enhance their beneficial capabilities (City of Torrance, 2022d). These sumps are shown in Figure 3.10-2.

Figure 3.10-2. Watersheds, Waters, Flood Zones, and Sumps



Sources: FEMA, 2021; LACDPW, 2022b; City of Torrance, 2022; AECOM, 2022; STV, 2022

3.10-3.4 Existing Stormwater Drainage Conditions

Proposed Project and Trench Option Footprint

Drainage patterns along the Proposed Project and Trench Option footprints were assessed in the Drainage Study/Hydraulics Report included as Appendix 3.10-A of this EIR. Drainage patterns along the Proposed Project and Trench Option footprints generally flow in either a northerly or southerly direction depending on the specific location. From the northern extent of the footprints from approximately Marine Avenue to south of Manhattan Beach Boulevard, the topography is relatively flat with an approximate maximum grade of 0.5% to the east. South of Manhattan Beach Boulevard, rainfall runoff generated along the ROW exits to street crossings or other low points along the footprints, ultimately being collected and transported by existing storm drain systems. Existing drainage facilities, which are of various sizes and cross section types, are generally located outside of the Metro ROW or cross (encroach) the ROW laterally at various locations along the footprints. Existing storm drains are shown in Figure 3.10-2.

The area within the Proposed Project permanent footprint is currently approximately 20% impervious (12.4 impervious acres of 61.3 total acres). The area within the Trench Option permanent footprint (including the area south of 190th Street) is currently approximately 19% impervious surfaces (11.6 impervious acres of 60.7 total acres). Impervious surfaces within these footprints include existing paved elevated structures, road crossings, and rail stations.

Hawthorne Option Footprint

Drainage patterns along the Hawthorne Option footprint were assessed in Appendix 3.10-A, Drainage Study/Hydraulics Report. Along the northern extent of the Hawthorne Option footprint from approximately Marine Avenue to south of Manhattan Beach Boulevard, the topography is relatively flat with an approximate maximum grade of 0.5% to the east. The drainage network along Hawthorne Boulevard and Inglewood Avenue generally flows in a northerly direction. Runoff from existing catchments along the footprint is captured mainly by catch basins to existing storm drain systems. (Catch basins help prevent debris and trash from entering the stormwater system). The main drain, into which northern and southern drains are connected to, is the Manhattan Beach Boulevard channel. This drain flows east and discharges into the Dominguez Channel. The area from Redondo Beach Transit Center to Hawthorne Boulevard/190th Street drains by way of multiple storm drains to the South Santa Monica Bay. Existing storm drains are shown in Figure 3.10-2.

Currently, impervious surfaces within the area of Hawthorne Option permanent footprint include existing paved elevated structures, road crossings, rail stations, and most of Hawthorne Boulevard (with the exception of some landscaped areas). These areas are approximately 23% impervious (17.1 impervious acres of 74.2 total acres), including the area south of 190th Street.

3.10-3.5 Groundwater

The RSAs are urbanized and consist mostly of impervious surfaces with drainage structures, allowing little percolation of surface water into groundwater basins. The RSAs are within the West Coast Subbasin of the Coastal Plain of the Los Angeles Groundwater Basin. The basin is adjudicated and is administered by the California Department of Water Resources. The beneficial uses of this subbasin include Municipal and Domestic Supply, Industrial Service Supply, and Industrial Process Supply. The average annual production of groundwater is roughly 52,000 acre-feet, which accounts for about 20% of total retail demand.

Production wells typically capture groundwater at less than 100 feet below ground surface (bgs). In 2021, groundwater depth was measured northeast of the intersection of Inglewood Avenue and Manhattan Beach Boulevard, which is within the northern end of the RSA and adjacent to the Proposed Project and Trench Option footprints. Groundwater was detected at approximately 24 feet bgs at this location (AdvancedGeo, 2021). The shallowest historical recorded groundwater levels were at a 40-foot elevation (20 feet bgs) in the RSA. Perched groundwater (i.e., groundwater trapped above impervious layers that obstruct the downward percolation), has historically been found in several areas within the RSAs, including within and near the ExxonMobil Torrance Refinery located southeast of the Proposed Project. Perched groundwater has been found at depths as shallow as 20 feet bgs on the northern segment of the RSAs (Metro, 2022a).

Two seawater barrier projects are in operation in the RSAs to keep salt water out of the groundwater basins; these are the West Coast Basin Barrier Project and the Dominguez Gap Barrier Project (WRD, 2020). Injection wells along these barriers create a groundwater ridge, which inhibits the flow of salt water into the subbasin to protect and maintain groundwater elevations. These barriers are located to the west (towards Redondo Beach) and south (towards the harbor) of the RSAs. Generally, groundwater in the basin flows from west to east because of this sea water intrusion injection barrier near the coast and a pumping depression inland (Metro, 2021b).

Groundwater quality within the West Coast Basin is considered to be of generally good quality. However, localized areas of reduced groundwater quality are present at margins where seawater intrusion occurred in the past, as well as in shallow groundwater near environmental release sites. Environmental release sites include areas where improper activities (e.g., leaking underground storage tanks [LUSTs], leaking aboveground storage tanks, leaking pipelines, spills, illegal discharges, etc.) have contaminated groundwater with localized plumes of petroleum fuels, solvents, and other constituents of concern (Todd Groundwater, 2015). There are multiple LUSTs within the RSA with an “open” status, which could indicate contaminated groundwater presence within the RSA (USEPA, 2022). Phase I Environmental Site Assessments (ESA) (see Appendix 3.9-A, Phase I ESA – ROW and Appendix 3.9-B, Phase I ESA - Hawthorne of this EIR) determined there are several locations along Proposed Project and Trench Option footprints as well as the Hawthorne Option footprint that may contain contaminated groundwater and soil. The primary potential contaminants are total petroleum hydrocarbons, volatile organic compounds, and semi-volatile organic compounds (Metro, 2021b; Metro, 2021c).

Groundwater can interact with its surrounding soil to exhibit physical characteristics that can cause a hazardous condition called liquefaction. Liquefaction describes the behavior of soils that, when loaded such as in an earthquake, suddenly suffer a transition from a solid state to a liquefied state or having the consistency of a heavy liquid. Specifically, loading is the process in which undrained loose sands tend to decrease in volume, which produces an increase in their pore water pressure. Essentially, this means that the ground can no longer support water, and this is sometimes the cause of sinking due to the dense nature of the sands. Liquefaction zones are areas that have been determined to have a potential for liquefaction conditions, based on such factors as high groundwater. As discussed in the geology and soils analysis (Section 3.8, Geology, Soils, and Paleontology of this EIR), the RSAs are not within a State-designated liquefaction zone. However, as noted in Section 3.8, seismic-induced liquefaction is possible within the RSAs due to potentially high seismic levels of shaking, the potential presence of medium dense sands, and recorded groundwater levels being within 50 feet bgs at some locations within the RSAs.

3.10-3.6 Flooding

The RSA is covered by FIRMs 06037C1760F, 06037C1770F, 06037C1780F, 06037C1790F, and 06037C1930F, dated September 26, 2008. There is one area within the RSA and a small portion of the Proposed Project footprint that has a one percent (100-year) annual chance flood. The very small area of Proposed Project temporary footprint that falls within this flood zone is for a temporary construction easement for removal of an existing spur track. The 100-year flood zone is defined as flood depths of one to three feet (usually areas of ponding) with base flood elevations determined. This flood zone is located southwest of the Proposed Project footprint near the Torrance TC at the intersection of Alaska and California Streets (see Figure 3.10-2).

3.10-3.7 Seiches, Tsunamis and Mudflows

Seiches are large waves generated in enclosed bodies of water, such as lakes, induced by ground shaking. Tsunamis are large waves generated at sea by significant disturbance of the ocean floor, causing the water column above the point of disturbance to displace rapidly. Tsunamis are predominantly caused by shallow underwater earthquakes and landslides. Mudflows result from the down-slope movement of soil and/or rock under the influence of gravity and are also often caused by earthquakes. The RSAs are outside of current seiche and tsunami potential inundation areas and is not located in an area prone to mudflows.

3.10-4 Environmental Impacts

3.10-4.1 Would the Proposed Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

3.10-4.1.1 Construction Impacts

Less than Significant. Proposed Project construction could introduce chemicals and/or hazardous substances from construction equipment into surface waters, and eventually, groundwater (following surface water infiltration into the groundwater basin). Additionally, dust and erosion resulting from soil exposure and disturbance during construction could lead to sedimentation of stormwater, which would increase turbidity and degrade existing surface water quality. Existing contaminants in newly exposed and eroded soil could also be transported in stormwater and could subsequently degrade surface water quality and groundwater quality. Introduction of these substances to receiving waters could exacerbate existing water quality impairments or introduce new water quality impairments. Metro would be required to prepare and implement a SWPPP that meets the requirements of the Construction General Permit, as described in PF-HWQ-1, SWPPP Implementation per Construction General Permit, which would include various BMPs that would reduce the potential for erosion, sedimentation, and/or introduction of pollutants into surface water or groundwater. This would protect surface water and groundwater quality and minimize the introduction or exacerbation of impairments in receiving waters.

The Proposed Project has the potential to degrade surface water quality via dewatering of groundwater. Groundwater levels within the Proposed Project RSA are anticipated to be 20 feet bgs based on historical groundwater records as described in Section 3.10-3.7. In certain locations that require deeper excavation, such installation of piles used for elevated sections, excavation activities may have the potential to encounter groundwater such that dewatering is required. Although groundwater quality is generally good within the Proposed Project RSA, the Phase I Environmental Site Assessments (see Appendix 3.9-A, Phase I ESA – ROW of this EIR) determined multiple locations within the RSA that may contain contaminated groundwater. As described in Section 3.9, Hazards and Hazardous Materials, Phase II site investigations would be conducted in the future per PF-HHM-3, Property Acquisition Phase

II site investigation. The assessments would help determine the quality of groundwater at proposed excavation locations and would help identify areas of contaminated groundwater with which may come into contact. If contaminated groundwater cannot be avoided during construction, PF-HWQ-2, Groundwater Treatment and Discharge per RWQCB Waste Discharge Requirements for Construction Dewatering, would ensure the appropriate treatment and discharge of contaminated groundwater so there would not be any degradation of surface water quality. Therefore, the Proposed Project would have a **less than significant impact** during construction related to violation of water quality standards or discharge requirements or to degradation of water quality.

TRENCH OPTION

Less than Significant. Trench Option construction would require more excavation, as well as a more prolonged period of earthwork, compared to constructing the alignment at grade as part of the Proposed Project. More excavation means construction activities would encounter groundwater more frequently, particularly in the northern portions of the RSA where groundwater is shallower, and potentially expose this groundwater to chemicals and/or hazardous substances. More excavation also has a greater potential to introduce preexisting contaminants in newly exposed and eroded soil into surface waters and groundwaters. More prolonged earthwork would create a larger chance of introducing chemicals and/or hazardous substances to surface waters, as well as causing erosion and subsequent sedimentation of surface waters. However, as described above for the Proposed Project, various BMPs would be implemented during construction per PF-HWQ-1. This would protect surface water and groundwater quality and minimize the introduction or exacerbation of impairments in receiving waters.

More excavation required under the Trench Option compared to the Proposed Project would mean construction activities would encounter more groundwater, particularly in the northern portions of the RSA, requiring more groundwater dewatering than the Proposed Project. In addition, groundwater pressures may develop during trench excavation from groundwater seeping into the soil from construction activities. Some of this groundwater has the potential to be contaminated. However, PF-HHM-3 (as described in Section 3.9, Hazards and Hazardous Materials), would help identify areas of contaminated water in planned excavation areas, and PF-HWQ-2 would prevent contaminated groundwater from being discharged in such a manner that would degrade surface water quality. Given the relatively shallow depth to groundwater in the RSA, groundwater pressure buildup could along the trench walls, causing subsequent uncontrolled release of groundwater into the trench, which could result in degradation of existing or introduction of contaminated groundwater to surface waters. Per PF-HWQ-3, Trench Construction Groundwater Pressure Control, measures would be taken to relieve any potential groundwater pressure buildup that may occur during construction.

Unlike the Proposed Project, surface runoff that flows into the trench during construction could introduce pollutants to surface waters; however, surface runoff would be collected in the trench, treated (if necessary), pumped out of the trench, and discharged to a pervious area onsite for infiltration into the soil per PF-HWQ-4, Trench Construction Runoff Collection and Treatment. In addition, runoff from the Trench Option footprint may be directed to different discharge points than existing points, which has the potential to introduce pollutants to these inflows. Per PF-HWQ-5, Temporary Storm Drain Inflow Rerouting, temporarily rerouted stormwater inflows would be captured to minimize introduction of pollutants from active construction, treated (if necessary), and rerouted around the construction site for appropriate discharge per waste discharge requirements detailed in the MS4 Permit. Therefore, the Trench Option would have a **less than significant impact** during construction related to violation of water quality standards or discharge requirements or to degradation of water quality.

HAWTHORNE OPTION

Less than Significant. The Hawthorne Option would require deeper excavation than the Proposed Project associated with columns that support the elevated alignment. Deeper excavation means a greater likelihood of coming into contact with groundwater and potentially exposing this groundwater to chemicals and/or hazardous substances. Deeper excavation also has a greater potential to introduce preexisting contaminants in newly exposed and eroded soil into surface waters and groundwaters. More prolonged earthwork would create a larger chance of introducing chemicals and/or hazardous substances to surface waters, as well as causing erosion and subsequent sedimentation of surface waters. However, as described above for the Proposed Project, various BMPs would be implemented during construction per PF-HWQ-1. This would protect surface water and groundwater quality and minimize the introduction or exacerbation of impairments in receiving waters.

Deeper excavation for structural columns required under the Hawthorne Option compared to the Proposed Project would mean a greater likelihood of requiring groundwater dewatering. PF-HHM-3 (as described in Section 3.9, Hazards and Hazardous Materials), would help identify areas of contaminated water in planned excavation areas, and PF-HWQ-2 would prevent contaminated groundwater from being discharged in such a manner that would degrade surface water quality.

Unlike the Proposed Project, Hawthorne Option construction involves the permanent rerouting of two major storm drains and one minor storm drain crossing the alignment. While new routes are constructed, temporary disruption and rerouting of inflows has the potential to introduce pollutants to these inflows. Per PF-HWQ-5 temporarily rerouted stormwater inflows would be captured to minimize introduction of pollutants from active construction, treated (if necessary), and rerouted around the construction site for appropriate discharge into the existing storm drain system per waste discharge requirements detailed in the MS4 Permit. Therefore, the Hawthorne Option would have a **less than significant impact** during construction related to violation of water quality standards or discharge requirements or to degradation of water quality.

3.10-4.1.2 Operational Impacts

Less than Significant. Operation of the Proposed Project could introduce new or exacerbate existing surface water quality impairments. Although the at-grade sections of the alignment would be comprised of typical ballast, which are pervious surfaces, the Proposed Project would still involve a net increase in impervious surfaces (as described in Section 3.10-4.6.2 below). Potential water quality impacts from Proposed Project operation include but are not limited to sedimentation caused by runoff from newly added impervious surfaces; nitrates from landscape fertilizing; and trash, debris, vehicle-sourced pollutants, and bacteria from increased human presence. However, implementation of PF-HWQ-6, LID BMPs per Regional Requirements, would prevent stormwater degraded by the Proposed Project operation from leaving the project footprint and further degrading surface water quality. Additional runoff would be collected via new or existing tie-ins to the existing stormwater drainage system. In addition, existing catch basins on adjacent storm drains would be retained during Proposed Project operation to prevent debris and trash from entering the stormwater drainage system.

Operation of the Proposed Project would not involve direct contact with groundwater. The Proposed Project would operate at or above grade. No contaminants would be stored within the Proposed Project footprint that could leak and infiltrate into groundwater. Metro vehicles running along the Proposed Project alignment would be serviced regularly to prevent potential fuel spills during operation. The Proposed Project would include a surface parking lot at the Torrance TC, which is assumed to be 91% impervious. Runoff generated within the proposed surface parking lot would be collected and treated

onsite prior to discharge into the existing municipal collection system. Treatment and runoff discharge volumes and flowrates for the parking lot will be designed to comply with state and local regulations. PF-HWQ-6 would ensure retainment of the SWQDv by LID BMPs, thereby reducing potential for degraded surface water quality to degrade groundwater quality via infiltration into the groundwater basin. Therefore, the Proposed Project would have a **less than significant impact** during operation related to violation of water quality standards or discharge requirements or to degradation of water quality.

TRENCH OPTION

Less than Significant. Operation of the Trench Option would increase impervious surfaces and human presence in the area, which could introduce new or exacerbate existing surface water quality impairments. Potential threats to water quality include but are not limited to sedimentation caused by runoff from newly added impervious surfaces; nitrates from landscape fertilizing; and trash, debris, and bacteria from human presence. PF-HWQ-6 would ensure retainment of the SWQDv and maintaining existing catch basins to prevent debris and trash from entering storm drains, thereby preventing polluted runoff from leaving the site and degrading stormwater and surface water quality.

Unlike the Proposed Project, surface waters have the potential to collect within the trench and could be exposed to water quality impacts during Trench Option operation. However, per PF-HWQ-7, Trench Operation Runoff Collection and Treatment, surface runoff would be collected within the trenches, treated (if necessary), and discharged to existing storm drains. This would ensure trench runoff does not degrade surface water or groundwater quality.

Operation of the Trench Option would not involve direct contact with groundwater. Although the trench would be located below-grade in an area anticipated to have relatively shallow groundwater, the trench would be lined with impervious retaining walls and a paved bottom that would prevent groundwater from entering the trench in substantial volumes. Any groundwater that does permeate the trench would be collected, treated per relevant requirements of the RWQCB, and pumped into the storm drain system. No contaminants would be stored within the trench that could leak and infiltrate into groundwater. Metro vehicles running within the trench would be serviced regularly to prevent potential fuel spills during operation. PF-HWQ-6 would retain most stormwater onsite, thereby preventing potentially polluted surface waters on site from degrading groundwater quality via infiltration into the groundwater basin. Therefore, the Trench Option would have a **less than significant impact** during operation related to violation of water quality standards or discharge requirements or to degradation of water quality.

HAWTHORNE OPTION

Less than Significant. Operation of the Hawthorne Option would increase impervious surfaces and human presence in the area, which could introduce new or exacerbate existing surface water quality impairments. Potential threats to water quality would be similar to the Proposed Project and would include but are not limited to sedimentation caused by runoff from newly added impervious surfaces; nitrates from landscape fertilizing; and trash, debris, and bacteria from human presence. PF-HWQ-6 ensure retainment of the SWQDv and maintaining existing catch basins to prevent debris and trash from entering storm drains, thereby preventing polluted runoff from leaving the site and degrading stormwater and surface water quality.

Operation of the Hawthorne Option would not involve direct contact with groundwater. The elevated alignment would operate above grade. No contaminants would be stored within the Hawthorne Option

footprint that could leak and infiltrate into groundwater. Metro vehicles running along the alignment would be serviced regularly to prevent potential fuel spills during operation. PF-HWQ-6 would retain most stormwater onsite, thereby preventing potentially polluted surface waters on site from degrading groundwater quality via infiltration into the groundwater basin. Therefore, the Hawthorne Option would have a **less than significant impact** during operation related to violation of water quality standards or discharge requirements or to degradation of water quality.

3.10-4.2 Would the Proposed Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

3.10-4.2.1 Construction Impacts

Less than Significant. Construction of the Proposed Project would not substantially interfere with groundwater supplies or groundwater recharge. Construction would require some water for activities like dust control and concrete mixing; this water would be sourced from local utility lines that may depend on groundwater for a portion of their water supply. However, the water needed for construction of the Proposed Project would be extremely minimal and temporary, and thus would not substantially decrease groundwater supplies.

As discussed in Section 3.10-4.1.1, Proposed Project construction may require groundwater dewatering during excavation activities primarily associated with foundations and columns for the elevated track sections. However, dewatered groundwater would be discharged in a pre-approved location per PF-HWQ-2. The amount of groundwater potentially requiring dewatering during construction would be minimal relative to the size of the West Coast subbasin, and dewatered groundwater would be discharged within or close to the RSA, thereby recharging the subbasin. Further, detention basins that would infiltrate excessive surface runoff into the soil surface are being considered for implementation on site per PF HWQ-6 thereby helping recharge groundwater supplies. Therefore, the Proposed Project would have a **less than significant impact** during construction related to a decrease in groundwater supplies or interference with groundwater recharge.

TRENCH OPTION

Less than Significant. Trench Option construction would not substantially interfere with groundwater supplies or groundwater recharge. Construction would require some water for activities like dust control and concrete mixing; this water would be sourced from local utility lines that may depend on groundwater for a portion of their water supply. Since trench excavation would involve greater and more prolonged soil exposure than constructing the alignment at grade, more water for dust control would be required under this option when compared to the Proposed Project. Trench construction would also require more water for concrete mixing than at-grade alignment construction since the trench would be lined with concrete retaining walls and paved bottoms. Despite requiring more water than the Proposed Project construction, Trench Option construction water demand would still be minimal and temporary, thus would not substantially decrease groundwater supplies if sourced directly or indirectly from groundwater.

As discussed in Section 3.10-4.1.1, trench excavation has a greater likelihood of groundwater dewatering than at-grade alignment construction. However, PF-HWQ-2 involves discharging dewatered groundwater in a pre-approved location. The amount of groundwater potentially requiring dewatering during construction would be minimal relative to the size of the West Coast subbasin, and dewatered groundwater would be discharged within or close to the RSA, thereby recharging the subbasin.

In addition, groundwater pressures may develop during trench excavation from groundwater seeping into the soil from construction activities. However, per PF-HWQ-3 measures would be taken to relieve any potential groundwater pressure buildup, thereby preventing unexpected inflow of groundwater into the trench and potentially depleting local supply. Further, PF-HWQ-4 involves the collection and discharge of surface waters that flow into the trench to a pervious area on site for infiltration into the soil, thereby recharging the groundwater basin. Therefore, the Trench Option would have a **less than significant impact** during construction related to a decrease in groundwater supplies or interference with groundwater recharge.

HAWTHORNE OPTION

Less than Significant. Hawthorne Option construction would not substantially interfere with groundwater supplies or groundwater recharge. Construction would require some water for activities like dust control and concrete mixing; this water would be sourced from local utility lines that may depend on groundwater for a portion of their water supply. Compared to the Proposed Project, Hawthorne Option construction would require more water for concrete mixing for construction of the columns. Despite requiring more water than the Proposed Project construction, Hawthorne Option construction water demand would still be minimal and temporary, and thus would not substantially decrease groundwater supplies if sourced directly or indirectly from groundwater.

As discussed in Section 3.10-4.1.1, deeper excavation for columns to construct the elevated alignment has a greater likelihood of groundwater dewatering than at-grade alignment construction. However, PF-HWQ-2 involves the discharge of dewatered groundwater at a pre-approved location. The amount of groundwater potentially requiring dewatering during construction would be minimal relative to the size of the West Coast subbasin, and dewatered groundwater would be discharged within or close to the RSA, thereby recharging the subbasin. Therefore, the Hawthorne Option would have a **less than significant impact** during construction related to a decrease in groundwater supplies or interference with groundwater recharge.

3.10-4.2.2 Operational Impacts

Less than Significant. Proposed Project operation would not substantially interfere with groundwater supplies or groundwater recharge. Operational water usage primarily involves routine cleaning of equipment within the above- or at-grade alignment and occasional power washing of the surface parking lot; this water would be sourced from local utility lines that may depend on groundwater for a portion of their water supply. The average annual production of the West Coast Subbasin is 52,000 AFY (WBMWD, 2023). Proposed water uses for construction and operation would be minimal compared to the basin's overall annual production. As mentioned in Section 3.10-1.2 above, the Coastal Plan of Los Angeles is currently ranked as "very low" priority by the State, indicating that the basin is not threatened with near-term overdraft, and the Proposed Project's minor water demand added to this basin's annual production would not result in a substantial reduction in overall groundwater supplies. Therefore, the Proposed Project's operational water demand is minimal and would not substantially decrease groundwater supplies in the West Coast Subbasin.

Once operational, the Proposed Project permanent footprint would be approximately 29% impervious (compared to its existing conditions of approximately 20% impervious). This increase in impervious surfaces would reduce the total amount of pervious areas capable of groundwater recharge. However, as described in Section 3.10-4.1.2, PF-HWQ-6, LID BMPs per Regional Requirements, involves implementation of LID BMPs designed to retain the SWQDv. Infiltration LID BMPs would enable the recharge of runoff generated onsite into the groundwater basin. Therefore, operation of the Proposed

Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge, and the impact would be **less than significant**.

TRENCH OPTION

Less than Significant. Trench Option operation would not substantially interfere with groundwater supplies or groundwater recharge. Operational water usage would primarily involve routine cleaning of the alignment; this water would be sourced from local utility lines that may depend on groundwater for a portion of their water supply. Cleaning the paved bottom and retaining walls of the trenches may require slightly more water than an at-grade alignment given the larger surface area of concrete to clean. However, the Trench Option's operational water demand would be minimal, and would not substantially decrease groundwater supplies in the West Coast Subbasin.

Once operational, the Trench Option permanent footprint, including the area south of 190th Street, would be approximately 37% impervious (compared to its existing conditions of approximately 19% impervious). Therefore, relative impervious surface increases would be greater under the Trench Option than the Proposed Project. This increase in impervious surfaces would reduce the total amount of pervious areas capable of groundwater recharge. However, as described in Section 3.10-4.1.2, PF-HWQ-6 involves implementation of LID BMPs designed to retain the SWQDv. Infiltration would enable the recharge of runoff generated onsite into the groundwater basin. PF-HWQ-7 would involve the collection, treatment (if necessary), and rerouting of excess runoff that is not retained on within the trench as part of the SWQDv to the existing storm drain system. The majority of runoff would be infiltrated onsite during project operation. Therefore, operation of the Trench Option would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge, and the impact would be **less than significant**.

HAWTHORNE OPTION

Less than Significant. Hawthorne Option operation would not substantially interfere with groundwater supplies or groundwater recharge. Operational water usage would primarily involve routine cleaning of the above- or at-grade (south of 190th Street) alignment. This water would be sourced from local utility lines that may depend on groundwater for a portion of their water supply. However, the Hawthorne Option's operational water demand is minimal and would not substantially decrease groundwater supplies in the West Coast Subbasin.

Once operational, the Hawthorne Option permanent footprint, including the area south of 190th Street, would be approximately 43% impervious (compared to its existing conditions of approximately 23% impervious). Therefore, relative impervious surface increases would be greater under the Hawthorne Option than the Proposed Project. This increase in impervious surfaces would reduce the total amount of pervious areas capable of groundwater recharge. However, as described in Section 3.10-4.1.2, LID BMPs would be included on site to retain the SWQDv per PF-HWQ-6. Infiltration would enable the recharge of runoff generated onsite into the groundwater basin. Therefore, operation of the Hawthorne Option would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge, and the impact would be **less than significant**.

3.10-4.3 Would the Proposed 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 result in substantial erosion or siltation on- or off-site?

3.10-4.3.1 Construction Impacts

Less than Significant Impact. Proposed Project construction would not result in substantial drainage pattern alteration such that erosion or siltation occurs. Construction would include excavation, equipment laydown, and other ground-disturbing activities such that the existing drainage pattern within the Proposed Project footprint would be temporarily altered. Alteration of drainage patterns could concentrate or redirect surface runoff such that erosion or siltation could occur on or off site. However, no substantial drainage alterations would occur during construction since significant existing natural and manmade drainage features within the Proposed Project's footprint, including sumps, are absent. Substantial excavation would only be required in certain parts of the Proposed Project footprint for elevated track sections to accommodate foundations and columns. However, various BMPs implemented per PF-HWQ-1 would prevent erosion and siltation (e.g., sedimentation) as well as reduce stormwater runoff velocity, thereby limiting its capacity to result in erosion and siltation on or offsite. Any drainage pattern impacts from construction would therefore be minor and temporary, minimizing the potential for erosion and sedimentation to occur on or offsite, including in sumps. Thus, the impact of construction of the Proposed Project relating to the addition of impervious surfaces in a manner which would result in substantial erosion or siltation would be **less than significant**.

TRENCH OPTION

Less than Significant Impact. Trench Option construction would not result in substantial drainage pattern alteration such that erosion or siltation occurs. Significant surface drainage features within Trench Option footprint, including sumps, are absent. Trench Option construction would require more excavation than the Proposed Project to construct trenches. Various BMPs implemented to protect water quality per PF-HWQ-1 would help directly prevent erosion and siltation (e.g., sedimentation), as well as reduce stormwater runoff velocity, thereby limiting its capacity to result in erosion and siltation on or offsite, including in sumps. Unlike the Proposed Project, surface runoff flowing into the trench could result in erosion and siltation; however, PF-HWQ-4 would implement BMPs to collect and discharge surface runoff in a manner that minimizes erosion and siltation potential on or offsite. Runoff from the Trench Option footprint may be directed to different discharge points than existing points, which could result in erosion or siltation on or offsite. However, storm drain inflow collection and rerouting would be designed to minimize erosion and siltation per PF-HWQ-5. Thus, the impact of construction of the Trench Option relating to the addition of impervious surfaces in a manner which would result in substantial erosion or siltation would be **less than significant**.

HAWTHORNE OPTION

Less than Significant Impact. Hawthorne Option construction would not result in substantial drainage pattern alteration such that erosion or siltation occurs. The Hawthorne Option would require deeper excavation than the Proposed Project since it would be entirely elevated, therefore requiring deeper excavation for column foundations. Various BMPs implemented to protect water quality per PF-HWQ-1 would help directly prevent erosion and siltation (e.g., sedimentation), as well as reduce stormwater runoff velocity, thereby limiting its capacity to result in erosion and siltation on or offsite, including in sumps. Unlike the Proposed Project, major storm drains are present within the Hawthorne Option footprint. The alignment column foundations would require two major storm drains running parallel to

the alignment and one minor storm drain crossing the alignment to be rerouted. However, storm drain inflow collection and rerouting during construction would be designed to minimize erosion and siltation per PF-HWQ-5. Thus, the impact of construction of the Hawthorne Option relating to the addition of impervious surfaces in a manner which would result in substantial erosion or siltation would be **less than significant**.

3.10-4.3.2 Operational Impacts

Less than Significant Impact. Proposed Project operation would not result in substantial drainage pattern alteration such that erosion or siltation occurs. No substantial natural or manmade drainage features are present within the existing roadway and railroad rights-of-way. As described in Section 3.10-4.2.2, the Proposed Project permanent footprint would be approximately 29% impervious (compared to its existing conditions of approximately 20% impervious). This increase in impervious surfaces would initially generate more stormwater runoff compared to existing conditions; an increase in runoff has the potential to result in erosion of soils and sedimentation of surface waters. However, the SWQDv would be retained on site per PF-HWQ-6. Additional runoff from the Proposed Project footprint would continue to be collected by storm drain facilities. Elevated portions of the Proposed Project alignment would include down drains. Discharge locations of underdrains installed along the Proposed Project alignment would be the same as existing discharge locations. The retainment of the majority of stormwater runoff within the Proposed Project footprint and preservation of existing discharge locations reduces the potential for erosion and sedimentation to occur on or off site. Thus, the impact of operation of the Proposed Project relating to the addition of impervious surfaces in a manner which would result in substantial erosion or siltation would be **less than significant**.

TRENCH OPTION

Less than Significant Impact. Trench Option operation would not result in substantial drainage pattern alteration such that erosion or siltation occurs. As described in Section 3.10-4.2.2, the Trench Option permanent footprint, including the area south of 190th Street, would be approximately 37% impervious (compared to its existing conditions of approximately 19% impervious). This represents a greater increase in impervious surfaces compared to the Proposed Project; therefore, the Trench Option may have a greater potential to generate additional runoff that leads to erosion of soils and sedimentation of surface waters. However, the SWQDv would be retained on site per PF-HWQ-6. Additional runoff in the trenches would be collected, treated (if necessary), and transferred to existing nearby storm drains per PF-HWQ-7. Although no existing storm drain rerouting is proposed under the Trench Option, runoff from the Trench Option footprint may be directed to different discharge points than existing during its operation to avoid substantial erosion or siltation. The retainment of the majority of stormwater runoff within the Trench Option footprint and eventual discharge of runoff to existing storm drains reduces the potential for erosion and sedimentation to occur on or off site. Thus, the impact of operation of the Trench Option relating to the addition of impervious surfaces in a manner which would result in substantial erosion or siltation would be **less than significant**.

HAWTHORNE OPTION

Less than Significant Impact. Hawthorne Option operation would not result in substantial drainage pattern alteration such that erosion or siltation occurs. As described in Section 3.10-4.2.2, the Hawthorne Option permanent footprint, including the area south of 190th Street, would be approximately 43% impervious (compared to its existing conditions of approximately 23% impervious). This represents a greater increase in impervious surfaces compared to the Proposed Project; therefore, the Hawthorne Option may have a greater potential to generate additional runoff that leads to erosion

of soils and sedimentation of surface waters. However, the SWQDv would be retained on site per PF-HWQ-6. Additional runoff from the Hawthorne Option permanent footprint would continue to be collected by storm drain facilities. Although storm drains would be permanently rerouted under Hawthorne Option, discharge locations of rerouted storm drains would be the same or similar to existing discharge locations per PF-HWQ-6. Retaining most stormwater runoff within the Hawthorne Option footprint and maintaining overall storm drain discharge connections reduces the potential for erosion and sedimentation to occur on or off site, including in downstream sumps. Thus, the impact of operation of the Hawthorne Option relating to the addition of impervious surfaces in a manner which would result in substantial erosion or siltation would be **less than significant**.

3.10-4.4 *Would the Proposed 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 substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*

3.10-4.4.1 Construction Impacts

Less than Significant Impact. Proposed Project construction would not result in substantial drainage pattern alteration such that flooding occurs. Proposed Project excavation, equipment laydown, and other ground-disturbing activities could alter the existing drainage pattern within the Proposed Project footprint and concentrate or redirect surface runoff such that flooding occurs on or off site. However, no substantial drainage alterations would occur during construction since significant existing natural and manmade drainage features are absent. Substantial excavation would only be required in certain parts of the Proposed Project footprint for elevated track sections. However, various BMPs implemented to protect water quality and manage stormwater per PF-HWQ-1 would reduce stormwater runoff velocity, thereby limiting its capacity to result in flooding on or offsite. Any drainage pattern impacts from construction would therefore be minor and temporary, minimizing the potential for flooding to occur on or offsite, including in sumps. Thus, the impact of construction of the Proposed Project relating to the addition of impervious surfaces in a manner which would result in flooding would be **less than significant**.

TRENCH OPTION

Less than Significant Impact. Trench Option construction would not result in substantial drainage pattern alteration such that flooding occurs. Various BMPs implemented to protect water quality per PF-HWQ-1 would help reduce stormwater runoff velocity, thereby limiting its capacity to result in flooding on or offsite, including in sumps. Surface runoff flowing into the trench could result in flooding; however, PF-HWQ-4 would involve the collection and discharge of surface runoff that minimizes flooding potential on or offsite. Runoff from the Trench Option footprint may be directed to different discharge points than existing points, which could result in flooding on or offsite. However, storm drain inflow collection and rerouting would be designed to minimize flooding per PF-HWQ-5. Thus, the impact of construction of the Trench Option relating to the addition of impervious surfaces in a manner which would result in flooding would be **less than significant**.

HAWTHORNE OPTION

Less than Significant Impact. Hawthorne Option construction would not result in substantial drainage pattern alteration such that flooding occurs. Various BMPs implemented to protect water quality per PF-HWQ-1 would also help reduce stormwater runoff velocity, thereby limiting its capacity to result in flooding on or offsite, including in sumps. In addition, construction would involve temporary disruption

and rerouting of drainage collected by three existing storm drains, which could result in flooding on or offsite. However, storm drain inflow collection and rerouting would be designed to minimize flooding per PF-HWQ-5. Thus, the impact of construction of the Hawthorne Option relating to the addition of impervious surfaces in a manner which would result in flooding would be **less than significant**.

3.10-4.4.2 Operational Impacts

Less than Significant Impact. Proposed Project operation would not result in substantial drainage pattern alteration such that flooding occurs. As described above, the Proposed Project would have more impervious surfaces compared to existing conditions that could result in flooding. However, stormwater runoff would be retained on site per PF-HWQ-6. Additional runoff from the Proposed Project footprint would continue to be collected by new and existing storm drain facilities.

Stormwater runoff discharge locations along the Proposed Project alignment would be the same as existing discharge locations. Retainment of most stormwater runoff within the Proposed Project footprint and preservation of existing discharge locations reduces the potential for flooding to occur on or off site. Thus, the impact of operation of the Proposed Project relating to the addition of impervious surfaces in a manner which would result in flooding would be **less than significant**.

TRENCH OPTION

Less than Significant Impact. Trench Option operation would not result in substantial drainage pattern alteration such that flooding occurs. Although the Trench Option would have more impervious surfaces compared to existing conditions and could result in flooding, most stormwater runoff would be retained on site per PF-HWQ-6. Additional runoff in the trenches would be collected, treated (if necessary), and discharged to existing nearby storm drains per PF-HWQ-7. Although no existing storm drain rerouting is proposed under the Trench Option, runoff from the Trench Option footprint may be directed to different discharge points than existing points to avoid flooding. Retainment of most stormwater runoff within the Trench Option footprint and eventual discharge of runoff to existing storm drain facilities reduces the potential for flooding to occur on or off site. Thus, the impact of operation of the Trench Option relating to the addition of impervious surfaces in a manner which would result in flooding would be **less than significant**.

HAWTHORNE OPTION

Less than Significant. Hawthorne Option operation would not result in substantial drainage pattern alteration such that flooding occurs. Although the Hawthorne Option would have more impervious surfaces compared to existing conditions and could result in flooding, the SWQDv would be retained on site per PF-HWQ-6. Additional runoff from the Hawthorne Option footprint would continue to be collected by storm drain facilities. Although storm drains would be permanently rerouted under the Hawthorne Option, discharge locations of rerouted storm drains would be the same or similar to existing discharge locations per PF-HWQ-6. Retainment of most stormwater runoff within the Hawthorne Option footprint and maintaining existing storm drain discharge locations reduces the potential for flooding to occur on or off site. Thus, the impact of operation of the Hawthorne Option relating to the addition of impervious surfaces in a manner which would result in flooding would be **less than significant**.

3.10-4.5 *Would the Proposed 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 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?*

3.10-4.5.1 Construction Impacts

Less than Significant Impact. Proposed Project construction would not result in substantial drainage pattern alteration such that runoff exceeds stormwater drainage systems or additional sources of polluted runoff are generated. Proposed Project excavation, equipment laydown, and other ground-disturbing activities could alter the existing drainage pattern within the Proposed Project footprint and concentrate or redirect surface runoff such that stormwater drainage exceedance or additional polluted runoff generation occurs on or off site. However, no substantial drainage alterations would occur during construction since significant existing natural and manmade drainage features are absent. Substantial excavation would only be required in certain parts of the Proposed Project footprint for elevated track sections. Various BMPs implemented to protect water quality and manage stormwater per PF-HWQ-1 would reduce stormwater runoff velocity, thereby limiting its capacity to result in flooding on or offsite. Any drainage pattern impacts from construction would therefore be minor and temporary, minimizing the potential for exceeding stormwater drainage systems and generating additional sources of polluted runoff, including in sumps. Thus, the impact of construction of the Proposed Project relating to the addition of impervious surfaces in a manner which would exceed stormwater drainage system capacity or substantially add sources of polluted runoff would be **less than significant**.

TRENCH OPTION

Less than Significant Impact. Trench Option construction would not result in substantial drainage pattern alteration such that runoff exceeds stormwater drainage systems or additional sources of polluted runoff are generated. Various BMPs implemented per PF-HWQ-1 would help reduce stormwater runoff velocity, thereby limiting its capacity to cause stormwater drainage systems exceedance or additional sources of polluted runoff generation. Per PF-HWQ-4 surface runoff that flows into the trench would be collected, treated, and infiltrated onsite, thereby avoiding exceedance of existing storm drain capacity and additional polluted runoff sources. Per PF-HWQ-5 temporary rerouting of inflows from an existing storm drain around the construction site would be done in a manner that avoids exceeding existing stormwater drainage systems. Thus, the impact of construction of the Trench Option relating to the addition of impervious surfaces in a manner which would exceed stormwater drainage system capacity or substantially add sources of polluted runoff would be **less than significant**.

HAWTHORNE OPTION

Less than Significant Impact. Hawthorne Option construction would not result in substantial drainage pattern alteration such that runoff exceeds stormwater drainage systems or additional sources of polluted runoff are generated. Various BMPs implemented per PF-HWQ-1 would help reduce stormwater runoff velocity, thereby limiting its capacity to cause stormwater drainage systems exceedance or additional sources of polluted runoff generation. Per PF-HWQ-5 temporary rerouting of inflows from an existing storm drain around the construction site would be done in a manner that avoids exceeding existing stormwater drainage systems. Thus, the impact of construction of the Hawthorne Option relating to the addition of impervious surfaces in a manner which would exceed stormwater drainage system capacity or substantially add sources of polluted runoff would be **less than significant**.

3.10-4.5.2 Operational Impacts

Less than Significant Impact. Proposed Project operation would not result in substantial drainage pattern alteration such that runoff exceeds stormwater drainage systems or additional sources of polluted runoff are generated. The initial increase in runoff generated by the increased impervious surfaces within the Proposed Project permanent footprint would be mostly contained on site as part of the SWQDv per PF-HWQ-6. Retainment of most stormwater runoff within the Proposed Project footprint and preservation of existing discharge locations reduces the potential for exceeding stormwater drainage systems or generating sources of additional polluted runoff. Thus, the impact of operation of the Proposed Project relating to the addition of impervious surfaces in a manner which would exceed stormwater drainage system capacity or substantially add sources of polluted runoff would be **less than significant**.

TRENCH OPTION

Less than Significant Impact. Trench Option operation would not result in substantial drainage pattern alteration such that runoff exceeds stormwater drainage systems or additional sources of polluted runoff are generated. Although the Trench Option would have a greater amount of impervious surfaces compared to existing conditions and could result in stormwater drainage system exceedance or additional polluted runoff generation, per PF-HWQ-6 the SWQDv would be retained on site, thereby minimizing the potential for excessive and/or polluted runoff entering storm drains. Per PF-HWQ-7 additional runoff in the trenches would be collected, treated (if necessary), and transferred existing nearby storm drains. Although no existing storm drain rerouting is proposed under the Trench Option, runoff from the Trench Option footprint may be directed to different discharge points than existing points to reduce stormwater drainage exceedance. Retainment of most stormwater runoff within the Trench Option footprint and eventual discharge of runoff to existing storm drain facilities reduces the potential for exceeding stormwater drainage systems or generating sources of additional polluted runoff. Thus, the impact of operation of the Trench Option relating to the addition of impervious surfaces in a manner which would exceed stormwater drainage system capacity or substantially add sources of polluted runoff would be **less than significant**.

HAWTHORNE OPTION

Less than Significant Impact. Hawthorne Option operation would not result in substantial drainage pattern alteration such that runoff exceeds stormwater drainage systems or additional sources of polluted runoff are generated. Although the Hawthorne Option would have more impervious surfaces compared to existing conditions and could result in stormwater drainage system exceedance or additional polluted runoff generation, per PF-HWQ-6 the SWQDv would be retained on site, thereby minimizing the potential for excessive and/or polluted runoff entering storm drains. Additional runoff from the Hawthorne Option permanent footprint would continue to be collected by storm drain facilities. Although storm drains would be permanently rerouted under Hawthorne Option, discharge locations of rerouted storm drains would be the same or similar to existing discharge locations per PF-HWQ-6. Retainment of most stormwater runoff within the Hawthorne Option footprint via LID BMPs, as well as maintaining the same or similar existing storm drain discharge locations, reduces the potential for exceeding stormwater drainage systems or generating sources of additional polluted runoff. Thus, the impact of operation of the Hawthorne Option relating to the addition of impervious surfaces in a manner which would exceed stormwater drainage system capacity or substantially add sources of polluted runoff would be **less than significant**.

3.10-4.6 Would the Proposed 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 impede or redirect flood flows?

3.10-4.6.1 Construction Impacts

Less than Significant Impact. Proposed Project construction would not result in substantial drainage pattern alteration such that flood flows are impeded or redirected. As described in Section 3.10-3.6, a very small portion of the Proposed Project temporary footprint near the Torrance TC is located within a 100-year flood zone, which would be for a temporary construction easement. Per PF-HWQ-8, City of Torrance Flood Zone Requirements, construction would comply with the City of Torrance's requirements for construction within flood hazard areas, which are designed to reduce potential run-ins with flood waters. Therefore, construction would not impede or redirect flood flows. Thus, construction of the Proposed Project would not result in substantial drainage pattern alteration which would impede or redirect flood flows. Therefore, the impact would be **less than significant**.

TRENCH OPTION

Less than Significant Impact. Trench Option construction would not result in substantial drainage pattern alteration such that flood flows are impeded or redirected. No portion of the Trench Option footprint (north of 190th Street) is located within an existing 100-year flood zone. Although trenches would run below grade, this lowered elevation in the Trench Option footprint would not create a new flood zone area since the footprint is not located near any existing flood zones or large drainage features. Therefore, impeding or redirecting flood flows is not anticipated to occur. Thus, construction of the Trench Option would not result in substantial drainage pattern alteration which would impede or redirect flood flows. Therefore, the impact would be **less than significant**.

HAWTHORNE OPTION

Less than Significant Impact. Hawthorne Option construction would not result in substantial drainage pattern alteration of flood flows are impeded or redirected. No portion of the Hawthorne Option footprint (north of 190th Street) is located within an existing 100-year flood zone. Further, major excavation for piles and foundations associated with the elevated segment of the alignment would not introduce new flood risk given the distance from existing flood zones and from large drainage features. Therefore, construction would not impede or redirect flood flows. Thus, construction of the Hawthorne Option would not result in substantial drainage pattern alteration which would impede or redirect flood flows. Therefore, the impact would be **less than significant**.

3.10-4.6.2 Operational Impacts

Less than Significant Impact. The Proposed Project would operate at approximately the same elevation or in certain locations elevated above the existing railroad and freight rights-of-way and would not exacerbate the existing flood risk or impede or redirect flood flows. Thus, operation of the Proposed Project would not result in substantial drainage pattern alteration which would impede or redirect flood flows. Therefore, the impact would be **less than significant**.

TRENCH OPTION

Less than Significant Impact. Trench Option operation would not result in substantial drainage pattern alteration of flood flows are impeded or redirected. No portion of the Trench Option north of 190th Street would be located within an existing 100-year flood zone. Although the trenched alignment would run below grade, the trench would not create a new flood zone given its distance from existing flood

zones and from large drainage features. Although runoff from the Trench Option footprint may be directed to different discharge points than existing points, runoff would not be directed into an existing flood zone. Thus, operation of the Trench Option would not result in substantial drainage pattern alteration which would impede or redirect flood flows. Therefore, the impact would be **less than significant**.

HAWTHORNE OPTION

Less than Significant Impact. Hawthorne Option operation would not result in substantial drainage pattern alteration of flood flows are impeded or redirected. As shown in Figure 3.10-2, no portion of the Hawthorne Option footprint falls within an existing 100-year flood zone. The new alignment would operate elevated above the existing roadway rights-of-way, and it would therefore not introduce a new flood risk. Thus, operation of the Hawthorne Option would not result in substantial drainage pattern alteration which would impede or redirect flood flows. Therefore, the impact would be **less than significant**.

3.10-4.7 Would the Project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

3.10-4.7.1 Construction Impacts

Less than Significant. Proposed Project construction would not risk release of pollutants due to project inundation in a flood hazard, tsunami, or seiche zone. As stated in Section 3.10-3.7, the RSA is outside of current seiche and tsunami potential inundation areas. As stated in Section 3.10-3.6 and Section 3.10-4.4.1, a very small portion of the Proposed Project temporary footprint is located within a 100-year flood zone, which would be for a temporary construction easement for the removal of an existing spur track. PF-HWQ-1 would ensure BMPs are in place to prevent the release of pollutants into surface waters during construction, including during a rare flooding event. Further, per PF-HWQ-8 construction would comply with the City of Torrance's requirements for construction within flood hazard areas, which are designed to reduce potential run-ins with flood waters. Therefore, Proposed Project construction would not risk the release of pollutants in flood hazard, tsunami, or seiche zones, and the impact would be **less than significant**.

TRENCH OPTION

Less than Significant. Trench Option construction would not risk release of pollutants due to project inundation in a flood hazard, tsunami, or seiche zone. No portions of the Trench Option footprint (north of 190th Street) are within a 100-year flood zone, or current seiche and tsunami potential inundation areas. Therefore, Trench Option construction would not risk the release of pollutants in flood hazard, tsunami, or seiche zones, and the impact would be **less than significant**.

HAWTHORNE OPTION

Less than Significant. Hawthorne Option construction would not risk release of pollutants due to project inundation in a flood hazard, tsunami, or seiche zone. No portions of the Hawthorne Option footprint (north of 190th Street) are within the 100-year flood zone or current seiche and tsunami potential inundation areas. Therefore, Hawthorne Option construction would not risk the release of pollutants in flood hazard, tsunami, or seiche zones, and the impact would be **less than significant**.

3.10-4.7.2 Operational Impacts

Less than Significant. Proposed Project operation would not risk release of pollutants due to project inundation in a flood hazard, tsunami, or seiche zone. No portions of the permanent footprint would be located within the 100-year flood zone. The new alignment would operate at approximately the same elevation or in certain locations elevated above the existing railroad and freight rights-of-way. Implementation of PF-HWQ-6 would retain the SWQDv via LID BMPs, thereby preventing the majority of any potentially polluted floodwaters from leaving the site. As stated in Section 3.10-3.7, the RSA is outside of current seiche and tsunami potential inundation areas. Therefore, operation of the Proposed Project would not risk the release of pollutants due to flood hazard, tsunami, or seiche zones, and the impact would be **less than significant**.

TRENCH OPTION

Less than Significant. Trench Option operation would not risk release of pollutants due to project inundation in a flood hazard, tsunami, or seiche zone. No portions of the Trench Option permanent footprint are within the 100-year flood zone or current seiche and tsunami potential inundation areas. Therefore, operation of the Trench Option would not risk the release of pollutants due to flood hazard, tsunami, or seiche zones, and the impact would be **less than significant**.

HAWTHORNE OPTION

Less than Significant. Hawthorne Option operation would not risk release of pollutants due to project inundation in a flood hazard, tsunami, or seiche zone. No portions of the Hawthorne Option permanent footprint are within the 100-year flood zone or current seiche and tsunami potential inundation areas. Therefore, operation of the Hawthorne Option would not risk the release of pollutants due to flood hazard, tsunami, or seiche zones, and the impact would be **less than significant**.

3.10-4.8 Would the Proposed Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

3.10-4.8.1 Construction Impacts

Less than Significant. Proposed Project construction would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. As stated in Section 3.10-1.2, a groundwater sustainability plan has not been developed for the West Coast Subbasin of the Coastal Plain of the Los Angeles Groundwater Basin, as it is considered a “very low priority” by the State. Therefore, Proposed Project construction would not conflict with a sustainable groundwater management plan. As stated in Section 3.10-1.3, the RWQCB Basin Plan (e.g., water quality control plan) pertinent to the RSA includes beneficial uses, water quality objectives, and waste discharge requirements designed to protect surface water and groundwater quality within the region. Measures would be taken during construction to reduce impacts to surface water and groundwater quality as described in Section 3.10-4.1.1, including PF-HWQ-1, as well as PF-HWQ-2. Therefore, construction of the Proposed Project would not conflict with implementation of the Basin Plan, and the impact would be **less than significant**.

TRENCH OPTION

Less than Significant. Trench Option construction would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. A groundwater sustainability plan has not been developed for the groundwater basin. Implementation of PF-HWQ-1, as well as PF-HWQ-2, would reduce impacts to surface water and groundwater quality and help ensure compliance

with beneficial uses and water quality objectives for surface water and groundwater within the region. Therefore, construction of the Trench Option would not conflict with implementation of the Basin Plan, and the impact would be **less than significant**.

HAWTHORNE OPTION

Less than Significant. Hawthorne Option construction would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. A groundwater sustainability plan has not been developed for the groundwater basin. Implementation of PF-HWQ-1, as well as PF-HWQ-2, would reduce impacts to surface water and groundwater quality and help ensure compliance with beneficial uses and water quality objectives for surface water and groundwater within the region. Therefore, construction of the Hawthorne Option would not conflict with implementation of the Basin Plan, and the impact would be **less than significant**.

3.10-4.8.2 Operational Impacts

Less than Significant. As stated in Section 3.10-4.8.1, a groundwater sustainability plan has not been developed for the West Coast Subbasin of the Coastal Plain of the Los Angeles Groundwater Basin; therefore, Proposed Project operation would not conflict with a sustainable groundwater management plan. Measures would be taken during operation to reduce impacts to surface water and groundwater quality, including retaining potentially polluted runoff included in the SWQDv on site as described in PF-HWQ-6. This would reduce impacts to surface water and groundwater quality and help ensure compliance with beneficial uses and water quality objectives for surface water and groundwater within the region. Therefore, operation of the Proposed Project would not conflict with implementation of the Basin Plan, and the impact would be **less than significant**.

TRENCH OPTION

Less than Significant. A groundwater sustainability plan has not been developed for the groundwater basin. Implementation of PF-HWQ-6 would include retaining potentially polluted runoff included in the SWQDv on site. This would reduce impacts to surface water and groundwater quality and help ensure compliance with beneficial uses and water quality objectives for surface water and groundwater within the region. Therefore, operation of the Trench Option would not conflict with implementation of the Basin Plan, and the impact would be **less than significant**.

HAWTHORNE OPTION

Less than Significant. A groundwater sustainability plan has not been developed for the groundwater basin. Implementation of PF-HWQ-6 would include retaining potentially polluted runoff included in the SWQDv on site. This would reduce impacts to surface water and groundwater quality and help ensure compliance with beneficial uses and water quality objectives for surface water and groundwater within the region. Therefore, operation of the Hawthorne Option would not conflict with implementation of the Basin Plan, and the impact would be **less than significant**.

3.10-5 Mitigation Measures

No mitigation measures are required, as there are no significant impacts on hydrology and water quality.

3.10-6 Project Impacts Remaining After Mitigation

As stated in Section 3.10-5, no mitigation measures are required to reduce construction and operation impacts to a level below significance.

3.10-7 Cumulative Impacts

The methodology for cumulative analysis and a description of the relevant projects and projections are included in Section 3.0, Introduction. The geographic scope for the hydrology and water quality cumulative impact analysis is the Los Angeles County storm drainage system serving the RSAs, as well as the Santa Monica Bay and Dominguez Channel watersheds. All probable future projects described in the project list in Section 3.0, Introduction fall within the scope of the cumulative analysis.

3.10-7.1 Proposed Project

Water Quality

The Proposed Project is located in the Santa Monica Bay and Dominguez Channel watersheds, which currently are both impaired from development in the region. Additionally, development has resulted in limited availability of water resources, due to the use of groundwater for municipal water supplies and existing pollutant loads of surface water sources. The Proposed Project, as well as past, present, and probable future projects, could contribute to this existing cumulative impact.

Proposed Project construction has the potential to further introduce chemicals and/or hazardous substances as well as sediment into surface waters and groundwaters. There is also the potential to degrade surface water quality via dewatering of groundwater. However, multiple project features would be implemented as a part of the Proposed Project that would protect water quality and ensure appropriate treatment and discharge of contaminated water. The Proposed Project would have a less than significant impact to water quality during construction. Construction of probable future projects would also be required to comply with the same regulations and permits as the Proposed Project. Therefore, the Proposed Project's incremental contribution to cumulatively significant impacts during construction would not be cumulatively considerable.

Proposed Project operation could impact water quality via sedimentation caused by runoff from newly added impervious surfaces; nitrates from landscape fertilizing; and trash, debris, and bacteria from human presence. BMPs would be implemented, which would reduce the potential for degraded surface water quality to degrade groundwater quality. The Proposed Project would have a less than significant impact to water quality during operation. Probable future projects would also be required to comply with the same regulations and permits and local ordinances to protect water quality. Therefore, the Proposed Project's incremental contribution to cumulatively significant impacts during operation would not be cumulatively considerable.

Groundwater Recharge and Groundwater Supplies

Development in the region has resulted in limited availability of water resources, due to the use of groundwater for municipal water supplies and existing pollutant loads of surface water sources. The Proposed Project, as well as past, present, and probable future projects could contribute to the existing cumulative impact.

Construction of the Proposed Project would require water for activities like dust control and concrete mixing, which would be sourced from local utility lines that may depend on groundwater for a portion of their water supply. However, the water needed for construction would be minimal, and would not substantially decrease groundwater supplies. All dewatered groundwater would be discharged in a pre-approved location specified by the RWQCB Waste Discharge Requirements for Construction Dewatering. Dewatered groundwater would likely be discharged within or close to the RSA, thereby recharging the subbasin. The Proposed Project would have a less than significant impact to groundwater during construction. Water for construction of probable future projects would likely be sourced from the same

local utility lines, but the demand would also be minimal. Therefore, the Proposed Project's incremental contribution to cumulatively significant impacts during construction would not be cumulatively considerable.

Proposed Project operation would involve minimal water usage for activities like routine cleaning, which would not substantially decrease groundwater supplies. PF-HWQ-6 would also be implemented, which would ensure retention of the SWQDv, and there would be a less than significant impact to groundwater during operation. Probable future roadway improvement projects within the RSA would also have minimal water demand during operations. Future development projects could increase impervious surfaces in the area such that pervious capable of groundwater recharge would be reduced. However, the project area is already highly developed, and increases to existing impervious surfaces would be minimal. Further, all projects would be subject to the same regional LID requirements. Therefore, the Proposed Project's incremental contribution to cumulatively significant impacts during operation would not be cumulatively considerable.

Alteration of Drainage Patterns

Proposed Project construction would not result in substantial drainage pattern alteration such that erosion or siltation, flooding, stormwater drainage system exceedance, additional polluted runoff, or impediment of flood flows would occur. Various BMPs would be implemented per PF-HWQ-1, in compliance with the Construction General Permit requirements, which would help directly prevent erosion and siltation (e.g., sedimentation), as well as reduce stormwater runoff velocity, thereby limiting potential for erosion, siltation, flooding, stormwater drainage capacity exceedance, or additional polluted runoff generation on or offsite. The probable future projects described in Section 3.0, Introduction would also be required to comply with the same regulations and local ordinances, at a minimum. Since related projects primarily involve improvements to existing roadways, construction drainage pattern impacts would also likely be minor. Future development projects would occur in areas that are already developed, and there would be no major increases in impervious surfaces or major waterway alterations. None of the related projects (listed in Section 3.0, Introduction) are located within or adjacent to an existing flood zone. Therefore, the Proposed Project, in combination with past, present and probable future projects would not result in a significant cumulative impact related to substantial drainage pattern alterations during construction.

Proposed Project operation would not result in substantial drainage pattern alteration such that erosion or siltation, flooding, stormwater drainage system exceedance, or additional polluted runoff occurs. There would be an increase in impervious surfaces, which has the potential to result in erosion of soils and sedimentation of surface waters, but the SWQDv would be retained on site per PF-HWQ-6. Most of the related projects involve improvements to existing developed roadways and probable future development projects would also be subject to regional LID requirements, so permanent significant drainage pattern alteration is not likely. Therefore, the Proposed Project, in combination with past, present and probable future projects would not result in a significant cumulative impact related to substantial drainage pattern alterations during operation.

Release of Pollutants in Flood Zones, Tsunami Zones, or Seiche Zones

Proposed Project construction would not risk release of pollutants due to project inundation in a flood hazard, tsunami, or seiche zone. The Proposed Project RSA is outside of current seiche and tsunami potential inundation areas. A very small portion of the Proposed Project temporary footprint overlaps with the 100-year flood zone, which is an area that would be used during construction to remove a spur track. However, per PF-HWQ-8, construction would comply with the City of Torrance's requirements for

construction within flood hazard areas, which are designed to reduce potential run-ins with flood waters. PF-HWQ-1 would ensure BMPs are in place to prevent the release of pollutants into surface waters during construction, including during a rare flooding event. None of the projects considered in the cumulative analysis (listed in Section 3.0, Introduction) are located within or adjacent to an existing flood zone or current seiche or tsunami area. Therefore, the Proposed Project, in combination with past, present and probable future projects, would not result in a significant cumulative impact related to flooding during construction or operation.

Conflicts with a Water Quality Plan

Proposed Project construction would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. A groundwater sustainability plan has not been developed for the groundwater basin. Construction of the Proposed Project would be required to comply with beneficial uses, water quality objectives, and waste discharge requirements detailed in the RWQCB Basin Plan. Compliance would be achieved via implementation of PF-HWQ-1 and PF-HWQ-2., and there would be a less than significant impact. The projects identified in Section 3.0, Introduction would be required to comply with the same regulations and local ordinances, at a minimum. Therefore, the Proposed Project, in combination with past, present and probable future projects, would not result in a significant cumulative impact related to conflicts with a water quality plan during construction or operation.

3.10-7.2 Trench Option

During construction, the Trench Option would require more excavation and ground dewatering, as well as a slightly higher water demand, compared to the Proposed Project. During operation, the Trench Option may have a greater potential to degrade water quality than the Proposed Project as a result of collecting runoff within the trench. It would have a greater permanent increase in impervious surfaces than the Proposed Project, and a greater potential to reduce groundwater recharge and supplies. Therefore, the Trench Option would have a higher potential to contribute to cumulative impacts related to water quality and groundwater during construction and operation. However, multiple project features would be implemented as a part of the Trench Option, such as implementation of a SWPPP and BMPs, which would reduce surface water and groundwater quality impacts. Trench Option construction water demand would be minimal and temporary. Therefore, the Trench Option's incremental contribution to cumulatively significant impacts related to water quality and groundwater would not be cumulatively considerable.

The Trench Option would have a slightly higher potential for impacts to drainage patterns, compared to the Proposed Project. Construction would require more excavation, and the Trench Option would have a greater permanent increase in impervious areas. However, multiple project features would be implemented, which would reduce impacts to drainage patterns, and the impact would be less than significant. The Trench Option would have similar potential for impacts as the Proposed Project related to floods, tsunamis, and seiches, and conflicts with a water quality plan. Therefore, the Trench Option, in combination with past, present and probable future projects, would not result in a significant cumulative impact related to alterations of drainage patterns, floods, or conflicts with a water quality plan.

3.10-7.3 Hawthorne Option

During construction, the Hawthorne Option would require deeper excavation and potential ground dewatering, as well as a slightly higher water demand, compared to the Proposed Project. It would have

a greater permanent increase in impervious surfaces than the Proposed Project, and a greater potential to reduce groundwater recharge and supplies. Therefore, the Hawthorne Option would have a higher potential for cumulative impacts related to water quality and groundwater during construction and operation. However, multiple project features would be implemented as a part of the Hawthorne Option, such as implementation of a SWPPP and BMPs, which would reduce surface water and groundwater quality impacts. Hawthorne Option construction water demand would be minimal and temporary. Therefore, the Hawthorne Option's incremental contribution to cumulatively significant impacts related to water quality and groundwater would not be cumulatively considerable.

The Hawthorne Option would have a slightly higher potential for impacts to drainage patterns, compared to the Proposed Project. Construction would require deeper excavation, and the Hawthorne Option would have a greater permanent increase in impervious areas. However, multiple project features would be implemented, which would reduce impacts to drainage patterns, and the impact would be less than significant. The Hawthorne Option would have similar potential for impacts as the Proposed Project related to floods, tsunamis, and seiches, and conflicts with a water quality plan. Therefore, the Hawthorne Option, in combination with past, present and probable future projects, would not result in a significant cumulative impact related to drainage patterns, floods, or conflicts with a water quality plan.