

Appendix 13

Hydrology and Water Quality

13 Hydrology and Water Quality

13.1 Introduction

This document summarizes the potential for the project to adversely affect local hydrologic resources, surface and groundwater quality, or cause the release of pollutants due to inundation of flooding. The analysis is based on review of preliminary project plans, and the following primary sources:

- Hydrology, Floodplain, Water Quality, and Stormwater Runoff Impact Analysis for the Monterey Peninsula Light Rail Project. November 2010.
- TAMC. Monterey Peninsula Light Rail Project EA/EIR (Administrative Draft - on file with MST and TAMC).

13.2 Environmental Setting

This document presents information on hydrologic conditions in the project area. The current status of surface and groundwater resources was used as the baseline against which to compare potential impacts of the project. This information is sourced and summarized from the reports identified above, as well as more current regulations that are in place to protect these resources.

13.2.1 Local Drainage Basins

The project is located within the Monterey Bay watershed (12-digit Hydrologic Unit Code 180600150305) from the northern extent to where the proposed project would cross under SR 1 and continue on California Avenue. In general, flows travel from east to west and discharge to Monterey Bay. The remainder of the project area is within the Canyon del Rey subwatershed (HUC 180600150304). Within the project area, there are few defined drainage channels given the area is comprised of sandy and highly permeable soils and thus infiltrate a majority of runoff (USGS, 2020). The Canyon del Rey Watershed drains into Arroyo Del Rey, a perennial stream that begins in the eastern portion of the Canyon del Rey watershed and east of the project area near Laguna Seca Race Track, and flows west discharging into the Monterey Bay. Water courses that discharge to Robert's Lake have been historically controlled in association with development activities, including construction of the original Monterey Branch Line (MBL). Existing drainage facilities within the regional system either cross perpendicular to or run longitudinally along the proposed project alignment. The drainage systems crossing within the alignment are located in easements maintained and operated by the respective utility owner.

The project site is located within the Salinas Hydrologic Unit (HU) Monterey Peninsula Planning Area 309.50 as designated by the Central Coast Regional Water Quality Control Board (RWQCB), Region 3 (RWQCB, 2019).

Runoff in the project area is influenced by soils, topography, and land cover. As mapped by the Natural Resources Conservation Service (NRCS), soils in the project area have a moderate to high soil erosion potential. Regional studies conducted by Monterey County indicate the highest rates of erosion are likely to occur where younger and older dune sand deposits are, especially where they are not covered by vegetation.

Based on the NRCS maps, the subsurface profile of the project site generally consists of Baywood sand (2 percent to 15 percent slopes) and Oceano loamy sand (2 percent to 15 percent slopes). These soils are excessively drained and the estimated depth to a soil layer that would restrict subsurface water movement is 80 inches. The soils have a low frequency for flooding and ponding and a high infiltration capacity (NRCS, 2020). Both Baywood and Oceano Series are composed of sand and have low water storage potential. The soils underlying the project site have a low potential for soil expansion and low shrink-swell potential.

Topography across the site is relatively flat with elevations ranging from approximately 20 to 120 feet above mean sea level.

Land cover classifications in the project alignment include open space and developed areas with high and medium intensity (USGS, 2016).

13.2.2 Flooding

Flood Insurance Rate maps partition flood areas into zones: Zone A for areas of 100-year flood; Zone B for areas of 500-year flood; and Zone C and X for areas outside 500-year floodplain, which are areas of minimal flooding. The National Flood Insurance Program 100-year floodplain is considered the base flood condition. This is defined as a flood event of a magnitude that would be equaled or exceeded an average of once during a 100-year period. Floodways are defined as stream channels plus adjacent floodplains that must be kept free of encroachment as much as possible so that the 100-year floods can be carried without substantial increases (no more than one foot) in flood elevations.

Based on the most current available Federal Emergency Management Agency (FEMA) mapped Flood Insurance Rate Maps (FIRM) for this area, the project site is located within Zone X, in an Area of Minimal Flood Hazard (FEMA, 2017). Thus, the project site is not located within the 100-year floodplain nor a special flood hazard area as defined by FEMA.

13.2.3 Tsunami

A tsunami is a large ocean wave generated by an earthquake or landslide in or near the ocean. Tsunamis are a series of very long-period waves (lasting five minutes to several hours) that are low in height when traversing water of oceanic depth. The major California offshore faults close to Monterey Bay are strike-slip faults, and earthquakes generated on strike-slip faults are not likely to produce large-scale tsunamis. Thus, tsunami potential associated with a local offshore seismic event is low along the coast of Monterey Bay.

Nevertheless, while some tsunamis have been recorded along the Monterey Bay coast, there is no record of any tsunamis more than 10 feet high. The project alignment is not within a Tsunami Emergency Response Planning Zone established by California Office of Environmental Safety (OES). The nearest location within a tsunami inundation zone is approximately 1,500 feet south of the project terminus at Contra Costa Street at Roberts Lake and the Laguna Grande area south of Canyon del Rey Boulevard (CAL OES, 2020).

13.2.4 Coastal Hazards

Typical coastal hazards include cliff erosion, dune erosion, rising tides, and coastal storm flood hazard zones. Given the elevation of the project area, the distance from the coastline, and the limited

development between the project area and the coastline, coastal hazards in the project area are low. The project area is located a minimum of approximately 900 feet inland from the coastline throughout the alignment. Thus, cliff erosion is not a likely concern in the project area. Dunes without vegetative cover can be susceptible to erosion. While dunes occur beyond the project area and closer to the coastline, few active dunes occur in the project study area and a majority of the undeveloped areas adjacent to the project site are vegetated. Thus, dune erosion within the project area is not a likely coastal hazard. Further, the highest sea level rise projections on the longest horizon year, 2100, is 62.6 inches (NRC, 2012). Given the project area is within Zone X and thus above the base flood elevation, the limited surface water drainages in the project area, and that the elevation of the project area ranges 20 to over 100 feet above mean sea level, sea level rise and coastal storm flood hazards are considered to be of low risk to this project.

13.2.5 Water Quality

The RWQCB reviews surface water quality monitoring data conducted by the agency and others to assess whether waters are meeting criteria to support beneficial uses designated by the Clean Water Act. If waters are shown to not meet criteria they are placed on the 303(d) list of impaired waters and a Total Maximum Daily Load (TMDL) must be developed. A TMDL identifies the amount of pollutant(s) a water can receive and still meet water quality standards (e.g. criteria and beneficial uses)

Table 13-1: Beneficial Uses of Potentially Affected Water Bodies Near the Proposed Alignment summarizes the beneficial uses of potentially affected water bodies located along the proposed alignment. Surface water features with beneficial use designations in the project area are limited to the receiving waters in the Canyon del Rey subwatershed south of the project limits. Narrative and numeric water quality criteria applicable to each beneficial use are identified in Section 3.3.2 of the Basin Plan (RWQCB, 2019).

In the most recent Integrated Report completed by the State Water Resources Control Board (SWRCB), the section of Monterey Bay coastline which parallels the project area was assessed for multiple pollutants and was designated as a ‘Category 2’ water, which indicates that the water supports some, but not all, of its beneficial uses and has other uses that are not assessed or lack sufficient information to be assessed.

According to the most recent approved 303(d) list, no waterbodies within the project area have been listed as impaired (SWRCB, 2016). While TMDLs occur in the vicinity of the project, none occur within the watersheds within the project area.

Table 13-1: Beneficial Uses of Potentially Affected Water Bodies Near the Proposed Alignment

Waterbody	Basin Plan uses ¹						
	MUN	REC-1	REC-2	WILD	COLD	WARM	COMM
Robert’s Lake	X	X	X	X	X	X	X
Del Monte Lake	X	X	X	X		X	X

1. MUN = Municipal; REC1 = Water Contact Recreation; REC2 = Non-contact Water Recreation; WILD = Wildlife Habitat; COLD = Cold Freshwater Habitat; WARM = Warm Freshwater Habitat; COMM = Commercial and Sport Fishing
Source: RWQCB, 2019

13.2.6 Groundwater

The northern terminus of the project is located near the mouth of the the Salinas Valley which overlies a single common aquifer, the Salinas Valley Groundwater Basin. This groundwater basin is divided into four hydrologically inter-connected subareas known as the Pressure Area, the East Side Area, the Forebay Area, and the Upper Valley Area. The Pressure Area is located near the coast and covers an estimated surface area of 342 square kilometers. In the Pressure Area, three stratified aquifers exist under confined conditions. These aquifers are known as the Pressure 180-Foot, the Pressure 400-Foot, and the Deep Zone and are comprised of permeable sands and gravels separated by confining clay layers. Recharge to the Pressure subarea occurs from surrounding unconfined units. (DWR, 2003).

The project alignment crosses two groundwater subbasins as designated by the Basin Plan, Basin 3.4-01 (the Pressure 180/400 foot aquifer subbasin) and Subbasin 3-4.08 (Seaside Basin). Groundwater levels in the area have generally been in decline. Seawater intrusion has been known to occur in these basins as early as the 1940's. The Seaside Basin is subject to a court-ordered reduction schedule limiting groundwater withdrawals. Groundwater pumping is limited to protect the basin from overuse and to prevent saltwater intrusion into the aquifer, which would contaminate the freshwater supply. Generally, the depth to groundwater is 100 feet in the Pressure 180/400 foot aquifer, though depths vary across the subbasin, increasing slightly from the southeast to the northwest (MCWRA, 2006). While the depth to groundwater in the Seaside Basin was measured between 60 and 70 feet below the ground surface from 2012 monitoring data available nearest the project site (Pueblo Water Resources, 2013).

13.3 Applicable Regulations, Plans, and Standards

13.3.1 Federal

Clean Water Act

The Clean Water Act (CWA) (33 U.S.C. Section 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States (U.S.). The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the U.S. and has given the U.S. Environmental Protection Agency (U.S. EPA) the authority to implement pollution control programs. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). In California, NPDES permitting authority is delegated to, and administered by, the nine Regional Water Quality Control Boards (RWQCBs). The proposed project is within the jurisdiction of the Central Coast RWQCB.

Section 402 of the Clean Water Act authorizes the California SWRCB to issue NPDES Construction General Permits for Storm Water (Construction General Permit Order 2009-0009-DWQ; as amended by 2010-0014-DWQ and 2012-0006-DWQ), referred to as the "Construction General Permit." Construction activities which disturb greater than 1 acre of land can comply with and be covered under the Construction General Permit provided that they:

- Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent construction pollutants from contacting storm

water and with the intent of keeping products of erosion from moving off site into receiving waters.

- Eliminate or reduce non-storm water discharges to storm sewer systems and other waters of the nation.
- Perform inspections of all BMPs and maintain BMPs throughout construction.
- Implement BMPs to stabilize areas temporarily disturbed due to construction.

The SWPPP must contain a visual monitoring program; a chemical monitoring program for “non-visible” pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Compliance tasks increase with a project’s risk level as defined by the Construction General Permit. Increased compliance tasks under the adopted 2009 Construction General Permit include project risk evaluation, effluent monitoring, receiving water monitoring, electronic data submission of the SWPPP and all other permit registration documents, and a Rain Event Action Plan (REAP), which must be designed to protect all exposed portions of a project site within 48 hours prior to a qualifying rain event.

Section 401 of the CWA requires that any activity that may result in discharges of fill into a federal and state jurisdictional waterbodies be certified by the RWQCB. A 401 certification is issued in association with a Section 404 permit issued by the U.S. Army Corps of Engineers (USACE) for the same waterbodies. This 401 certification ensures that the proposed activity does not violate State and/or federal water quality standards. The limits of non-tidal waters extend to the Ordinary High Water Mark (OHWM), which is defined as the line on the shore of streams and lakes established by the fluctuation of water and indicated by physical characteristics, such as natural line impressed on the bank, changes in the character of the soil, and presence of debris. When adjacent wetlands are present, the USACE jurisdiction extends beyond the OHWM to the limit of the adjacent wetlands. The USACE may issue either individual, site-specific permits or general, nationwide permits for discharge into US waters through Section 404.

Section 404 of the CWA requires a permit for construction activities involving dredging or placement of any kind of fill material into waters of the U.S. or wetlands. As mentioned above, a certification pursuant to Section 401 of the CWA is required for Section 404 permit actions. If applicable, construction would also require a request for Water Quality Certification (or waiver thereof) from the RWQCB.

When an application for a Section 404 permit is made, the applicant must show it has:

- Taken steps to avoid impacts to wetlands or waters of the U.S. where practicable;
- Minimized unavoidable impacts on waters of the U.S. and wetlands; and
- Provided mitigation for unavoidable impacts.

Section 303(d) of the CWA (CWA, 33 USC 1250, et seq., at 1313(d)) requires states to identify “impaired” water bodies as those which do not meet water quality standards. States are required to compile this information in a list and submit to U.S. EPA for review and approval. An affected waterbody, and associated pollutant or stressor, is then prioritized in a list of impaired water bodies known as the 303(d) List. The CWA further requires the development of a Total Maximum Daily Load (TMDL) for each listing. A TMDL identifies the allowable pollutant loads from point sources and nonpoint sources that can be discharged and still meet water quality standards.

National Flood Insurance Program (NFIP)

The NFIP, implemented by the Congress of the United States in 1968, enables participating communities to purchase flood insurance. Flood insurance rates are set according to flood-prone status of property as indicated by FIRMs developed by FEMA. FIRMs identify the estimated limits of the 100-year floodplain for mapped watercourses, among other flood hazards. As a condition of participation in the NFIP, communities must adopt regulations for floodplain development intended to reduce flood damage for new development through such measures as flood proofing, elevation on fill, or floodplain avoidance.

13.3.2 State

California Department of Fish and Wildlife

Section 1602 of the California Department of Fish and Wildlife (CDFW) Code protects the natural flow, bed, channel, and bank of any river, stream, or lake designated by the CDFW in which there is, at any time, any existing fish or wildlife resources, or benefit for the resources. Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state, and requires any person, state or local governmental agency, or public utility to notify the CDFW before beginning any activity that will:

- Substantially divert or obstruct the natural flow of any river, stream or lake;
- Substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake; or
- Deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

A Streambed Alteration Agreement is required prior to any construction if CDFW determines that a project could substantially adversely affect an existing fish and wildlife resource. The Agreement includes measures to protect fish and wildlife resources while conducting the project. CDFW must comply with CEQA before it may issue a final Agreement; therefore, CDFW must wait for the lead agency to fully comply with CEQA before it finalizes the Agreement.

California Water Code §13050-§13260

California Water Code §13050. California Water Code §13050(e) defines “waters of the state” as “any surface water or groundwater, including saline waters, within the boundaries of the state.” California Water Code §13260 requires that any person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the State, other than into a community sewer system, must submit a report of waste discharge to the applicable RWQCB.

Porter-Cologne Water Quality Control Act

SWRCB regulates water quality through the Porter-Cologne Water Quality Act of 1969, which contains a complete framework for the regulation of waste discharges to both surface waters and groundwater of the state. On the regional level, the proposed project falls under the jurisdiction of the Central Coast RWQCB, which is responsible for the implementation of state and federal water quality protection statutes, regulations and guidelines.

The Central Coast RWQCB has authority to implement water quality protection standards through the issuance of permits for discharges to waters in its jurisdiction. Water quality objectives for receiving waters within Monterey County are specified in the Water Quality Control Plan for the Central Coast Basin (Basin Plan) prepared by the RWQCB in compliance with the federal CWA and the State Porter-Cologne Act. The principal elements of the Basin Plan are a statement of protected beneficial water uses; water quality objectives necessary to protect the designated beneficial water uses; and strategies and time schedules for achieving the water quality objectives. Together, narrative and numerical objectives define the level of water quality that shall be maintained in the region. The water quality objectives are achieved primarily through the establishment and enforcement of waste discharge requirements (WDRs).

RWQCBs have primary responsibility for issuing WDRs. The RWQCBs may issue individual WDRs to cover individual discharges or general WDRs to cover a category of discharges. WDRs may include effluent limitations or other requirements that are designed to implement applicable water quality control plans, including designated beneficial uses and the water quality objectives established to protect those uses and prevent the creation of nuisance conditions. Cleanup and Abatement Orders (CAOs) or Cease and Desist Orders (CDOs), assessing administrative civil liability, or seeking imposition of judicial civil liability or judicial injunctive relief address violations of WDRs.

The SWRCB has designated Areas of Special Biological Significance (ASBS) on the California Coast in an effort to preserve the unique and sensitive marine ecosystems for future generations. ASBS are a subset of state water quality protection areas in the ocean along the California coast that require special protection per the California Marine Managed Areas Improvement Act. Their protection is set forth by the SWRCB through the California Ocean Plan, which prohibits discharge of waste to designated ASBS. An ASBS does not exist within or adjacent to the project area. The nearest ASBS is located north of the City of Pacific Grove, approximately 3 miles west of the project site.

Central Coast RWQCB Post-Construction Stormwater Management Requirements

In July 2013, the Central Coast Regional Water Quality Control Board (RWQCB) adopted Order R3-2013-0032, which requires new and more stringent Post-Construction Requirements (PCRs) for proposed development projects. The PCRs mandate that development projects use Low Impact Development (LID) features and facilities to detain, retain, and treat site runoff. LID incorporates and conserves on-site natural features, together with constructed hydrologic controls to more closely mimic pre-development hydrology and watershed processes. Projects that receive their first discretionary approval after March 6, 2014, are subject to the PCRs if they create or replace 2,500 sf or more of impervious area.

The PCR performance requirements range from Tier 1 to Tier 4, with requirements strengthened for each additional tier. Tier 4 projects have the most stringent requirements. For these projects which create or replace 22,500 sf or more of impervious surface, post-development peak flows discharged from the site must not exceed pre-project peak flows for the 2-year through 10-year storm events. This requirement is in addition to other requirements for Tier 1-3 projects.

The entire project area is within a designated groundwater basin, the Salinas Valley Ground Water Basin. The project is within Watershed Management Zone (WMZ) 4 from its northern origin to the intersection of Highway 1 and Fremont Boulevard, and then within WMZ 1 from the intersection of Highway 1 and Fremont Boulevard to the southern project terminus. Thus, the project would be subject to Tier 1-3 of

PCRs for Development Projects in the Central Coast Region for the entire project area. In addition, from the intersection of Highway 1 and Fremont Boulevard to the southern project terminus, the project would also be subject to Tier 4 PCRs.

Performance Requirement 1 (Site Design and Runoff Reduction) requires projects that create and or replace more than 2,500 square feet of impervious surfaces, including detached single-family home projects to implement at least the following design strategies:

- i) Limit disturbance of creeks and natural drainage features
- ii) Minimize compaction of highly permeable soils
- iii) Limit clearing and grading of native vegetation at the site to the minimum area needed to build the project, allow access, and provide fire protection
- iv) Minimize impervious surfaces by concentrating improvements on the least-sensitive portions of the site, while leaving the remaining land in a natural undisturbed state
- v) Minimize stormwater runoff by implementing one or more of the following site design measures:
 - (1) Direct roof runoff into cisterns or rain barrels for reuse
 - (2) Direct roof runoff onto vegetated areas safely away from building foundations and footings, consistent with California building code
 - (3) Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas safely away from building foundations and footings, consistent with California building code
 - (4) Direct runoff from driveways and/or uncovered parking lots onto vegetated areas safely away from building foundations and footings, consistent with California building code
 - (5) Construct bike lanes, driveways, uncovered parking lots, sidewalks, walkways, and patios with permeable surfaces

Performance Requirement 2 (Water Quality Treatment) requires regulated projects, except single-family homes, greater than 5,000 square feet of net impervious area, and detached single-family homes greater than 15,000 square feet of net impervious area to treat stormwater runoff as required in the Water Quality Treatment Performance in Section B.3.b. to reduce pollutant loads and concentrations using physical, biological, and chemical removal. Regulated projects would be subject to Water Quality Treatment Performance Requirements to treat runoff generated by the Regulated Project site using the onsite measures below, listed in the order of preference (highest to lowest). Water Quality Treatment Performance Requirements shall apply to the runoff from existing, new, and replaced impervious surfaces on sites where runoff from existing impervious surfaces cannot be separated from runoff from new and replaced impervious surfaces. Measures to meet these requirements include:

- Low Impact Development (LID) Treatment Systems
- Biofiltration Treatment Systems

- Non-Retention Based Treatment Systems

Performance Requirement 3 (Runoff Retention) requires regulated projects, except single-family homes, that create and/or replace greater than or equal to 15,000 square feet of impervious cover in WMZs 1,2,5,6,8 and 9 and portions of WMZs 4,7, and 10 that overlie designated groundwater basins to meet runoff retention performance requirements in Section B.4.b and B.4.c using the LID Development Standards in Section B.4.d. Measures to meet these requirements include:

- Adhering to runoff retention performance requirements applicable to WMZs 1 and 4 which overlie groundwater basins
 - Retain the 95th Percentile Rainfall Event
 - Optimize infiltration
- LID Development Standards
- Off-Site Mitigation if the project site cannot retain the full retention volume or demonstrates technical infeasibility
- Reporting

Performance Requirement 4 (Peak Management) requires all regulated projects, that create and/or replace greater than or equal to 22,500 square feet of impervious cover in WMZs 1,2,3,6 and 9 to manage peak stormwater runoff as required below (Section B.5.a.i.), and to meet Water Quality Treatment and Runoff Retention Performance Requirements. Thus, the portion of the project from the intersection of Highway 1 and Fremont Boulevard to the southern project terminus would be required to meet performance requirement 4 if greater than 22,500 square feet of impervious surface would be created. Measures to meet these requirements include:

- Apply Peak Management Performance Requirements so post development flows shall not exceed pre-project peak flows for 2-through 10-year storm events.
- Reporting

California Coastal Act

The California Coastal Commission (CCC) was established by voter initiative in 1972 (Proposition 20) and later made permanent by the California State Legislature through adoption of the CCA of 1976. In partnership with coastal cities and counties, the CCC plans and regulates the use of land and water in the coastal zone. Development activities, which are broadly defined by the CCA to include (among others) construction of buildings, divisions of land, and activities that change the intensity of use of land or public access to coastal waters, generally require a Coastal Development Permit (CDP) from either the CCC or the local government if a Local Coastal Program (LCP) has been certified. After certification of an LCP, CDP authority is delegated to the appropriate local government, but the CCC retains original permit jurisdiction over certain specified lands (such as tidelands and public trust lands). The CCC also has appellate authority over development approved by local governments in specified geographic areas as well as certain other developments. A CDP is required in addition to any other permit required from resource agencies.

Section 30240 of the CCA states that “environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.” This section also states that “development in areas adjacent to

environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas and shall be compatible with the continuance of those habitat and recreation areas.”

13.3.3 Local

Monterey County Groundwater Plan

The Monterey County Groundwater Management Plan establishes groundwater management objectives for the Salinas Valley Groundwater Basin Management Area. The project area is wholly contained within a part of this Management Area. The Groundwater Management Plan provides monitoring data and estimates groundwater supply and demand (Plan Element 1 and 2), establishes short and long-term water quality management elements (Plan Element 6), and identifies and discusses mitigation for groundwater contamination (Plan Element 8).

Groundwater basin objectives include:

- Development of integrated water supplies to meet existing and projected water requirements
- Determination of Sustainable Yield and Avoidance of Overdraft
- Preservation of Groundwater Quality for Beneficial Use

According to the short and long-term water quality management planning element, the two main groundwater quality issues, related to its use as a future water supply, are seawater intrusion in the northern portion of the Salinas Groundwater Basin and increased nitrate concentrations due to historical land uses and likely agricultural runoff in many parts of the basin.

Plan element 8 identifies that groundwater contamination, other than seawater intrusion, is primarily due to nitrate contamination and release of other toxic substances to soil and groundwater (e.g. through leaking underground storage tanks) and chemicals in groundwater due to natural processes.

Local Coastal Programs

The project site is located within the boundaries of the Marina and Sand City LCPs, as well as within CCC’s original jurisdiction as shown in [Figure 7-1](#) in Appendix 7, Biological Resources. Former Fort Ord lands are not certified under a separate LCP and remain in the original CCC jurisdiction. The project ends just north of but is outside the LCP area within Seaside. LCP policies are referenced as project mitigation, where warranted.

Marina City Local Coastal Program

Approximately 600 feet of the proposed alignment, from south of Cypress Avenue to the City limit, is within the City of Marina’s Local Coastal Zone planning area. The City of Marina’s adopted LCP (City of Marina, 2013) contains background information and polices addressing physical hazards within the coastal planning area (p. 61 et. seq.) and evaluates concerns and mitigation for groundwater resources (p. 65). Please see Chapter 14, Land Use regarding overall project consistency with the LCP.

Sand City Local Coastal Program

The project alignment is within Sand City from a location approximately 1,500 feet north of the intersection of Highway 1 and California Avenue to the southern terminus of the project at Contra Costa

Street. The LCP establishes goals and policies for public access and recreation, provides information regarding environmentally sensitive habitats to protect coastal resources, and discusses water allocations for future development projects.

Municipal and County Regulations

Monterey County Code - Chapter 16.12 (Erosion Control Ordinance)

Chapter 16.12 of the Monterey County Municipal Code prohibits development on slopes greater than 30 percent, requiring completion of an Erosion Control Plan, control of runoff, avoiding creek disturbance, regulating land clearing, and prohibiting grading activities during the winter. The Erosion Control Ordinance is enforced by the County Director of Building Inspection.

City of Marina Municipal Code

Chapter 8.46 (Urban Storm Water Quality Management and Discharge Control)

Chapter 8.46 of the City of Marina Municipal Code prohibits illegal discharges to receiving waters, requires compliance with the NPDES Construction General Permit (CGP), sets requirements to prevent and reduce storm water pollutants, protect watercourses, and sets enforcement, compliance and penalty assessment procedures which are administered by the City. The City has the authority to require additional BMPs beyond those implemented to comply with the CGP. Any such requirements would be incorporated into a land use entitlement, construction or building permit to be issued by the City for a project.

City of Seaside Municipal Code

Section 15.32.180 (Design standards – Erosion and sediment control)

Section 15.32.180 of the Seaside Municipal Code contains design standards for erosion and sediment control related to slopes, runoff control, building site runoff, vegetation removal, vegetation disposal, topsoil, temporary vegetation, winter operations, dust, erosion control coordination with project installation, livestock, and maintenance.

Section 15.32.090 (Permit – Application – Engineering reports required)

Section 15.32.090 of the Seaside Municipal Code requires either a soil engineering report or engineering geology report for excavation, grading, filling, clearing, and/or erosion control work permits which are required to include recommendations for seismic and erosion control.

Section 15.32.070 (Permit – Application – Plans and specifications required)

Section 15.32.070 of the Seaside Municipal Code requires permit applications to include vegetation erosion control and revegetation measures for all surfaces exposed or expected to be exposed during grading activities as part of overall erosion and sediment control plans

Sand City Municipal Code

Chapter 13-05 (Stormwater Management)

Chapter 13-05 of the Sand City Municipal Code establishes requirements to enhance water quality of waters consistent with the Clean Water Act by reducing pollutants in stormwater discharges. The

chapter sets requirements to implement BMPs to reduce pollutants due to construction stormwater and to address pollutant loads from stormwater runoff due to post construction runoff. BMPs required by the City would be a condition of project approval and issuance of building permits or land use entitlements issued by the City. This Chapter of the Municipal Code establishes enforcement, compliance and penalty assessment procedures which are administered by the City.

13.4 Environmental Impacts and Mitigation Measures

13.4.1 Significance Criteria

The following significance criteria for hydrology and water quality were derived from the Environmental Checklist in CEQA Guidelines Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address lead agency requirements and the full range of potential impacts related to this project.

An impact of the project would be considered significant and would require mitigation if it would meet one of the following criteria.

- Violate any water quality standards or waste discharge requirements or otherwise degrade surface water or groundwater quality.
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge, such that the project may impede sustainable groundwater management of the basin.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
 - Result in substantial erosion or siltation on- or offsite.
 - Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite.
 - 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.
- In flood hazard, coastal hazard, tsunami, or seiche zones, risk coastal flooding and/or release of pollutants due to project inundation.
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

13.4.2 Summary of No and/or Beneficial Impacts

The project would not require the use of nor withdraw groundwater for use in construction or operation of the site. Thus, the project would have no impact to existing groundwater supply. The project would capture, treat, infiltrate, and retain stormwater runoff on site as required by PCRs described above. Thus, while the project would add impervious cover, the stormwater runoff generated on site would remain on site to the extent feasible. Groundwater recharge to the aquifers in the project area occur primarily through infiltration of precipitation and surface flows from streams that are outside the project area but still within the groundwater basin. Further, the project would not require significant excavation or placement of structures in the subsurface at a depth that would conflict with recharge

zones, nor require grading in a manner that would substantially change the drainage of the site such that it would interfere with groundwater recharge. Thus, the project would not decrease groundwater supplies or interfere substantially with groundwater recharge, such that the project may impede sustainable groundwater management of the basin.

13.4.3 Impacts of the Project

Impact HYD-1: The project is subject to stringent water quality control standards which would prevent potential degradation of local surface water or groundwater quality. This is a **less than significant** impact.

Construction

Construction-related activities associated with the project would include demolition, grading, excavation, and temporary land disturbance to bare areas which would displace soils and temporarily increase the potential for soils to be subject to wind and water erosion. Construction-related effects to water quality would be addressed through compliance with the NPDES CGP. Projects which disturb greater than 1 acre of land area are required to obtain coverage under the CGP which is administered by the SWRCB. Thus, the project applicant would be required to submit a Notice of Intent to the SWRCB and apply for coverage under the CGP. To obtain coverage the applicant must prepare a SWPPP and submit it for review and approval prior to commencing construction. The CGP requires development and implementation of a SWPPP and monitoring plan, which must include erosion-control and sediment-control BMPs to control potential construction-related pollutants from migrating off site into the storm drain system and into or directly in receiving waters. Erosion-control BMPs are designed to prevent erosion, whereas sediment controls are designed to trap sediment once it has been mobilized. The types of BMPs required would be based on the amount of soil disturbed, the types of pollutants used or stored at the project site, and proximity to water bodies. To remain in compliance with the CGP, BMPs must be inspected and maintained throughout construction. In addition, areas temporarily disturbed due to construction must be stabilized to close out the CGP.

The project would be required to comply with the CGP and implement BMPs throughout construction and thus project construction would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Impacts would be less than significant with adherence to these standard requirements.

Operation

Compared to existing conditions project operation of the busway lanes and 5th Street Station could contribute polluted runoff such as pesticides, herbicides, oils, grease, sediment, debris and other urban (roadway) pollutants that can collect on impervious surfaces and then be conveyed in stormwater runoff into existing drainage facilities and eventually to Monterey Bay. As discussed above, the project applicant would be required to prepare a SWPPP and incorporate BMPs for construction and post-construction conditions. In addition, the project would be required to implement LID and stormwater treatment facilities to capture, infiltrate, or otherwise retain post-project runoff on site to meet pre-project hydrologic conditions consistent with performance criteria described in Tier 3 PCRs. Compliance with PCRs also requires certain infiltration rates are met in order to capture and treat stormwater runoff via infiltration. This would be accomplished with the construction of linear detention and treatment

facilities along the alignment, located completely within the TAMC right of way (or on the MST 5th Street Station parcel). Thus, water that would infiltrate from the project would be treated as it passes through the subsurface soils. Given the depth to groundwater in the project area, it can reasonably be expected that limited pollutants in stormwater runoff would be minimized and not impact groundwater quality. Following compliance with the CGP during construction and PCRs to address post-construction, operation of the project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. No further mitigation measures are required, and impacts would be less than significant.

Conclusion

The project would be required to prepare a SWPPP, which includes implementation and monitoring of BMPs throughout project construction to control potential construction-related pollutants. Following compliance with the CGP during construction and PCRs to address post-construction, operation of the project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality compared to existing conditions. Impacts would be less than significant.

Impact HYD-2: The project could alter the existing drainage pattern of the site, but would not cause substantial erosion, cause flooding or exceed the capacity of the existing stormwater system. This is a **less than significant impact**.

Construction and Operation

Please see Impact HYD-1 above regarding existing controls and regulations already in place to manage water quality from site construction activity and post construction runoff. Also, as identified in the analysis of Impact HYD-1, the site would add 22 acres of new impervious surfaces (over 5 linear miles). This would result in increased stormwater runoff, but compliance with PCRs as discussed in Impact HYD-1 above would minimize the impacts due to changes in the existing drainage pattern. On site treatment of stormwater runoff as required by the PCRs minimizes the stormwater runoff that is discharged to the existing stormwater system.

The project site contains the existing rail alignment which drains and percolates into the sandy soil. Paved areas at the north and south end of the project drain into existing storm drain systems. There are no natural drainage features (streams, creeks, swales or rivers) that will be affected by construction and operation of the site. Changes to the site's existing drainage pattern will entail the re-direction of existing flows, based on the grading to occur and addition of new impervious cover. The post-project condition, however, will require a majority of stormwater runoff to be captured and treated on site prior to discharging in order to comply with PCRs. Thus, stormwater flows will continue to percolate into project soils, and flows that do reach a storm drain system will not substantially differ as compared to existing conditions. Additionally, any new stormwater drainage facilities installed on site would be designed and sized in accordance with applicable County standards so that the project would not exceed the capacity of the existing stormwater system.

Underlying sandy soils within the project area have high infiltration rates and provide opportunities for capturing and treating stormwater runoff. If required to meet infiltration rates per the PCR, soils would

be amended in stormwater treatment facilities (e.g. LID) providing more opportunity for water quality treatment.

Conclusion

Compliance with PCRs throughout the project alignment would require on-site treatment of stormwater runoff to the extent feasible so that stormwater runoff generated by the new impervious cover would not result in a substantial increase in runoff quantities as compared to the pre-project condition. Compliance with the CGP during construction and PCRs during project operation means the project would not result in substantial erosion or siltation on- or offsite or increase the rate of flooding on- or offsite. Similarly, as stormwater runoff would be captured and infiltrated to the extent feasible, and new stormwater facilities would be sized to meet County standards, the project would not exceed the capacity of existing or planned stormwater drainage systems. As discussed above, the project applicant would be required to apply for coverage under the State NPDES General Permit for Construction Activities and prepare a SWPPP for the project site. Erosion-control BMPs would prevent erosion and trap sediment. Following compliance with PCRs, NPDES requirements, BMPs and County requirements, construction of the project would not result in substantial erosion or siltation on- or offsite, increase the rate or amount of surface runoff resulting in flooding on- or offsite, or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. Impacts would therefore be less than significant.

Impact HYD-3: The project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. This is a **less than significant impact**.

Construction and Operation

The 2019 RWQCB Basin Plan applicable to the project area identifies beneficial uses, water quality objectives, and impaired waters that do not meet water quality criteria throughout the Central Coast region. The project would not result in the discharge to any receiving waters within the project area that are identified in the Basin Plan. Further, the project area does not contain impaired waters on the most recent 303(d) list. While pollutants would be generated in stormwater runoff conveyed from new impervious surfaces, compliance with PCRs would require that stormwater runoff is captured and treated prior to discharge to a detention basin or storm drain system. Thus, the project would not conflict or obstruct with obtaining beneficial uses and water quality criteria designated in the Basin Plan.

As discussed above, the project site overlies the Salinas Valley Groundwater Basin. The project would not conflict with the Monterey County Groundwater Management Plan objectives or relevant Plan Elements. The project would not require groundwater use for project construction or operation thus would not conflict with groundwater supply. The project would not be the source of pollutants that would exacerbate seawater intrusion, nitrate contamination, or release of toxic substances into soil or groundwater. Stormwater runoff from the project would be treated on-site and in a manner that meet infiltration criteria consistent with PCR requirements. Soils beneath the surface of stormwater treatment facilities are sandy and have high permeability. The depth to groundwater is known to range from 60 to 180 feet throughout the project area. Given the stormwater treatment that would occur throughout the project and on site, the permeability and infiltration capacity of soils in the project area, and the depth to groundwater through the project area, pollutants in stormwater runoff generated by

new impervious cover from the project would be reasonably expected to be treated prior to reaching groundwater tables. Thus, the project would not substantially decrease or interfere with groundwater recharge nor conflict with a groundwater management plan.

Compliance with PCRs would provide treatment of stormwater runoff and the project would not require use of groundwater nor impeded with applicable sustainable groundwater management plans. Impacts would be less than significant.

13.4.4 Cumulative Impact Analysis

Impact HYD-4: The project would not contribute to cumulatively considerable impacts on hydrology and water quality. This is a **less-than-significant impact**.

The geographical area for cumulative water quality impacts are the two watersheds within the project area. Changes to the pattern, quantity and quality of stormwater runoff can potentially result in impacts to receiving waters as these flows are combined with cumulative development, incrementally increasing runoff volumes from increases in impervious surfaces. Surface water quality also has the potential to be impacted, as urban pollutants enter the drainage system and combine with urban flows and constituents from cumulative development. Given that all present and reasonably foresee future projects larger than one acre would be required to prepare a SWPPP and conform with BMPs, cumulative development would not result in decreased water quality due to construction in the watershed basin over the long term. Similarly, present and reasonably foreseeable future projects that create or replace 2,500 sf or more of impervious area would be required to meet PCR standards, with the Tier dependent upon the total impervious surface created or replaced. Thus, the post construction condition would not result in considerable impacts on hydrology and water due to cumulative developments.

The project would result in approximately 22 acres of new impervious surface. While the project would introduce a substantial amount of impervious cover, the project would be required to meet PCR standards Tier 1-3 for the entire project site, and Tier 1-4 for the portion of the site from the intersection of Highway 1 and Fremont Boulevard to the project's southern terminus. Compliance with these PCRs would require infiltration, retention, and on-site treatment of stormwater runoff volumes created by the project to an extent that the project area still meet pre-project hydrologic conditions according to PCR criteria. Implementation of LID and soils on site would also work to capture and treat stormwater runoff prior to discharge to the storm drain system. Thus, while cumulative development may have drainage pattern differences and introduce additional impervious surfaces, compliance with NPDES and local requirements for stormwater quantity and quality for each individual project would help to improve overall water quality in the watershed basin. The proposed project, combined with reasonably foreseeable projects, would result in less-than-significant cumulative impacts to stormwater quantity, water quality and groundwater management.

13.5 References

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