4.13 Water Resources

This section addresses issues involving potential impacts to water resources resulting from the proposal to extend the existing rail spur and construct a railcar unloading facility, including an oil pipeline to be extended to the existing refinery. In addition, this section addresses potential water quality impacts resulting from rail transport of oil along the mainline rail routes. The environmental setting provides information on surface water and groundwater in the vicinity of the Project Site and along the proposed mainline routes. The impacts evaluation focuses on the potential effects of the Rail Spur Project, including cumulative impacts on water quality and groundwater supply in the Project Site vicinity, as well as water quality impacts along the proposed mainline routes. Potential mitigation measures have been identified for significant impacts.

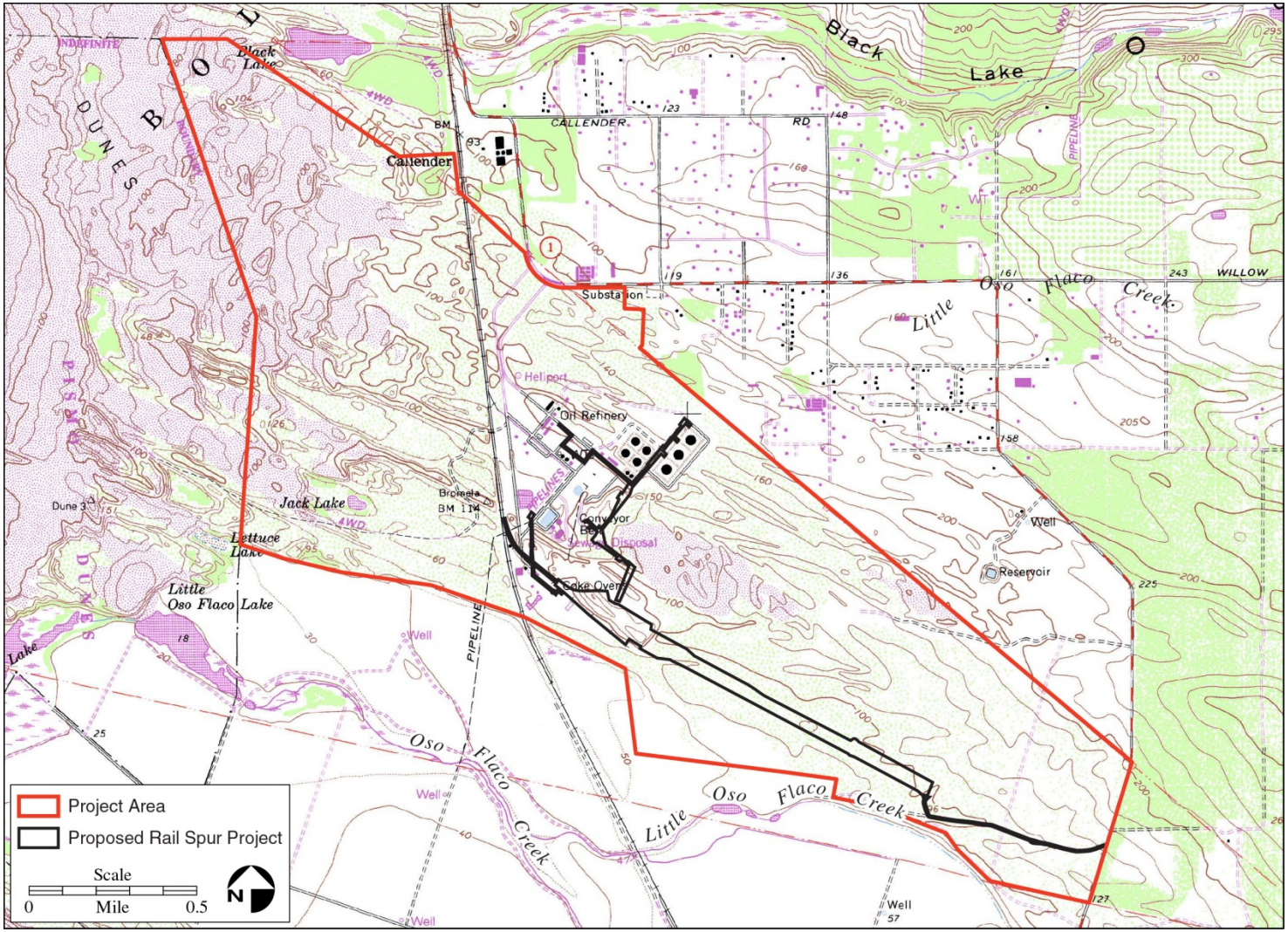
4.13.1 Environmental Setting

4.13.1.1 Topography and Drainage

The Project Site is located on undulating dune topography, with elevations ranging from approximately 50 to 180 feet above mean sea level (Figure 4.13-1). The topography of the proposed rail spur portion of the Project Site ranges in elevation from approximately 80 to 110 feet above sea level. The overall slope gradient is to the southwest, toward Little Oso Flaco Creek, located approximately 500 feet south of the southeastern end of the Rail Spur Project, at the closest point. Slope gradients within the Project Site are predominantly gentle, with localized steep slopes up to 30 feet high where the topography has been modified by grading. The proposed pipeline route traverses two such steep slopes, with intervening areas of gentle topography. The proposed railcar unloading area consists of a relatively flat graded area used by the existing coke facility. Large stockpiles of coke are present in the eastern portion of the coke facility.

The proposed rail spur roughly trends along a broad east-west trending ridge; however, the topography undulates along the alignment. Two broad, southwest-trending drainages emanate from the south side of the proposed rail spur. The western drainage terminates in a depression that has no hydrologic surface connection with Little Oso Flaco Creek. The eastern drainage terminates in a broad flat area, with no obvious hydrologic surface connection, such as gullies or other defined water courses, to Little Oso Flaco Creek. Several other internally draining basins are also present in the Rail Spur Project area, along the pipeline route and the rail spur alignment.

Figure 4.13-1 General Topography and Drainage of Project Area



The soils underlying the Project site are Oceano sands which are derived from old sand dune deposits. The soils are excessively drained, with a high capacity to transmit water (NRCS 2013). Due to the high infiltration rates, most of precipitation on the dune deposits percolates into the soil with minimal runoff, flooding, or ponding. The undulating dune topography has created the localized, internally draining basins, which limit the potential for runoff to flow from the Project Site to Little Oso Flaco Creek.

The Oceano sands are highly erodible. However, in an undisturbed state, most of the precipitation infiltrates with minimal runoff to cause soil erosion. No evidence of erosion, such as rilling or gullying, was noted during a site reconnaissance of the Project Site, including areas that had been previously disturbed and/or graded.

Little Oso Flaco Creek flows into Oso Flaco Creek (Figure 4.13-1), which terminates in Oso Flaco Lake, one quarter mile from the Pacific Ocean. Oso Flaco Creek and its tributary Little Oso Flaco Creek are mostly channelized and generally flow year-round, supported by irrigation tailwater runoff. Although the 100-year Flood Hazard Zone encompasses the southernmost portions of the Phillips 66 property, the Rail Spur Project, loading facility, and oil pipeline are located outside of the 100-year Flood Hazard Zone (Figure 4.13-2).

4.13.1.2 Surface Water Quality

Although located within the Santa Maria Valley, Oso Flaco Creek is not part of the Santa Maria River Watershed. The creek originates in agricultural fields north of the Santa Maria River Estuary. The Oso Flaco Creek Watershed encompasses approximately 10,370 acres. Land use within the watershed is primarily irrigated vegetable row crops. Oso Flaco Creek and its tributary Little Oso Flaco Creek are listed by the Environmental Protection Agency as 303D Impaired Water Bodies, based on high levels of fecal coliform, nitrates, and sediment toxicity from agriculture and contaminated groundwater. The downstream Oso Flaco Lake is the largest of four small freshwater lakes located in the Guadalupe Nipomo Dunes Complex. The freshwater lake occupies a surface area of 82 acres and is classified by the U.S. Fish and Wildlife Service as palustrine (i.e., inland, non-tidal) emergent wetlands, a valuable habitat for wildlife and subsequently a resource for many recreational and educational activities (EPA 2010; Boyle Engineering Corporation 2007).

4.13.1.3 Groundwater Supply

The Santa Maria Refinery extracts groundwater from the Nipomo Mesa Management Area (NMMA) of the Santa Maria Groundwater Basin (Figure 4.13-3). The source of groundwater for the SMR wells is the deep aquifer in the Paso Robles and Careaga formations underlying the Nipomo Mesa. The deep aquifer is also the main source of water for surrounding municipal and agricultural wells. The shallow aquifer in the Nipomo Mesa sand dunes is utilized by lower capacity domestic and agricultural wells. The shallow and deep aquifers underlying the refinery are separated by relatively low hydraulic conductivity layers that act as confining layers in the NMMA (NMMA TG 2013).

Figure 4.13-2 100-year Flood Hazard Zone for Oso Flaco Creek

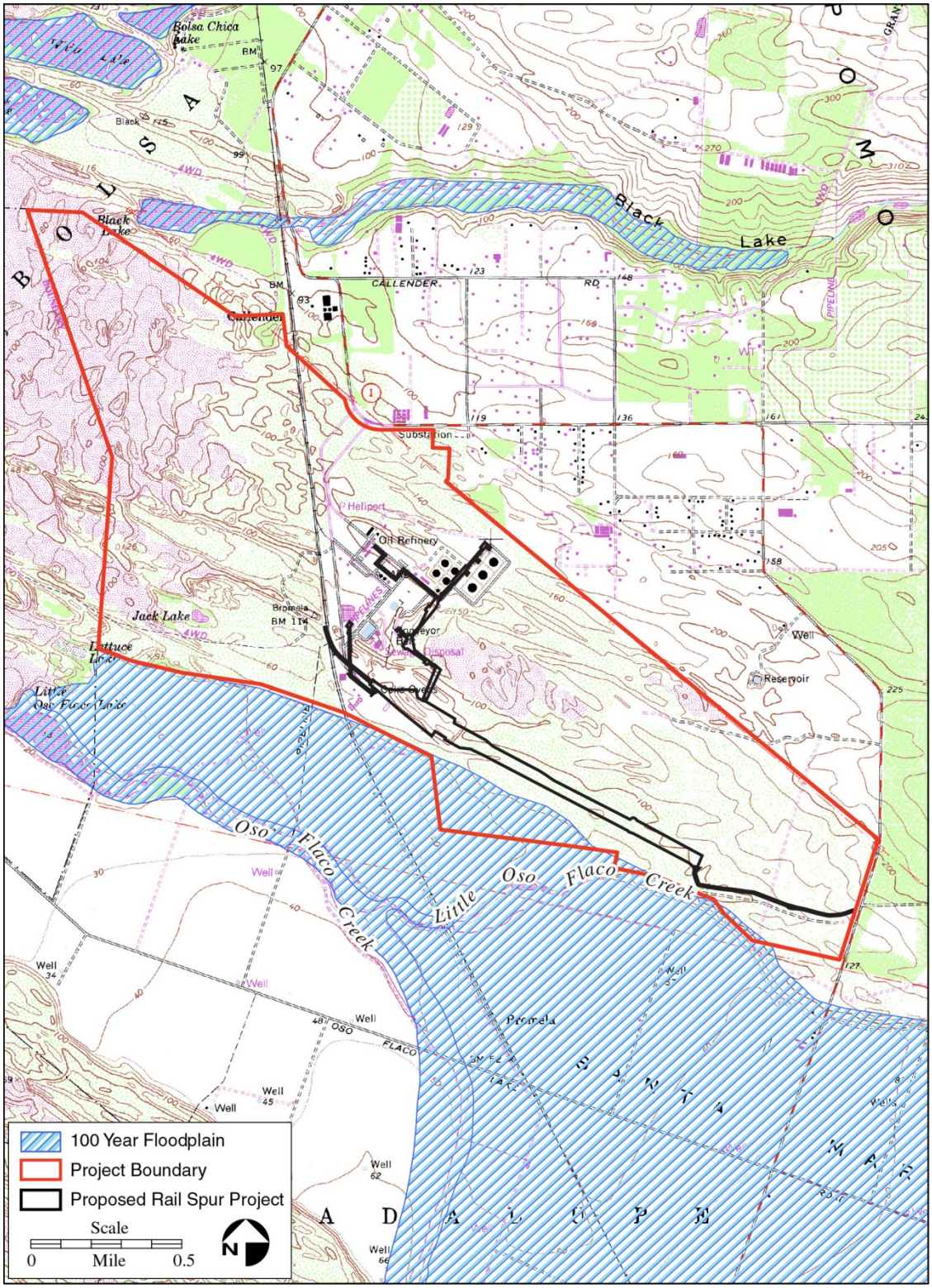
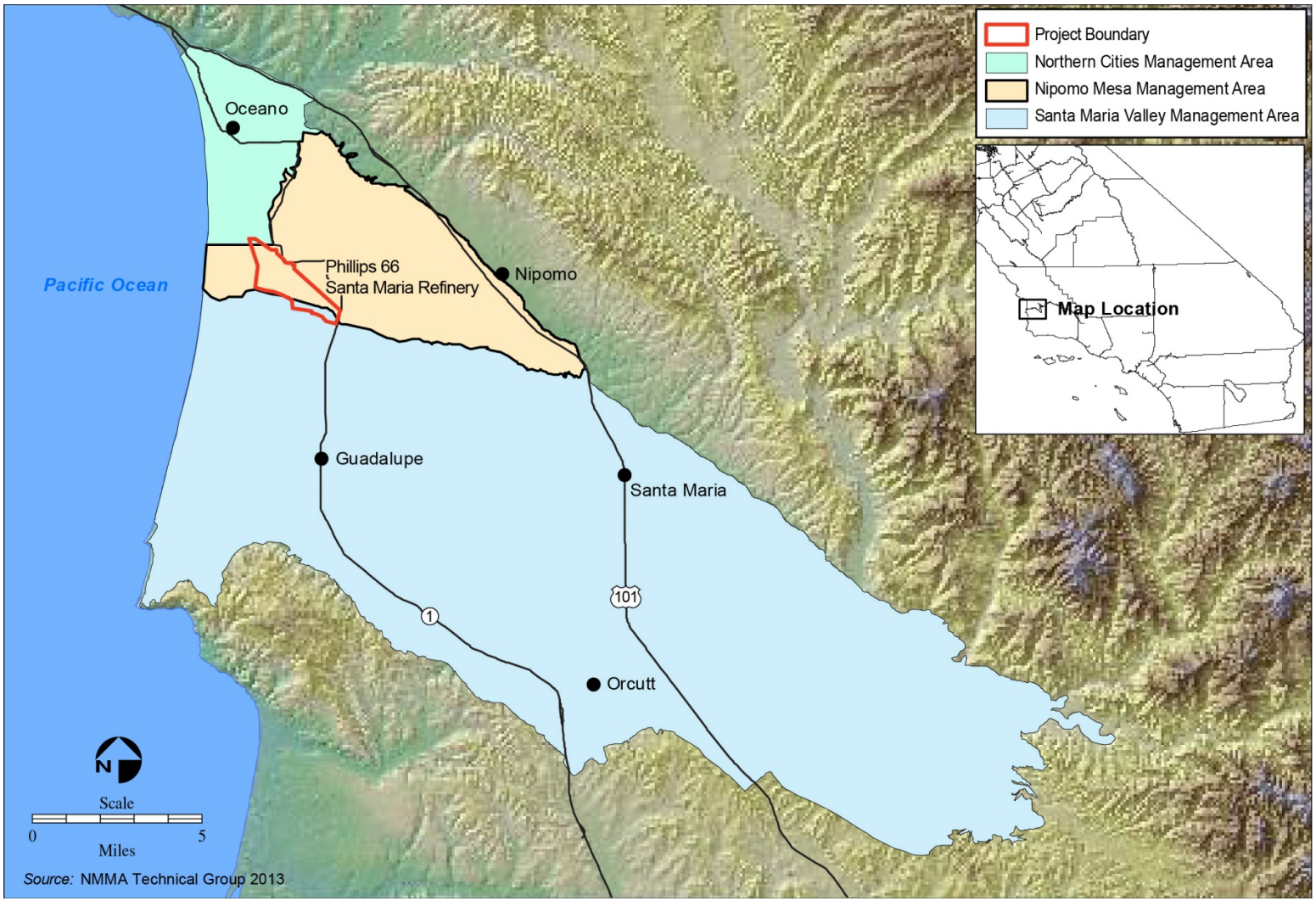


Figure 4.13-3 Santa Maria Groundwater Basin and Management Areas



The Santa Maria Refinery obtains all of its water from onsite groundwater wells. Water is primarily used for cooling, boiler feed for steam production, and process use such as coke drum cutting. The SMR currently uses less water than it has historically because of two changes:

- The installation of a reverse osmosis water treatment unit, which requires less water than the water softener unit it replaced; and
- The March 2007 shutdown of the Carbon Plant (i.e., the calciner) that used water for cooling coke from the calcine process and green coke screening.

Prior to the calciner shutdown, the facility used approximately 459 million gallons of groundwater per year (1,410 acre-feet per year [AFY]). Currently, usage is estimated to be 358 million gallons of groundwater per year (1,100 AFY). With approved increased throughput at the Santa Maria Refinery, water use is projected to increase to 362 million gallons of groundwater per year (1,110 AFY) (MRS 2012).

The Santa Maria Groundwater Basin has been the subject of extensive litigation due to depression in groundwater elevations within the Basin and on the Nipomo Mesa. The County's Water Resources Advisory Committee has determined that overdraft in the Nipomo Mesa either currently exists or is imminent. Based on the Judgment after Trial of the Santa Maria Groundwater Litigation, Phillips 66 has rights to the reasonable and beneficial use of groundwater without limitation, except in the event of a Severe Water Shortage Condition, in which case water rights would be limited to no more than 110 percent of the highest amount it previously used in a single year.

4.13.1.4 Groundwater Quality

One of the main threats to groundwater in the NMMA is the potential for seawater intrusion in the coastal portions of the aquifer. Evaluating seawater intrusion risk depends on knowledge of the groundwater levels, depth of the aquifers, structural geology/stratigraphy, and the location of the seawater-freshwater interface. The potential for seawater intrusion is minimized when there is sufficient subsurface groundwater flow toward the ocean, which can be monitored using groundwater elevations to determine the offshore gradient. If the onshore aquifers are pumped in excess of replenishment, the groundwater flow direction could reverse and seawater intrusion could eventually occur (NMMA TG 2013). However, a substantial lag time may be present between excessive pumping-induced groundwater gradient reversal and seawater intrusion into the freshwater aquifer.

A series of coastal sentry wells are monitored regularly for seawater intrusion and reported publicly. To date, there has been no increase in chloride concentrations (indicative of seawater intrusion) in the coastal sentry wells. The 2012 NMMA report concluded that there is no evidence of seawater intrusion in the NMMA portion of the Santa Maria Groundwater Basin (NMMA TG 2013).

Groundwater quality monitoring has identified localized areas of the NMMA with nitrate concentrations as high as 90 percent of the Maximum Contaminant Level and overall rising nitrate concentrations in groundwater. Nitrate contamination can occur beneath agricultural lands

as a result of leaching of fertilizer-rich soil into underlying groundwater. One of the Phillips 66 wells reported a high (1,000 mg/l) total dissolved solids (TDS) concentration, which exceeds secondary drinking water standards. However, the well is only used for industrial processing (Carollo 2012).

4.13.1.5 Mainline Rail Routes

Trains could enter California at least five different locations (one at the north end of the state from Oregon, two at the northeast from Nevada, one at the southeast from Nevada, and one at the south from Arizona). See Figure 2-8 for the location of the various UPRR rail routes to the SMR.

Depending upon the route taken by the train they could arrive at the SMR from the north or the south. It is unknown what route UPRR would use to deliver the trains to the SMR. Coming from the north the routes merge at the UPRR Roseville Rail Yard. From the south the routes merge at the Colton Rail Yard. Also, crude oil delivered to California by UPRR would generally pass through either of these two rail yards in route to the SMR. Depending upon the source of the crude oil, crude oil trains could use any portion of the UPRR network between Roseville/Colton and the source location for the crude oil. The exact route that would be taken would depend upon a number of factors, that could include the source of the crude oil, weather conditions, train traffic conditions, etc. Since the routes past Roseville and Colton to the California Border are somewhat speculative, the EIR has discussed in a more qualitative nature the potential water resource impacts of train traffic beyond these two rail yards.

As illustrated in Figures 4.13-4 through 4.13-9 and summarized in Tables 4.13-1 and 4.13-2, the northern and southern UPRR mainline track from the SMR to Roseville and Colton, respectively, would traverse numerous creeks, rivers, and sloughs. In addition, the routes are in proximity to numerous lakes and marine waters. The figures and summary tables do not include ephemeral creeks, of which there are many along the railroad routes. Designation of perennial creeks is based on the USGS National Hydrographic Dataset (USGS 2014). Designation of other water bodies is a compilation of data from the National Hydrographic Dataset and Google Maps (Google 2014). Beneficial uses of these water bodies are variable. For example, the eastern route from Fremont to Sacramento traverses two water supply aqueducts, the California Aqueduct and the Delta-Mendota Canal, as well as numerous creeks and rivers that are tributary to Sacramento-San Joaquin River Delta water supplies, which provide drinking water to much of California (Figure 4.13-5). Whereas, the western route from Fremont to Sacramento traverses and/or runs adjacent to biologically sensitive sloughs north of Suisun Bay and southeast San Francisco Bay. This route also runs immediately adjacent to marine resources of San Pablo Bay, Richmond Inner Harbor, and Oakland Inner Harbor. Similarly, the northern mainline route lies adjacent to sensitive biological resources of Elkhorn (and related) sloughs, located east of Monterey Bay (Figure 4.13-7); the Dune Lakes near the Santa Maria Refinery; and the Andree Clark Bird Refuge and Carpinteria Marsh in the Santa Barbara area (Figure 4.13-8).

Figure 4.13-4 Index Map of Figures 4.13-5 through 4.13-9

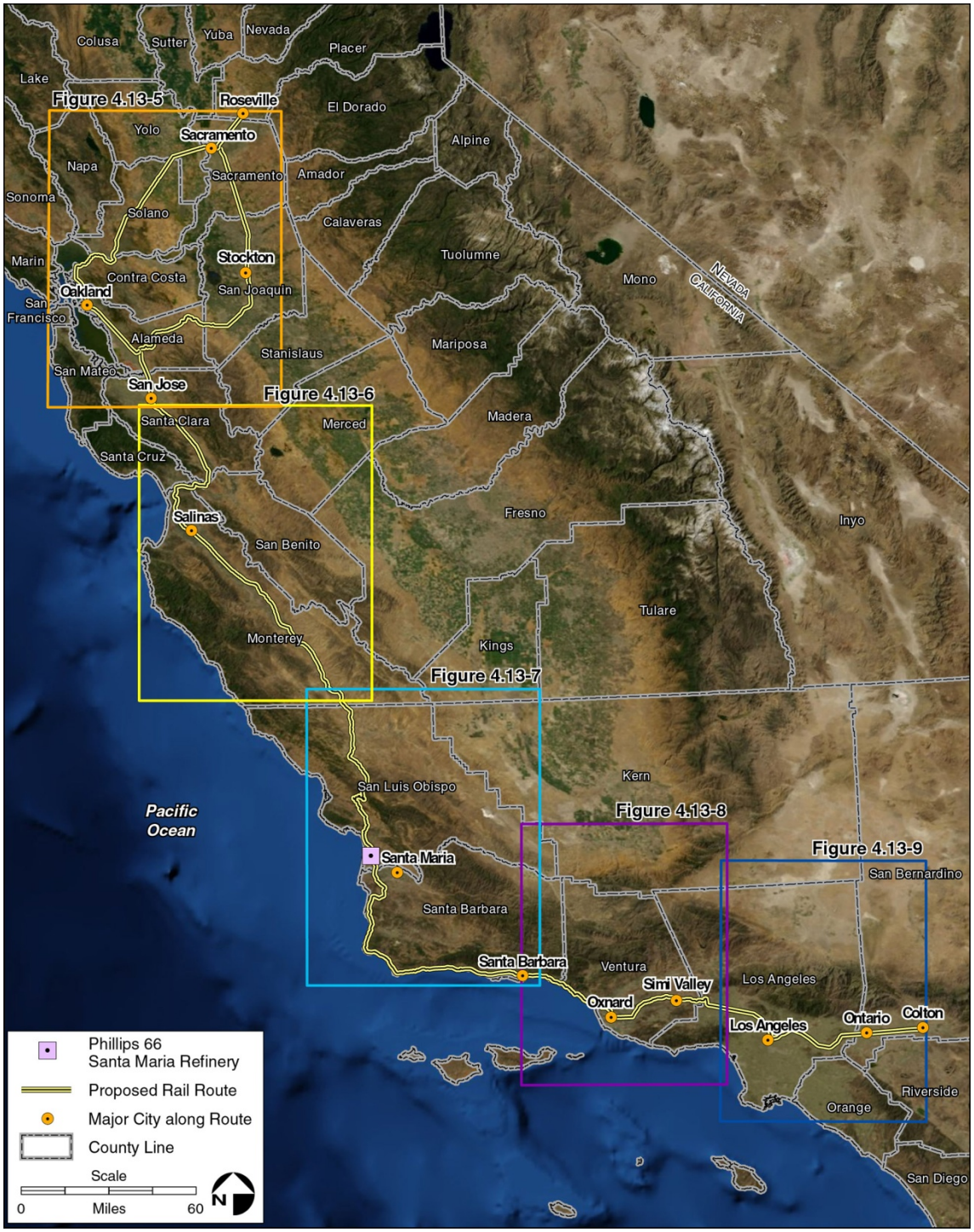


Figure 4.13-5 Mainline Route Water Bodies, Roseville to San Jose

Figure 4.13-6 Mainline Route Water Bodies, San Jose to South Monterey County

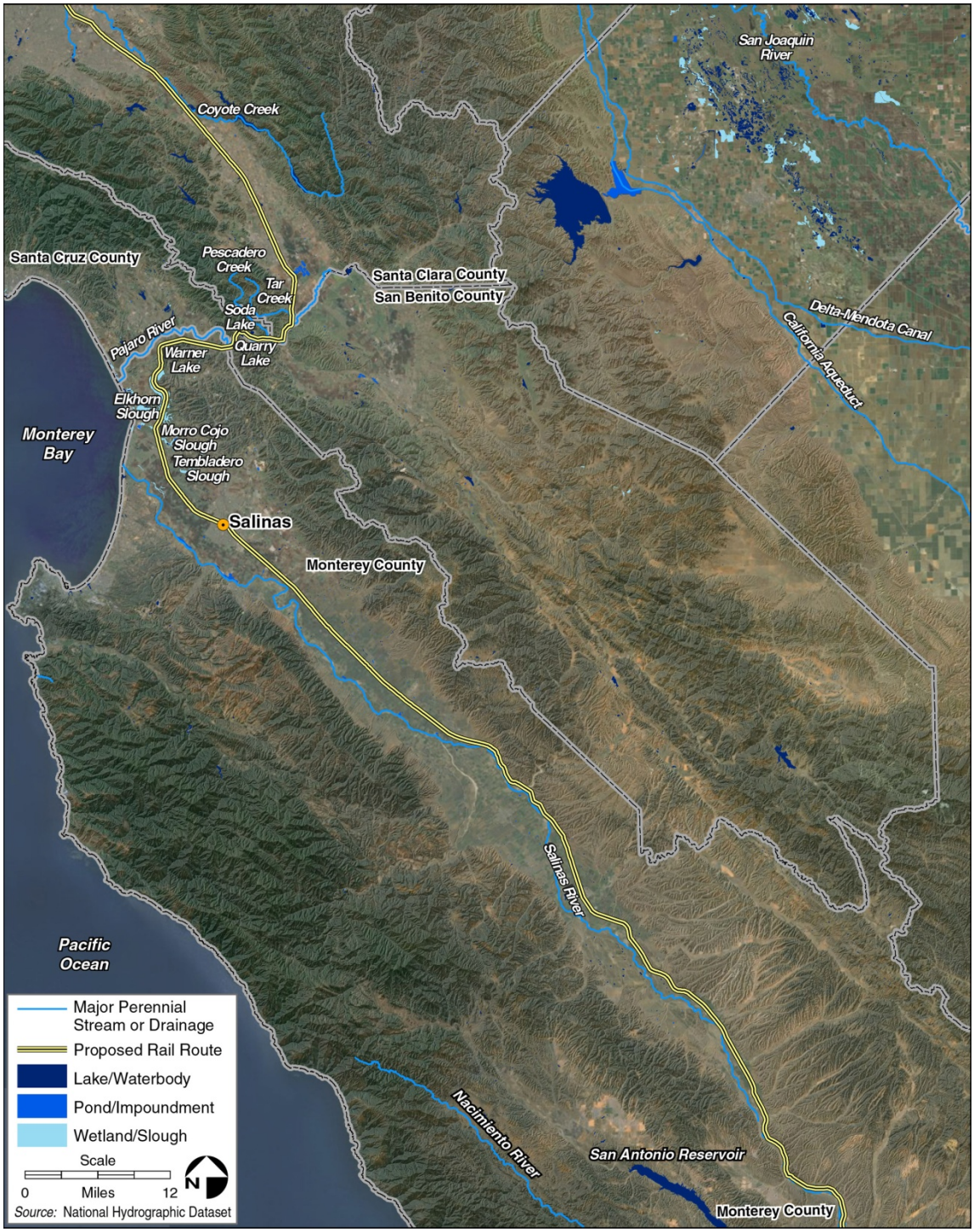


Figure 4.13-7 Mainline Route Water Bodies, South Monterey County to Santa Barbara

Figure 4.13-8 Mainline Route Water Bodies, Santa Barbara to San Fernando Valley

Figure 4.13-9 Mainline Route Water Bodies, San Fernando Valley to Colton

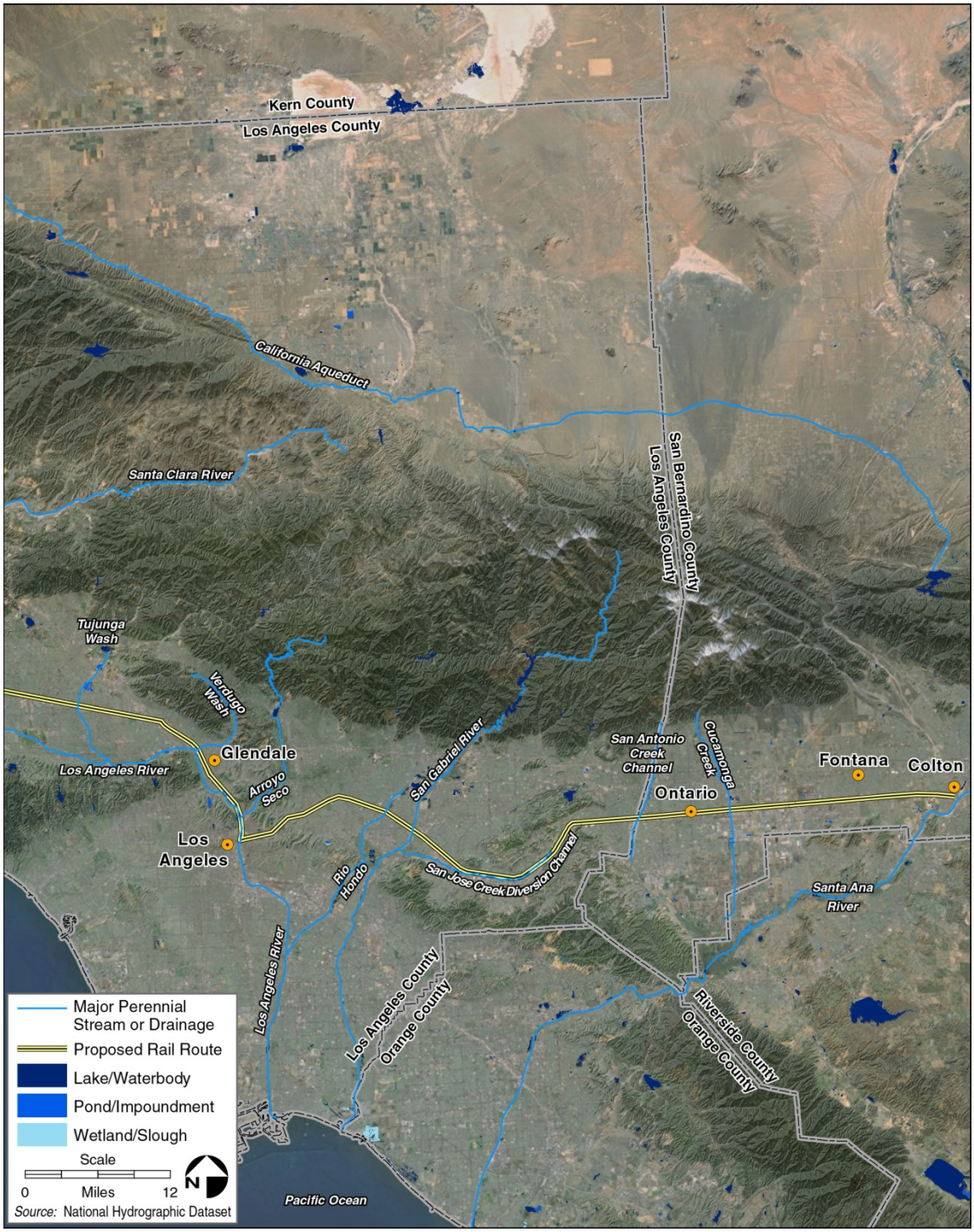


Table 4.13.1 Perennial Streams, Rivers, Lakes, Sloughs, and Major Drainage Features along Proposed Mainline Route from Santa Maria Refinery to Roseville

Location	Water Body	Closest Distance and Direction from Rail Route
Santa Maria Refinery North to Fremont		
North of Santa Maria Refinery	Dune Lakes: (Bolsa Chica, Pipeline, Oso Flaco, Jack, Big Twin, White, Hospital, Small Twin, Little Oso Flaco, Mud, Celery, and Black lakes)	400 feet west
Pismo Beach	Arroyo Grande Creek	Crosses route
Pismo Beach	Pacific Ocean	1,500 feet west
Pismo Beach	Meadow Creek	Crosses and runs parallel to route
Pismo Beach	Pismo Lake	50 feet east
North of Pismo Beach	Pismo Creek	Crosses and runs parallel to route
San Luis Obispo	San Luis Obispo Creek	Crosses route
North of San Luis Obispo	Stenner Creek	Crosses and runs parallel to route
Atascadero to south of Salinas	Salinas River	Crosses and runs parallel to route
North of Paso Robles	Nacimiento River	Crosses route
Salinas to Castroville	Tembladero Slough	Crosses and runs parallel to route
North of Castroville	Morro Cojo Slough	Crosses and runs parallel to route
Moss Landing	Elkhorn Slough	Crosses and runs parallel to route
South of Watsonville	Warner Lake	200 feet east
South and east of Watsonville	Pajaro River	Crosses and runs parallel to route
East of Watsonville	Quarry Lake	100 feet southwest
East of Watsonville	Soda Lake	600 feet northeast
East of Watsonville	Pescadero Creek	Crosses route
South of Gilroy	Tar Creek	Crosses route
San Jose	Guadalupe River	Crosses route
San Jose area	Coyote Creek	Crosses and runs parallel to route
South end of San Francisco Bay	Guadalupe, Mud, and Alviso sloughs	700 feet southwest
Fremont	Lake Elizabeth	100 feet west
West Route – Fremont North to Sacramento		
Fremont	Alameda Creek	Crosses and runs parallel to route
Fremont	Quarry Lakes	100 feet southwest
Hayward	San Lorenzo Creek	Crosses route
San Leandro	San Leandro Creek	Crosses route
Oakland	Oakland Inner Harbor	300 feet southwest
Berkeley	San Francisco Bay	100 feet southwest
Richmond	Richmond Inner Harbor	200 feet west
Richmond	Wildcat Creek	Crosses route
Richmond	San Pablo Creek	Crosses route
North Richmond area	San Pablo Bay	Less than 50 feet north and northwest
North Richmond area	Pinole Creek	Crosses route
Valona to Benicia	Carquinez Strait	Crosses and runs parallel to route
Benicia to Fairfield	Suisun Bay	1,500 feet southeast
Benicia to Fairfield	Cordelia Slough	Crosses and runs parallel to route
East of Vacaville	Alamo Creek	Crosses route
Northeast of Vacaville	Gibson Canyon Creek	Crosses route
Northeast of Vacaville	Sweany Creek	Crosses route
Davis	Putah Creek	Crosses route
West of Sacramento	Tule Canal	Crosses route

Table 4.13.1 Perennial Streams, Rivers, Lakes, Sloughs, and Major Drainage Features along Proposed Mainline Route from Santa Maria Refinery to Roseville

Location	Water Body	Closest Distance and Direction from Rail Route
Sacramento	Sacramento River	Crosses route
Between Davis and Sacramento	Yolo Bypass Wildlife Area	Crosses route
East Route – Fremont North to Sacramento		
East of Fremont	Alameda Creek	Crosses and runs parallel to route
Livermore	Lake Boris/Heron Pond	200 feet south
Southwest of Tracy	California Aqueduct	Crosses route
Southwest of Tracy	Delta-Mendota Canal	Crosses route
East of Tracy	Tom Paine Slough	Crosses and runs parallel to route
East of Tracy	Oakwood Lakes	300 feet southeast and northwest
East of Tracy	San Joaquin River	Crosses and runs parallel to route
South of Stockton	French Camp Slough	Crosses route
Stockton	Calaveras River	Crosses route
North Stockton	Bear Creek	Crosses route
North Lodi	Mokelumne River	Crosses route
South of Elk Grove	Cosumnes River	Crosses route
Southeastern Sacramento	Beacon Creek	Crosses route
Southeastern Sacramento	Morrison Creek	Crosses route
North Sacramento	American River	800 feet northeast
Sacramento North to Roseville		
North Sacramento	American River	Crosses route
North Sacramento	Arcade Creek	Crosses route
Roseville	Dry Creek	Crosses route

Table 4.13.2 Perennial Streams, Rivers, Lakes, Sloughs, and Major Drainage Features along Proposed Mainline Route from Santa Maria Refinery to Colton

Location	Water Body	Closest Distance and Direction from Rail Route
Santa Maria Refinery South to Los Angeles		
Guadalupe	Santa Maria River	Crosses route
North Vandenberg Air Force Base (AFB)	San Antonio Creek	Crosses route
Central Vandenberg AFB	Santa Ynez River	Crosses route
South Vandenberg AFB	Honda Creek	Crosses route
South Vandenberg Air Force Base	Pacific Ocean	200 feet west and southwest
South of Vandenberg AFB	Jalama Creek	Crosses route
Vandenberg AFB to Goleta	Pacific Ocean	100 feet south
Vandenberg AFB to Goleta	Arroyo El Bulito	Crosses route
Vandenberg AFB to Goleta	Tajiguas Creek	Crosses route
East Santa Barbara	Andree Clark Bird Refuge	100 feet south
East Santa Barbara	Pacific Ocean	50 feet south
Carpinteria	Carpinteria Marsh	50 feet south
Carpinteria	Pacific Ocean	200 feet south
Carpinteria to Ventura	Pacific Ocean	100 feet southwest
Ventura	Ventura River	Crosses route
Ventura/Oxnard boundary	Santa Clara River	Crosses route
East of Oxnard	Revolon Slough	Crosses route
Northeast of Camarillo	Calleguas Creek	Less than 50 feet southeast
Moorpark to Simi Valley	Arroyo Las Posas	Crosses and runs parallel to route
Simi Valley	Arroyo Simi	Crosses and runs parallel to route
Chatsworth	Browns Canyon Wash	Crosses and runs parallel to route
Northridge	Aliso Canyon Wash	Crosses Route
Van Nuys	Tujunga Wash	Crosses Route
Glendale	Verdugo Wash	Crosses Route
Glendale to east of downtown Los Angeles	Los Angeles River	Less than 50 feet west
North of downtown Los Angeles	Arroyo Seco	Crosses Route
Los Angeles East to Colton		
El Monte	Rio Hondo	Crosses Route
El Monte	San Gabriel River	Crosses Route
Rowland Heights to Diamond Bar	San Jose Creek Diversion Channel	Crosses and runs parallel to route
West Ontario	San Antonio Creek Channel	Crosses Route
East Ontario	Cucamonga Creek	Crosses Route

Beneficial uses of rivers, perennial creeks, and ephemeral creeks (not included in the tables or figures) traversed by the northern and southern mainline routes include municipal and domestic supply; estuarine habitat; wildlife habitat; preservation of biological habitats of special significance; rare, threatened, or endangered species; migration of aquatic organisms; spawning, reproduction, and/or early development; areas of special biological significance; agricultural supply; groundwater recharge, and recreation. Existing water quality is variable depending on the degree of urbanization and/or agricultural activity within each watershed.

4.13.2 Regulatory Setting

4.13.2.1 Federal Policies and Regulations

Federal Clean Water Act (33 U.S.C. ss/1251 et seq.)
The 1972 Federal Water Pollution Control Act and its 1977 amendments, collectively known as the Clean Water Act (Act), established national water-quality goals and the basic structure for regulating discharges of pollutants into the waters of the United States. The Act also created a National Pollutant Discharge Elimination System (NPDES) of permits that specified minimum standards for the quality of discharged waters. It required states to establish standards specific to water bodies and designated the types of pollutants to be regulated, including total suspended solids and oil. The Act authorized the U.S. Environmental Protection Agency (EPA) to issue the NPDES permits.

Federal Oil Pollution Act
The Oil Pollution Act of 1990 established a single uniform Federal system of liability and compensation for damages caused by oil spills in U.S. navigable waters. The Act requires removal of spilled oil and establishes a national system of planning for and responding to oil spill incidents. It includes provisions to:

- Improve oil-spill prevention, preparedness, and response capability;
- Establish limitations on liabilities for damages resulting from oil pollution;
- Provide funding for natural resource damage assessments;
- Implement a fund for the payment of compensation for such damages; and
- Establish an oil pollution research and development program.

In July of 2014, the USDOT issued an advanced notice of proposed rulemaking covering oil spill response plans for high-hazard flammable trains. The advanced notice of proposed rulemaking would set a lower threshold for when a comprehensive OSRP is required for crude oil trains. Some of the thresholds that are suggested in the notice are 1,000,000 gallons or more per train (approximately 35 car loads), 20 or more car loads, or 42,000 gallons per train. The notice also discusses the possibility of having the OSRP approved by the Federal Rail Road Administration (FRA), conducting training, drills, and equipment testing, and placing oil spill response equipment along rail road tracks.

This advanced notice of proposed rulemaking is currently out for a 90-day comment period. It is expected that the USDOT will eventually issue a notice of proposed rulemaking and adopt some final regulation regarding oil spill response plans for high-hazard flammable trains.

4.13.2.2 State Policies and Regulations

California Porter-Cologne Water Quality Control Act (CWC section 13000 et seq.; CCR Title 23, Chapter 3, Chapter 15)

Since 1973, the California State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs) have been delegated the responsibility for administering permitted discharge into the waters of California. The Porter-Cologne Water Quality Act provided a comprehensive water-quality management system for the protection of California waters and regulated the discharge of oil into navigable waters by imposing civil penalties and damages for negligent or intentional oil spills. Under the Act "any person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state" must file a report of the discharge with the appropriate Regional Water Quality Control Board. Pursuant to the Act, the regional board may then prescribe "waste discharge requirements" (WDRs) that add conditions related to control of the discharge. Porter-Cologne defines "waste" broadly, and the term has been applied to a diverse array of materials, including non-point source pollution. When regulating discharges that are included in the Federal Clean Water Act, the State essentially treats WDRs and NPDES as a single permitting vehicle. In April 1991, the SWRCB and other State environmental agencies were incorporated into the California Environmental Protection Agency.

This Act is the primary State regulation addressing water quality and waste discharges on land. Permitted discharges must be in compliance with the regional Basin Plan that was developed by the Central Coast Regional Water Quality Control Board for Region 3, which includes San Luis Obispo County and the Phillips 66 Rail project area. Each Regional Board implements the Basin Plan to ensure that projects consider regional beneficial uses, water quality objectives, and water quality problems.

The RWQCB regulates urban runoff discharges under the NPDES permit regulations. NPDES permitting requirements cover runoff discharged from point, e.g., industrial outfall discharges, and nonpoint, e.g., stormwater runoff, sources. The RWQCB implements the NPDES program by issuing construction and industrial discharge permits.

Best Management Practices (BMPs) are required as part of a Storm Water Pollution Prevention Plan (SWPPP). The EPA defines BMPs as "schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of Waters of the United States." BMPs include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage" (40 CFR 122.2).

California Impaired Waterbodies

If a project has the potential to discharge directly into a water body listed as impaired due to sedimentation/siltation and/or turbidity, pursuant to Section 303(d) of the Clean Water Act, the

SWPPP must include a Sampling and Analysis Plan (SAP) for Sediment. The purpose of a SAP for Sediment is to determine if BMPs implemented on the construction site are effective for preventing sedimentation impacts. Direct discharge is defined as a point source or conveyance that discharges directly to 303(d) water bodies that does not first flow through a tributary river or stream (that itself is not listed as impaired) or combine with stormwater from offsite in a municipal separate storm sewer system (MS4).

Proposed California Toxics Rule

Water quality criteria for priority toxic pollutants for California inland surface waters, enclosed bays, and estuaries were adopted. These federally promulgated criteria, together with State-adopted designated uses, create water quality standards for California inland waters. This rule satisfies Clean Water Act requirements and fills the need for water quality standards for priority toxic pollutants to protect public health and the environment. The State Water Resources Control Board adopted the "Policy for implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California" in 2000.

Safe Drinking Water and Toxic Enforcement Act of 1986

The Safe Drinking Water and Toxic Enforcement Act provides two ways to administratively list chemicals known to the state to cause cancer or reproductive toxicity. A chemical can be listed if a body considered to be authoritative by the state's qualified experts, such as the EPA or Food and Drug Administration, formally identifies the chemical as causing cancer or reproductive toxicity. A chemical can also be listed if a state or federal agency has formally required labeling or identified that chemical as causing cancer or reproductive toxicity. The criteria for listing these chemicals are outlined in 22 CCR Section 12902.

Groundwater Management Act of 1992

The Groundwater Management Act, commonly referred to as Assembly Bill (AB) 3030, is designed to provide local public agencies with increased management authority over groundwater resources. Groundwater is a valuable natural resource within California and AB 3030 ensures safe production and quality by encouraging local agencies to work cooperatively to manage groundwater resources within their jurisdictions (Water Code Section 10750).

Senate Bill 610, Water Supply Assessment

Senate Bill (SB) 610 was passed on January 1, 2002, amending California law to require detailed analysis of water supply availability for large development projects. The primary purpose of SB 610 is to improve the linkage between water and land use planning by ensuring greater communication between water providers and local planning agencies, and ensuring that land use decisions for certain large development projects are fully informed as to whether sufficient water supplies are available to meet project demands. The lead agency for the project is required to identify the public water system that might supply water to the project and then to request a Water Supply Assessment from the water supplier. If there is no public water system and the project meets the definition of "project" as defined in SB 610, then the lead agency must prepare the assessment.

Senate Bill (SB) 861 Oil Spill Prevention and Response

In 2014, Governor Brown expanded California's oil spill prevention and response program to cover all statewide surface waters at risk of oil spills. This expansion provided funding for industry preparedness, spill response, and continued coordination with local, state and federal government along with industry and non-governmental organizations. Senate Bill 861 authorized the Office of Spill Prevention and Response (OSPR) with the statewide expansion and regulatory oversight. The key objectives are:

- Target critical locations to stage spill responders and equipment for the best response to rail and pipeline incidents;
- Develop effective regulations in close collaboration with local government, non-governmental organizations, and industry;
- Implement regulations that will guide industry, local and state government, and the public and build relationships with local governments through workshops and presentations;
- Create inland response plans that have the depth and breadth of the marine Area Contingency Plans; and,
- Work with communities to build a strong response spill team.

The changes would apply to railroads, pipelines, and oil well/production facilities. These facilities will be required to have oil spill contingency plans. The legislation also requires announced and unannounced drills to test response and cleanup operations, equipment, contingency plans, and procedures. All elements of the plan must be excised at least one very three years. Operators of covered facilities must be able to demonstrate financial resources to pay for spill response and damages based upon a reasonable worst case spill volume.

The regulation requires a six and one-half cent per barrel tax on crude oil and petroleum products received at refineries or marine terminals within California to cover the cost of the expanded oil spill response program. The current time line for adopting the final implementation regulations is fall of 2014 (OSPR 2014).

4.13.2.3 Local Policies and Regulations

San Luis Obispo County

The Stormwater Management Program (SWMP) was prepared by the County of San Luis Obispo to comply with mandatory requirements of the U.S. Environmental Protection Agency NPDES Phase II Final Rule and the State Water Resources Control Board Water Quality Order No. 2003-0005-DWQ, NPDES General Permit No. CA CAS000004, "Waste Discharge Requirements for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems" (MS4 General Permit). The NPDES Phase II Final Rule was adopted in December 1999 and requires operators of small municipal separate storm sewer systems (MS4s) located in designated urbanized areas and in areas meeting certain regulatory criteria to develop and implement SWMPs.

The San Luis Obispo County Water Resources Division is the County's management authority to ensure sustainable water uses, reliable water supplies, and better water quality. The Water

Resources Division has incorporated the Integrated Regional Water Management Plan, which promotes coordination with statewide water planning efforts.

4.13.3 Significance Criteria

The following significance criteria for Water Resources have been derived from the CEQA Guidelines (Appendix G, Environmental Checklist Form, Section IX), as well as the San Luis Obispo County Environmental Checklist. Impacts of the proposed Project would be considered significant and would require mitigation if the Project would:

- Violate any water quality standards or waste discharge requirements;
- Discharge into surface waters or otherwise alter surface water quality (e.g., turbidity, sediment, temperature, dissolved oxygen, etc.);
- Change the quality of groundwater (e.g., saltwater intrusion, nitrogen-loading, etc.);
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide additional sources of polluted runoff;
- Change rates of soil absorption, or amount or direction of surface runoff;
- Change the drainage patterns where substantial on- or off-site sedimentation/ erosion or flooding may occur;
- Involve activities within the 100-year flood zone;
- Change the quantity or movement of available surface or ground water;
- Adversely affect community water service provider; or,
- Expose people to a risk of loss, injury or death involving flooding (e.g., dam failure, etc.), or inundation by seiche, tsunami or mudflow.
- Impacts due to an accidental crude oil spill would be potentially significant if operations would increase the probability or volume of oil spills into the environment.

4.13.4 Project Impacts and Mitigation Measures

Impact #	Impact Description	Phase	Impact Classification
WR.1	Project grading and construction could degrade surface water and groundwater quality.	Construction	Class II

Project demolition, grading, and construction could result in incidental spills of petroleum products or other contaminants that could adversely affect water quality from demolition equipment, excavation and grading equipment, concrete washout, construction chemicals, cleaning solvents, pesticides, and construction debris. Any of these contaminants would potentially impair local surface water runoff.

Incidental spills within the construction area would generally be confined to the Project Site, as there are limited hydrologic connections between the Project Site and Little Oso Flaco Creek, located south of the Rail Spur Project Site. The undulating dune topography has created localized, internally draining basins. The proposed unloading facility would be located on top of a broad, flat graded area, formerly used for processing coke. Precipitation in this area is primarily transported southward as sheet flow to a steep south-facing slope with enclosed, internally draining topography at the base of slope. Oso Flaco Creek is approximately 3,000 feet southwest of the proposed unloading facility.

Little Oso Flaco Creek trends within 500 feet, at the closet point, to the southeastern end of the proposed rail spur. Two broad, southwest-trending drainages emanate from the south side of the proposed rail spur. The western drainage terminates in a depression that has no hydrologic surface connection with Little Oso Flaco Creek. The eastern drainage trends west, parallel to the creek, and terminates in a broad flat area, with no obvious hydrologic surface connection, such as incised gullies or other defined water courses, to Little Oso Flaco Creek. Surface flow appears to occur primarily as sheet flow. Several other internally draining basins are also present in the Project area, along the rail spur alignment and pipeline route, including a large enclosed drainage area located southeast of the SMR, adjacent to the proposed pipeline alignment.

In addition, onsite soils are excessively drained, with a high capacity to vertically transmit water. Due to the high infiltration rates, most of the precipitation on the dune deposits percolates into the soil with minimal runoff, flooding, or ponding, which limit the potential for runoff to flow from the Project Site to Little Oso Flaco Creek. As a result, impacts are considered potentially significant.

Mitigation Measures

In addition to the implementation of mitigation measure GR-2 (Storm Water Pollution Prevention Plan using Best Management Practices), the following measures would further reduce potential construction spill impacts.

WR-1 *During construction, oil and other chemical spills shall be contained and cleaned according to measures outlined in the California Stormwater Quality Association Best Management Practice Handbook. Best Management Practices would likely include, but not be limited, to the following:*

a. Ensure minor spill containment and clean up equipment is readily available in areas of demolition, construction, and operations.

b. Store petroleum products in covered areas with secondary containment dikes.

c. If vehicle maintenance and fueling occur onsite, use a designated area and/or secondary containment, located away from drainage courses, to prevent the run-on of storm water and the runoff of spills.

d. Regularly inspect onsite vehicles and equipment for leaks, and repair immediately.

e. Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.

f. Use absorbent materials on small spills.

Residual Impacts

Implementing mitigation measures GR-2 and WR-1 would reduce construction impacts to surface and groundwater quality to *less than significant with mitigation (Class II).*

Impact #	Impact Description	Phase	Impact Classification
WR.2	A rupture or leak from the tanker rail cars, unloading facility, or oil pipeline during operation of the Rail Spur Project could substantially degrade surface water and groundwater quality.	Operations	Class II

Rail car unloading and conveyance of oil through a proposed aboveground pipeline could result in spills due to geologic hazards, mechanical failure, structural failure, corrosion, or human error. Such spills could potentially result in onsite surface water quality and/or shallow groundwater quality impacts. Small leaks or spills, which are contained and remediated quickly, may have minor or negligible impacts to water resources. In contrast, large spills such as from unloading facility equipment, rail cars, or the oil pipeline, could potentially spread to local drainages and/or groundwater and could degrade water quality, with potential long-term impacts to beneficial uses and biological resources. Although the potential for oil spills currently exists at the SMR, the Rail Spur Project increases the potential for leaks or spills, and associated water quality impacts, due to operation of the unloading facility and associated pipeline.

Given the low speed the trains would be moving at the site (3 mph) it is unlikely that a tank car could be impacted enough to result in a spill. The estimated shell and head puncture velocity of the tank car design proposed for use by the Applicant are 8.3 and 10.3 miles per hour respectively. This is discussed further in the Hazards Section (Section 4.7). In addition, most of the rail spur would be below the surrounding grade (see grading plans in Appendix A). This would help to contain any oil spilled within the rail spur graded area.

The most likely spill related event would be a release during the unloading process due to a loading line failure. The unloading racks are equipped with oil spill drain boxes which would feed below-grade 16-inch-diameter drain lines routed to three parallel 20,000 gallon rectangular storage tanks located in a vault for containment. The total capacity of the containment system would be about 273,000 gallons (this includes the drain boxes, curbed area, pipelines and storage tanks). The containment system has been designed to move any spilled oil away from the rail cars and into the 60,000 gallon storage tanks. The loss of a loading hose could result in a maximum spill of about 27,300 gallons of crude oil (the capacity of one rail car). This system would effectively control spills that would from the loading operations.

Downstream of the two unloading facility meter assemblies, a new 24-inch above ground pipeline would be routed along an existing internal dirt road on the Phillips 66 property between

the unloading facility and the refinery. This pipeline would connect with the existing refinery crude oil storage tanks. The route for this pipeline is shown in Project Description Figure 2-3, and is approximately 3,525 feet in length. This dirt road accommodates periodic on-site traffic only associated with refinery personnel traveling at low-speeds.

The proposed unloading facility would have a maximum crude oil pumping rate of 8,000 gpm. The unloading facility and 24-inch pipeline would be monitored using multiple Programmable Logic Controllers (PLCs) and controlled using the existing refinery Supervisory Control and Data Acquisition (SCADA) system. The SCADA would detect a catastrophic failure of the 24-inch pipeline within one minute, thus limiting pumping losses. However, the drainage of the pipeline would occur, and potentially result in a worst-case spill of about 90,800 gallons of crude oil. This worst case spill would occur where the pipeline connects with unloading pumps since this is the lowest elevation of the pipeline. As one moves up the pipeline toward the storage tanks, the maximum spill volumes decrease, with the smallest spill volumes being near the storage tanks. In the event of a release from the pipeline the oil would drain into the area around the pipeline and unloading racks (see grading plans in Appendix A).

In the unlikely event that a spill got outside the perimeter of the unloading facility it would be generally be confined to the Project Site, as there are limited hydrologic connections between the Project Site and Little Oso Flaco Creek, located south of the Rail Spur Project Site (see discussion in WR.1).

Although some of the more toxic components of oil, e.g., volatile organic compounds would be lost rapidly due to aeration (i.e., volatilization) oil spills could have significant, long-term impacts to onsite surface waters and shallow groundwater quality if they were not cleaned up quickly as onsite soils are generally unconsolidated and permeable and groundwater locally occurs at relatively shallow depths.

Phillips 66 has a number of existing process safety policies and procedures that would apply to the rail project to help prevent and reduce spill related impacts, including equipment and operating procedures. These programs are designed to prevent releases of hazardous materials, minimize risk, and ensure the refinery’s ability to process crude without increasing risk of releases. For example, the Mechanical Integrity Program covers equipment used to process, control, and store hazardous chemicals and assigns responsibility for equipment inspection and testing as well as maintenance. This program meets the requirements of CCR Title 8 Sec 5189, "Process Safety Management of Acutely Hazardous Materials" (f), (j) and 29 CFR 1910.119, "Process Safety Management of Highly Hazardous Chemicals" (j). These programs would be applicable to the operational aspects of this Rail Spur Project.

The refinery uses a Positive Material Identification (PMI) program to ensure the integrity of all mechanical and pressurized systems. This program is overseen by the refinery’s Inspection Supervisor. Any new feedstock coming to the refinery undergoes a complete Management of Change (MOC) analysis to ensure that all hazards, as well as the refinery’s systems are safe and operable. The MOC program is part of the refinery’s Process Safety Management program and tracks equipment modification, addition of new systems and process changes. MOC covers all changes that involve specific chemicals at or above threshold limits as defined in California Code of Regulation, Section 5189, Appendix A or flammable liquids or gasses as defined by

California Code of Regulations, Section 5194(c) including new construction, modifications, changes in chemicals or materials, changes in feedstock, and changes in concentrations, temperatures, pressures, or flow rates outside of established Safe Process Limits.

The refinery is also covered by the California Accidental Release Prevention (CalARP) program, which is designed to prevent accidental releases potentially harming the public and the environment and to satisfy community right-to-know laws. Phillips 66 has prepared the required Risk Management Plan (RMP) to analyze the potential for accidents and development of operating procedures, training and maintenance requirements, compliance audits and incident investigation. The refinery additionally has an approved Spill Prevention, Control and Countermeasure Plan (SPCC). Such actions would contribute in limiting the potential for spills and associated significant impacts.

In the event of a spill, containment facilities and cleanup procedures can reduce the potential impacts of the spill to onsite soils and water resources. Based on the nature of the soils at the SMR, impacts to water quality from a spill could be potentially significant depending on the volume and location of the spill, and the time needed to initiate the response action.

Mitigation Measures

WR-2 *Prior to the County's issuance of a Notice to Proceed, the existing Santa Maria Refinery Spill Prevention Control and Countermeasure Plan (SPCCP) shall be amended to reflect operation of the rail car unloading facility and associated oil pipeline. See mitigation measure BIO-7 for the detailed SPCCP requirements for the rail unloading operations.*

Residual Impacts

Mitigation measures WR-2 would assure that spills are contained within the rail unloading facility and that adequate spill response equipment is at the SMR and that spills are cleaned up quickly, which would reduce impacts to water quality. Implementing mitigation measures WR-2 along with the design features of the rail spur and unloading racks, potential oil spill impacts within the SMR site would reduce spill-related impacts to surface and groundwater quality to *less than significant with mitigation (Class II).*

Impact #	Impact Description	Phase	Impact Classification
WR.3	A rupture or leak from a rail car on the UPRR mainline track could substantially degrade surface water and groundwater quality.	Operations	Class I

The probability of a crude oil train release incident is discussed in the Hazardous and Hazardous Materials Section (Section 4.7). This probability represents the probability of a release incident for the length of the rail routes between the SMR and Roseville or Colton. In order for there to be an impact to surface water, the incident would need to occur in the vicinity of a surface water body. This would lower the probability of an oil train release impacting surface waters.

As illustrated in Figures 4.13-4 through 4.13-9 and summarized in Tables 4.13.1 and 4.13.2, the northern and southern UPRR mainline track from the Santa Maria Refinery to Roseville and Colton, respectively, would traverse numerous creeks, washes, rivers, wetlands, and sloughs. In addition, the routes are located in proximity to numerous lakes and marine waters. Although it is unlikely, derailment of a train could result in the release of crude oil from rail tanker cars, which could cause substantial degradation to surface water and/or groundwater quality depending upon the location of the spill.

As discussed in the Hazards and Hazardous Materials Section (Section 4.7), the worst case spill from a unit train on the mainline tracks was assumed to be 180,000 gallons (about six tanker cars).

In the event of a crude oil spill UPRR would rely first upon local emergency response agencies (police and fire). If needed, UPRR has standing contracts with emergency response firms that are available around the clock to manage any release of crude oil. There are two providers near Phillips 66 Santa Maria Project. One is Patriot Environmental Services, which is located in Santa Ynez, and the other, NRC, is located in Ventura. UPRR maintains spill response contracts with companies throughout their rail network in California. All of the UPRR response firms are rated Oil Spill Response Organization (OSRO) by the State of California and classified Oil Spill Removal Organization by the United States Coast Guard. Depending upon the location, and extent of a spill local response teams, UPRR response personnel and State and Federal response agencies would be involved in the containment and cleanup operations.

The topography or terrain in the area of the oil spill would affect the extent of the potential impacts. Hills, valleys, low areas, and other land features can affect how a release is contained or migrates over the ground surface. A release in an area with a steep slope can accelerate the rate of oil migration and cause the spill to cover a greater area. Releases near low areas or confined valleys could pool and contain the oil and reduce aerial coverage of the release. Spills that flow into a drainage ditch or channel might flow greater distances from the release site due to the funneling of the oil in the channel. Smaller drainage channels generally flow into larger channels, which potentially could empty to a surface water feature, thus increasing the impacts of the spill. A spill released to level, flat ground would generally not migrate as far from the release site. (US State Department 2013).

If released to water, crude oil typically floats on the water's surface. If crude oil is left on the water's surface over an extended period of time, some constituents within the oil will evaporate, other fractions will dissolve, and eventually, some material may descend to the bottom. Oil can sink in the water column as it degrades and mixes with particulates in water. This is particularly true with dilbit[1] crudes. Dilbit crudes will typically submerge in the water column.

In flowing waters, the spreading of the oil in three dimensions creates many challenges for responders to minimize the impacts of the release. Consideration of submerged oil in a flowing water environment would require different response action planning and response equipment to

[1] Dilbit is bitumen mixed with a diluent so it can be transported by pipeline or rail. The diluent is usually a lighter hydrocarbon such as natural gas liquids or naphtha. Dilbit is also known as tar sands oil.

contain and recover the submerged oil. Dilbit intermixed with sediment and trapped in the river and ocean beds and shoreline results in a persistent source of oil and will present new response and recovery challenges. The understanding and adaptation of response and recovery techniques to Dilbit spills in flowing water scenarios continues along the Kalamazoo River in response to the 2010 Enbridge release near Marshall, Michigan. As the response to the Marshall Michigan Dilbit spill continues to mature and evolve, the lessons learned from the response and recovery efforts should be considered to facilitate the implementation of proper response planning and response strategies to improve the overall response to dilbit spills (US State Department 2013)

Spills into water ways and infiltration into groundwater could impact sources of drinking water, threatening water supplies for local populations. Oiling could occur on vegetation and soil along the banks or shore of surface waterbodies.

Wetlands and other natural areas along with their inhabitants (e.g., amphibians, reptiles, fish, and aquatic plants) could be impacted if an oil spill entered these ecological systems. However, compared to flowing surface water systems, an oil plume within a wetlands-like environment typically would migrate slowly, oiling surface vegetation, and wildlife. Additionally, impacts would also occur from the cleanup and response activities.

Depending upon the location of an oil spill along the UPRR mainline tracks, there may be no oil spill containment or cleanup equipment immediately available, and it could take some time for emergency response teams to mobilize adequate spill response equipment. Depending upon the location of the spill this could allow enough time for the spill to impact water resources. Therefore, oil spills along the UPRR mainline tracks could be significant depending upon the location of the spill.

Spill Impacts beyond Roseville and Colton Yards

Beyond the two UPRR Yards, trains could travel any number of routes (refer to Figure 2-8). Also, crude oil delivered to California by UPRR would generally pass through either of these two rail yards in route to the SMR. Depending upon the source of the crude oil, crude oil trains could use any portion of the UPRR network between Roseville/Colton and the source location for the crude oil. The exact route that would be taken would depend upon a number of factors, that could include the source of the crude oil, weather conditions, train traffic conditions, etc.

While the exact route the trains would take to get to these two rail yards is speculative, all of the routes within and outside of California would traverse numerous creeks, washes, rivers, wetlands, and sloughs, which would increase the probability of a spill impacting water resource areas. In the event of a spill impacting sensitive water resources along this portion of the route the impacts could be significant for the same reasons discussed above for the routes between Roseville/Colton and the SMR.

Mitigation Measures

WR-3 Implement mitigation measures BIO-11 and PS-4a through PS-4e.

Residual Impacts

Implementation of mitigation measure BIO-11 and PS-4a through PS-4e would serve to reduce the likelihood of an oil spill and the ability of first response agencies to respond to a crude oil

spill. In particular, PS-4b would require the use of safer tank cars that would reduce the likelihood of a spill in the event of an accident. Even with implementation of these mitigation measures oil spill impacts to water resources along the mainline rail routes would remain significant and unavoidable depending upon the location of the spill.

The County may be preempted by federal law from implementing BIO-11 and PS4a through PS-4e as they require particular contractual provisions that might be determined to improperly impact interstate commerce.

OSPR is currently in the process of implementing the requirements of SB 861, which will require railroads to have detailed oil spill response plans and to conduct oil spill response drills Oil Spill Contingency Plans are due January 1, 2016. However, the timing of when the plans will have to be in place and the drill would start is not yet know. Portions of this legislation as it relates to railroads have been subject to litigation, and it is likely that further litigation by the railroads will occur, since the railroad claim the State is preempted by federal law. If implemented this legislation would improve oil spill response for train derailments that lead to spills.

In addition, the USDOT is evaluating proposed rules that would require rail operators of crude oil trains to have a comprehensive OSRP that addresses may of the same requirements as the plans required by SB 861. If the DOT adopts a final rule covering crude oil trains, it would improve oil spill response for train derailments that lead to spills.

The USDOT has new rules covering enhancements to tank car standards and operational controls for high-hazardous flammable trains, which would include crude oil trains. These new rules would serve to reduce the likelihood of a train derailment and release of crude oil. Section 4.7, Hazards and Hazardous Materials provides additional information on the new USDOT rule.

If and when all these rules are adopted and in place, they would serve to reduce train derailments and improve emergency response in the event of an accident. However, even if all of these regulation are implemented, mainline rail oil spills impacts to water resources along the UPRR mainline tracks could remain s*ignificant and unavoidable (Class I)*, depending upon the location of the spill.

Impact #	Impact Description	Phase	Impact Classification
WR.4	Project operations would result in an increase in the amount of stormwater runoff at the site.	Operations	Class III

Construction of the rail car unloading facility would include construction of a 32,860 square foot canopy. In addition, 1.7 acres of roads would be paved during construction. Such features would increase the amount of impermeable surfaces, resulting in increased stormwater runoff. Left unchecked, increased runoff could cause flooding and cause soil erosion. However, a stormwater detention/percolation basin would be constructed to prevent offsite runoff of increased surface flows from proposed unloading facility canopy. This basin would have a working capacity of about 193,000 gallons, which is more than enough to handle the 100-year

24-hour storm event. Runoff would be collected in downspouts constructed around the perimeter of the canopy and then transmitted to the detention/percolation basin, where the runoff would percolate into the permeable sandy soil.

Runoff from paved roads would be dispersed over the Project Site, i.e., not concentrated, and would percolate into the sandy soils. Similarly, the rail spur bed and adjoining slopes would be compacted, thus reducing infiltration and increasing runoff. However, the runoff would also be dispersed along the length of the rail spur, i.e., not concentrated, and would percolate into the sandy soils. Based on a site reconnaissance of the Project Site, erosive gullying and rilling does not occur, even in sloped, disturbed areas, void of vegetation. Therefore, it is unlikely that increased runoff associated with the Project-related paving would cause flooding or increase erosion. Impacts are considered less than significant.

Mitigation Measures
No mitigation measures are required.

Residual Impacts
Residual impacts would be *less than significant (Class III).*

Impact #	Impact Description	Phase	Impact Classification
WR.5	The Project would not involve activities within the 100-year flood plain.	Construction and Operations	Class III

As indicated in Figure 4.13-2, construction would not occur within the 100 year flood plain. The proposed rail spur and unloading facility are located approximately 500 feet north of the flood plain, at the closest point. Similarly, Project operations would not involve activities within the 100-year flood plain. Therefore, impacts are considered less than significant.

Mitigation Measures
No mitigation measures are required.

Residual Impacts
Residual impacts would be *less than significant (Class III).*

Impact #	Impact Description	Phase	Impact Classification
WR.6	The Project would potentially change the quantity or movement of available ground water or adversely affect a community water service provider.	Construction and Operations	Class III

Operational activities would be expected to increase water use by approximately 250 gallons per day. Construction activities would be short-term and limited in nature, but would require use of water trucks for dust control, soil compaction, and other incidental uses.

Under Senate Bill 610, a proposed project meets the definition of "Project" according to Water Code Section 10912 if it is:

- A proposed residential development of more than 500 dwelling units;
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- A proposed hotel or motel, or both, having more than 500 rooms;
- A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area;
- A mixed-use project that includes one or more of the projects specified in this subdivision; or
- A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project (California DWR 2003).

The SMR is an industrial processing plant occupying more than 40 acres of land. The Rail Spur Project involves the construction of a rail spur extension, unloading facility, and oil pipeline connecting the unloading facility to the refinery. Acreage breakdown (temporary + permanent) are summarized below:

- 41.6 acres – Rail Spur and Unloading Facility (25.3 acres permanent),
- 3.8 acres – New Pipeline (1.8 acres permanent), and
- 1.6 acres – Secondary Emergency Vehicle Access (1.6 acres permanent).

Collectively, the entire project, including temporary and permanent impacts, would affect approximately 47 acres. Of this area, a total of 28.7 acres will be permanently disturbed. Because less than 40 acres of permanent development would occur as part of the Project, the Rail Spur Project would not be considered a "Project" under this SB 610 criterion. In addition, the additional water demand associated with operation of the Rail Spur Project would include an increase in water use of up to 250 gallons per day, which is less than the amount of water required by a single family home. An average single-family dwelling on the Nipomo Mesa would use approximately 460 gallons per day (0.51 AFY) (Water Systems Consulting 2011); therefore, 500 dwellings would use approximately 230,000 gallons per day (260 AFY), or nearly

500 times more water than the Rail Spur Project. Therefore, the Rail Spur Project would not be considered a "Project" under this SB 610 criterion and a Water Supply Assessment would not be required for the Project.

Water use during construction would be vary between 1,000 and 2,000 gallons per day during the grading operations. It is estimated that for the entire construction project about 180,000 gallons of water would be used. This water would be used primarily for dust control and revegetation.

A Water Supply Assessment was completed in 2012 in association with increased throughput at the SMR. The Water Supply Assessment concluded that the total water supplies available during normal, single-dry, and multiple-dry water years, within a 20-year projection, will meet the projected water demand for the Increased Throughput project, based on the Phillips 66 groundwater rights in the Nipomo Mesa Management Area (NMMA), as defined in the Stipulation for the Santa Maria Groundwater Litigation (the Stipulation). In the next 20 years, if a Severe Water Shortage Condition occurs, per the Stipulation, Phillips 66 would have rights to 110 percent of the highest amount of prior groundwater use, or 1,550 AFY. The County of San Luis Obispo and other major water purveyors in the NMMA are bound by the Superior Court of the County of Santa Clara, under the Stipulation to uphold the Phillips 66 SMR rights to use water. With the Increased Throughput Project water demand at the SMR would be up to 1,111 AFY. The proposed Rail Spur Project would increase water demand by 250 gallons per day, or 0.3 AFY. With the Rail Spur and Throughput Increase Projects water demand at the SMR would be 1,111.3 AFY, which would be less than the 1,550 AFY of water available for SMR use under the Stipulation.

The estimated water demand in the NMMA in 2013 was about 16,349 AF (NMMA 2014), and the Rail Spur Project would only increase demand by 0.3 AFY. Therefore, water supply related impacts are considered less than significant. This finding is based on the groundwater rights of ConocoPhillips, as defined in the Stipulation. San Luis Obispo County is a signed party to the Stipulation and is bound by the water management agreement to comply with each and every term, which includes upholding ConocoPhillips groundwater rights.

This should not be interpreted that there is sufficient supplies for all purveyors in the NMMA to meet their future demands for the next 20 years. Overall, the NMMA is in a Potentially Severe Water Shortage condition. The Stipulation requires the other water purveyors in the NMMA (i.e., NCSD, GWSC, Woodlands, RWC) to purchase and transmit supplemental water to improve the water conditions in the NMMA.

Mitigation Measures

Because impacts would be less than significant, mitigation measures are not required. However, the following mitigation measures would further reduce the potential for adverse impacts:

WR-6 *If possible, the Applicant shall use recycled water for construction and operational activities to reduce impacts to local groundwater supplies. Recycled water could be generated onsite and/or secured via truck transport or water pipeline from the South San Luis Obispo County Sanitation District.*

Residual Impacts

Residual impacts would be *less than significant (Class III).*

4.13.5 Cumulative Analysis

Water Quality

The region of influence for water quality impacts associated specifically with the Rail Spur Project Site would be limited to those cumulative projects located within the watershed of Oso Flaco Creek, which include grading/construction and/or oil processing/transportation. Although located within the Santa Maria Valley, Oso Flaco Creek is not part of the Santa Maria River Watershed. The creek originates in agricultural fields north of the Santa Maria River Estuary. Land use within the watershed is primarily irrigated vegetable row crops, but does include some of the cumulative projects listed in Table 3.1. Oil processing/transport related projects includes the SMR Increased Throughput Project, SMR Removal of Soil and Debris Mound Project, and the southern end of the Phillips 66 pipeline between Price Canyon Oil Field and the SMR. The Northern Santa Barbara County oil development project would not be in this watershed. Potential spills within the Oso Flaco Creek watershed associated with ongoing operation of the SMR and proposed increased throughput to the SMR as a result of construction of the Phillips 66 Price Canyon pipeline, could result in adverse water quality impacts. Potential oil spills occurring as a result of Project completion could cumulatively contribute to those impacts. However, because of the limited hydrologic connection between the Project Site and Little Oso Flaco Creek, the severity of impacts associated with potential oil spills from the Rail Spur Project, the Project's contribution to the cumulative degradation of Little Oso Flaco Creek would be cumulatively significant but feasibly mitigated (Class II) with implementation of mitigation measures and Project components designed to minimize and remediate such spills.

Cumulative projects involving grading and construction within the Oso Flaco Creek watershed include the Sheridan Properties industrial development. This project would involve concrete/asphalt paving and/or landscaping, which, in the absence of Best Management Practices, could result in runoff of polluted runoff and additional degradation of Oso Flaco Creek. Similarly, contaminated runoff could occur as a result of removal of the soil and debris mound at the SMR. Potential incidental spills of petroleum products and hazardous materials occurring as a result of Project grading and construction could also result in contributions to cumulative water quality impacts to the watershed. Oso Flaco Creek and its tributary Little Oso Flaco Creek are listed by the Environmental Protection Agency as 303D Impaired Water Bodies, based on high levels of fecal coliform, nitrates, and sediment toxicity from agriculture and contaminated groundwater. The pollutant load contribution of the cumulative projects could result in cumulatively significant but feasibly mitigated (Class II) impacts on water quality within the Oso Flaco Creek watershed.

The County of San Luis Obispo Public Works Department maintains a Stormwater Management Program (SWMP), in accordance with the EPA's NPDES Phase II stormwater quality regulations. The County submits an Annual Report to the Central Coast RWQCB summarizing programs that protect the water quality of the creeks and ocean. The SWMP provides an integrated approach for prevention of pollution from stormwater runoff in the County. The program relies heavily on public education and outreach and public participation and

involvement to prevent pollution problems at the source. In addition, in accordance with CEQA, cumulative impact analyses would be completed for all cumulative projects in the watershed. Appropriate mitigation measures would be applied to each cumulative project in an effort to reduce potentially significant water quality impacts within the Oso Flaco Creek watershed to less than significant.

Water Supply

The total water supplies for other planned future uses within the NMMA are not sufficient to meet future demands without the addition of supplemental water. Therefore, buildout of cumulative projects listed in Table 3.1 that are in the NMMA could potentially result in significant cumulative water supply impacts. The Northern Santa Barbara County oil development project are not located within the NMMA.

Pursuant to the Stipulation, potentially Severe Water Shortage Conditions require voluntary conservation measures from the water purveyors in the NMMA (not including Phillips 66). The NMMA Technical Group determined that Potentially Severe Water Shortage Conditions existed in 2008, 2009, 2010, 2011, 2012, and 2013. The continued Potentially Severe Water Shortage Conditions suggest that supplies are not sufficient to meet demands. The projected growth in production by 2030 will likely not be possible without the purchase of supplemental water. The NMMA Technical Group has recommended that the Nipomo Supplemental Water Project be implemented as soon as possible. In addition, the County of San Luis Obispo has restricted future production by Ordinance 3090 (adopted May 2006), whereby new dwelling units must pay a supplemental water charge. The voluntary conservation measures required by the Well Management Plan, the Nipomo Supplemental Water Project, and County Ordinance 3090 have been undertaken to prevent Severe Water Shortage Conditions in NMMA. In the event that Severe Water Conditions develop prior to implementation of the Nipomo Supplemental Water Project, water users other than Phillips 66 in the NMMA would implement mandatory conservation measures, per the Well Management Plan developed as part of the Stipulation. The Well Management Plan provides the conservation steps to be taken by Nipomo Community Services District, Golden State Water Company, Woodlands, and Rural Water Company to improve the water conditions in the NMMA. The management actions required under the Stipulation, including the Well Management Plan and the Nipomo Supplemental Water Project, protect the overall groundwater resources in the NMMA.

According to the Stipulation, the Phillips 66 SMR has no limit to the beneficial and reasonable use of groundwater unless there is a Severe Water Shortage Condition. In the next 20 years, if a Severe Water Shortage Condition occurs, per the Stipulation, Phillips 66 would have rights to 110 percent of the highest amount of prior groundwater use (1,550 AFY). Water demand associated with the Rail Spur Project would not exceed those water rights, therefore, the Project would not contribute to potentially significant cumulative water supply impacts in the NMMA. San Luis Obispo County and all major water purveyors in the NMMA are signed parties to the Stipulation and are bound by the water management agreement to comply with each and every term, which includes upholding Phillips 66 groundwater rights.

In the event of potentially severe to severe climatic drought conditions (as defined in the NMMA Technical Group Water Shortage Condition and Response Plan) other water purveyors in the

NMMA (not including the Applicant), would reduce water use through voluntary and mandatory conservation measures, according to the Well Management Plan. In addition, as required by the Stipulation, other water purveyors in the NMMA, led by the Nipomo Community Services District, are planning to construct a pipeline to deliver supplemental water to the area to reduce or alleviate any future water shortages. Per the Stipulation, the Applicant is not required to participate in the Well Management Plan or Supplemental Water Project. These requirements of the Stipulation were designed to protect the groundwater resources of the NMMA and contribute in reducing cumulative water supply impacts.

Cumulative Rail Projects

There is the potential for cumulative impacts associated with the crude by rail project discussed in Chapter 3. In conducting the cumulative analysis for crude by rail it has been assumed that the cumulative projects listed in Table 3.1 would use the same rail car tank design as the SMR Rail Spur Project, and that the cumulative crude by rail projects, with the exception of the Phillips Rail Spur Project, would transport a Bakken type crude, which is a worst case assumption.[2] It has also been assumed that all of the Rail Spur Project crude oil trains would use routes discussed below.

If all of the crude by rail projects travel via the UPRR Roseville Rail Yard, then up to eight crude oil trains per day could travel on the stretch of track between Sacramento and the California boarder (two for Valero, one for Kinder Morgan, two for Alon, one for Targa, one for Plains All American, and one for the SMR). From Roseville, rail traffic would likely follow two different routes; one following the I-80 corridor to Reno, Nevada, with the other heading north along the I-5 corridor to Oregon. A third route through the Feather River Canyon was not considered for further analysis.

From Sacramento the crude oil trains servicing the Valero Benicia and Kinder Morgan projects could use the same UPRR tracks as the Rail Spur Project from Sacramento to the Bay Area. This portion of track could have up to four crude oil trains per day (two for Valero, one for Kinder Morgan, and one for the SMR).

From Sacramento the crude oil trains servicing the Alon, Targa, and Plains All American projects could use the same tracks as the Rail Spur Project from Sacramento to Stockton a distance of about 46 miles. This portion of track could have up to five crude oil trains per day (two for Alon, one for Plains All American, one for Targa, and one for the SMR).

This level of crude oil train traffic would increase the probability of an oil spill along these mainline routes. Assuming all of the cumulative crude oil trains use the same route from Sacramento to the California border, the cumulative probability of a 100 gallon or greater oil spill would be about once every seven years for the route from the SMR to the Oregon border, and once every six years for the route from the SMR to the Nevada border. These mainline rail routes pass through areas that include various types of water body crossings. In the event of an

[2] Canadian Crude, as specified in the Project Description, was assumed for the Phillips Rail Spur Project as part of the project and cumulative analysis.

oil spill along this stretch of the mainline rail route, surface and groundwater resources could be impacted.

None of the other cumulative crude by rail projects would use the mainline tracks along the southern route thorough the Los Angeles Basin since the crude oil trains going to Bakersfield would use Tehachapi Pass via Barstow and would not travel has far west as Colton. However, up to four unit trains per day could share the route between Nevada and Barstow (two for Alon, one for Plains All American, and one for the SMR). Assuming these cumulative crude oil trains use the same route from Barstow to the California border, the cumulative probability of a 100 gallon or greater oil spill would be about once every 25 years for the southern route from the SMR to the Nevada border. This mainline rail route pass through areas that include various types of water body crossings. In the event of an oil spill along this stretch of the mainline rail route, surface and groundwater resources could be impacted.

In the event of an accident along these stretches of mainline rail routes, a crude oil spill of significant amounts could occur, potentially impact water resources. Depending upon the location of an oil spill along the UPRR mainline tracks, there may be no oil spill containment or cleanup equipment immediately available, and it could take some time for emergency response teams to mobilize adequate spill response equipment, which could allow enough time for the spill to impact various surface water bodies, as well as plants and animal species that may occur within these habitats. Therefore, oil spills along the UPRR mainline tracks could be cumulatively significant depending upon the location of the spill.

Implementation of mitigation measures PS-4a through PS-4e identified for the Rail Spur Project would reduce the likelihood of an oil spill and the ability of first response agencies to respond to a crude oil spill. In particular, PS-4b would require the use of safer tank cars that would reduce the likelihood of a spill in the event of an accident by approximately 74 percent.

There are a number of cumulative oil development projects in Northern Santa Barbara County (see Table 3.1, Cumulative Project List) that plan to move oil to the Phillips 66 SMPS and then via pipeline to the SMR. In the short-term, depending upon the volume of crude oil received by rail, some of this oil could be displaced and might have to be trucked to other refinery destinations. Any displaced crude oil would likely be sold to other refineries in the Los Angeles basin. The amount, location, and destination of any displaced oil would be driven by market forces. Given the dynamics of the crude oil market, it is speculative as to what if any local crude oil would be displaced, and what would happen to any oil if it were displaced.

It is possible that the OCS oil delivered to the SMR via the All American and Sisquoc Pipelines could be displaced. In this case the OCS oil would continue to use the All American Pipeline system to refinery markets in Los Angeles. If the OCS crude was displaced, than Phillips 66 could reverse the Sisquoc Pipeline allowing local producers to ship their crude oil via pipeline to Los Angeles. Such reversal of the pipeline flow direction would allow production from area producers to be transported to refinery destinations via pipeline instead of by truck if the SMR is not available. If the Sisquoc Pipeline is not reversed, and the local Northern Santa Barbara County crude oil cannot be processed at the SMR, then as much as 23,000 barrels of crude might have to be trucked to refineries in the Los Angeles Basin. This would equate to about 120 truck

trips per day (round trips), which would increase the potential for crude oil spills from trucks. However, potential spill volumes from a truck would be substantially smaller than from a crude oil unit train.

Implementation of the requirements specified in SB 861 could also serve to reduce the impacts of a spill by having equipment staged in places near surface water resources, and improving the response activities to an oil spill.

Under Federal and State law, UPRR and the owner of the crude oil would be responsible for cleanup and remediation of any oil spill. SB 861 requires that operators demonstrate they have the financial resources to pay for spill response, cleanup, and damages based upon a reasonable worst case spill volume.

Depending upon the location of the spill, impacts may occur to water resources that cannot be mitigated through oil spill response, remediation and restoration, and the impact of oil spills from rail cars and trucks would be significant and unavoidable.

4.13.6 Mitigation Monitoring Plan

Mitigation Measure	Plan Requirements and Timing	Compliance Verification		
		Method	Timing	Responsible Party
WR-1	During construction, oil and other chemical spills shall be contained and cleaned according to measures outlined in the California Stormwater Quality Association Best Management Practice Handbook. Best Management Practices would likely include, but not be limited, to the following: a. Ensure minor spill containment and clean up equipment is readily available in areas of demolition, construction, and operations. b. Store petroleum products in covered areas with secondary containment dikes. c. If vehicle maintenance and fueling occur onsite, use a designated area and/or secondary containment, located away from drainage courses, to prevent the run-on of storm water and the runoff of spills. d. Regularly inspect onsite vehicles and equipment for leaks, and repair immediately. e. Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids. f. Use absorbent materials on small spills.	Review and approve the Storm Water Pollution Prevention Plans	Prior to issuance of grading permit	RWQCB / Department of Planning and Building
WR-2	Prior to the County's issuance of a Notice to Proceed, the existing Santa Maria Refinery Spill Prevention Control and Countermeasure Plan (SPCCP) shall be amended to reflect operation of the rail car unloading facility and associated oil pipeline. See mitigation measure BIO-7 for the detailed SPCCP requirements for the rail unloading operations.	Review and approval of SPCCP	Prior to crude oil delivery	Department of Planning and Building CDFW

Mitigation Measure	Plan Requirements and Timing	Compliance Verification		
		Method	Timing	Responsible Party
WR-6	If possible, the Applicant shall use recycled water for construction and operational activities to reduce impacts to local groundwater supplies. Recycled water could be generated onsite and/or secured via truck transport or water pipeline from the South San Luis Obispo County Sanitation District.	Secure onsite or offsite recycled water source	Prior to or during operations	Department of Planning and Building

4.13.7 References

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