

LAGUNA NIGUEL TO SAN JUAN CAPISTRANO PASSING SIDING PROJECT

WATER QUALITY

DRAFT TECHNICAL MEMORANDUM

Prepared for:



Orange County Transportation Authority
550 South Main Street
Orange, CA 92868

Prepared by:



Parsons Brinckerhoff
505 South Main Street, Suite 900
Orange, CA 92868

January 2013

This Page Intentionally Left Blank

INTRODUCTION

This Water Quality Technical Memorandum was prepared for the Laguna Niguel to San Juan Capistrano Passing Siding Project, located within the Cities of Laguna Niguel and San Juan Capistrano, Orange County, California. The purpose of this assessment is to analyze possible changes in water quality and identify measures to avoid, minimize, or mitigate water quality impacts.

The proposed project would be in the urban Orange County cities of Laguna Niguel and San Juan Capistrano within existing Southern California Regional Rail Authority (SCRRA) right-of-way along Interstate 5 (I-5) and Camino Capistrano. The project is located as shown on Figure 1, and the project study area is shown on Figure 2.

PROJECT DESCRIPTION

The Orange County Transportation Authority (OCTA), in coordination with Metrolink, the City of Laguna Niguel (operated by the Southern California Regional Rail Authority), and the City of San Juan Capistrano, proposes the addition of approximately 1.8 miles of new passing siding railroad track adjacent to the existing main track between milepost (MP) 193.9 in the City of San Juan Capistrano (just south of the Laguna Niguel/Mission Viejo Metrolink Station) and MP 195.7 in the City of San Juan Capistrano (approximately 500 feet north of Trabuco Creek). A portion of the project from approximately MP 194.0 to MP 194.2 passes through the City of Laguna Niguel.

The project consists of the following features:

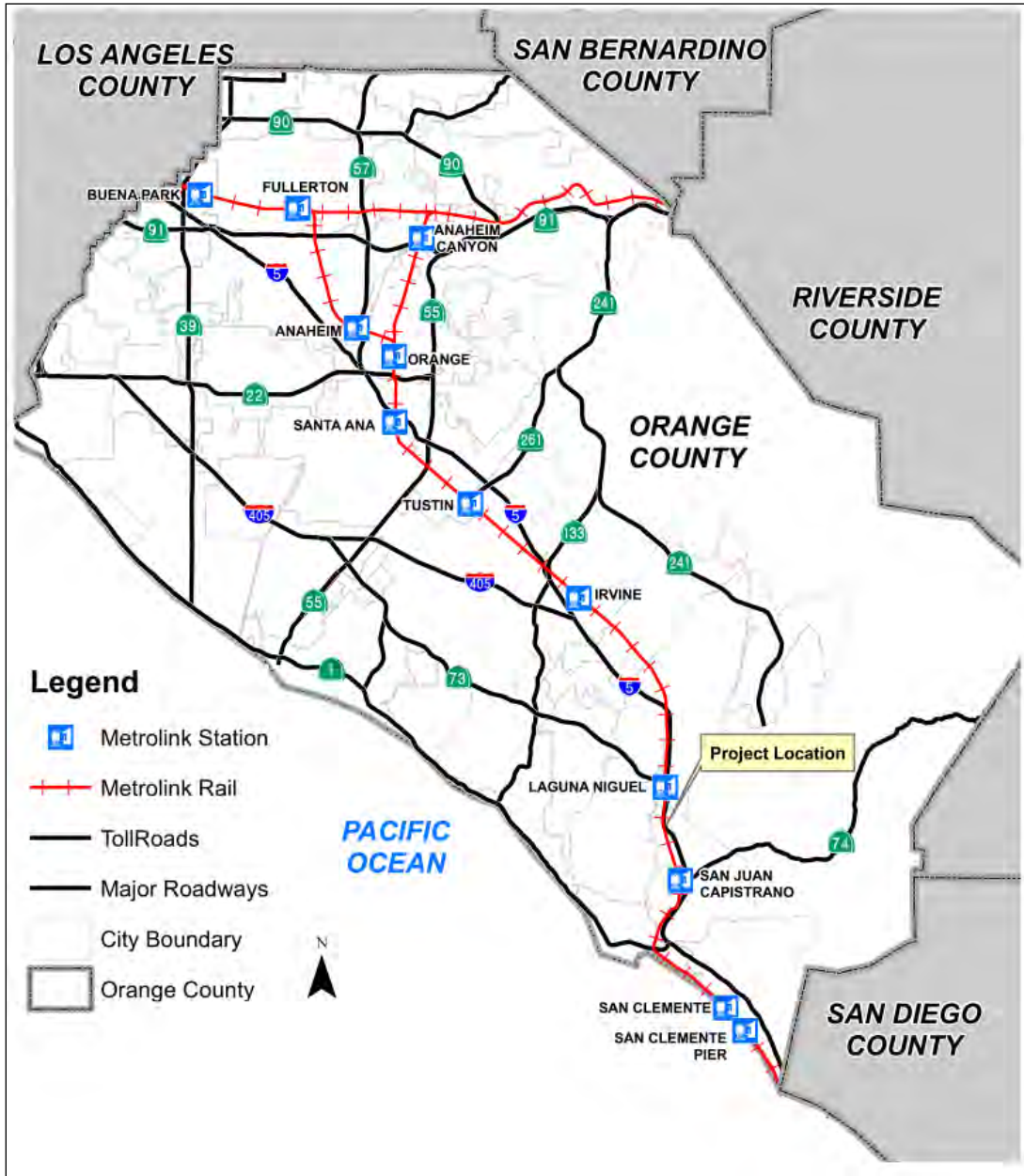
- Construct 1.8 miles of new passing siding railroad track
- Relocation of an existing spur track currently south of the Laguna Niguel/Mission Viejo Metrolink Station with a new spur track within the City of San Juan Capistrano at around MP 194.6
- Construction of new retaining walls of new retaining walls
- Relocation of existing power poles, fiber optic cables, water, and sewer lines
- Extension of existing casing for gas, water, and sewer lines
- Culvert extensions and other drainage refinements
- Addition of a railroad bridge or box culvert at MP 194.6
- Asphalt paving adjacent to Camino Capistrano to accommodate parking for use by railroad at Mp 194.6
- Reprofiting of approximately 600 feet of Camino Capistrano adjacent to Rancho Capistrano in order to improve grades

The new passing siding and switches would be built on a bed of ballast approximately 13 to 15 feet wide and 12 to 14 inches above existing grade, occupying about 3.2 acres within the existing right-of-way.

Construction of the proposed project would occur over a period of 24 months and be confined to the area within the existing right-of-way with the exception of the asphalt paving for parking, which would be located east of the existing right-of-way and south of the crossing at Rancho Capistrano and the reprofiting of approximately 600 feet of Camino Capistrano adjacent to Rancho Capistrano in order to improve grades.. Staging areas for personal vehicles, construction equipment and supplies would be established by the contractor. Train schedules would be maintained during construction.

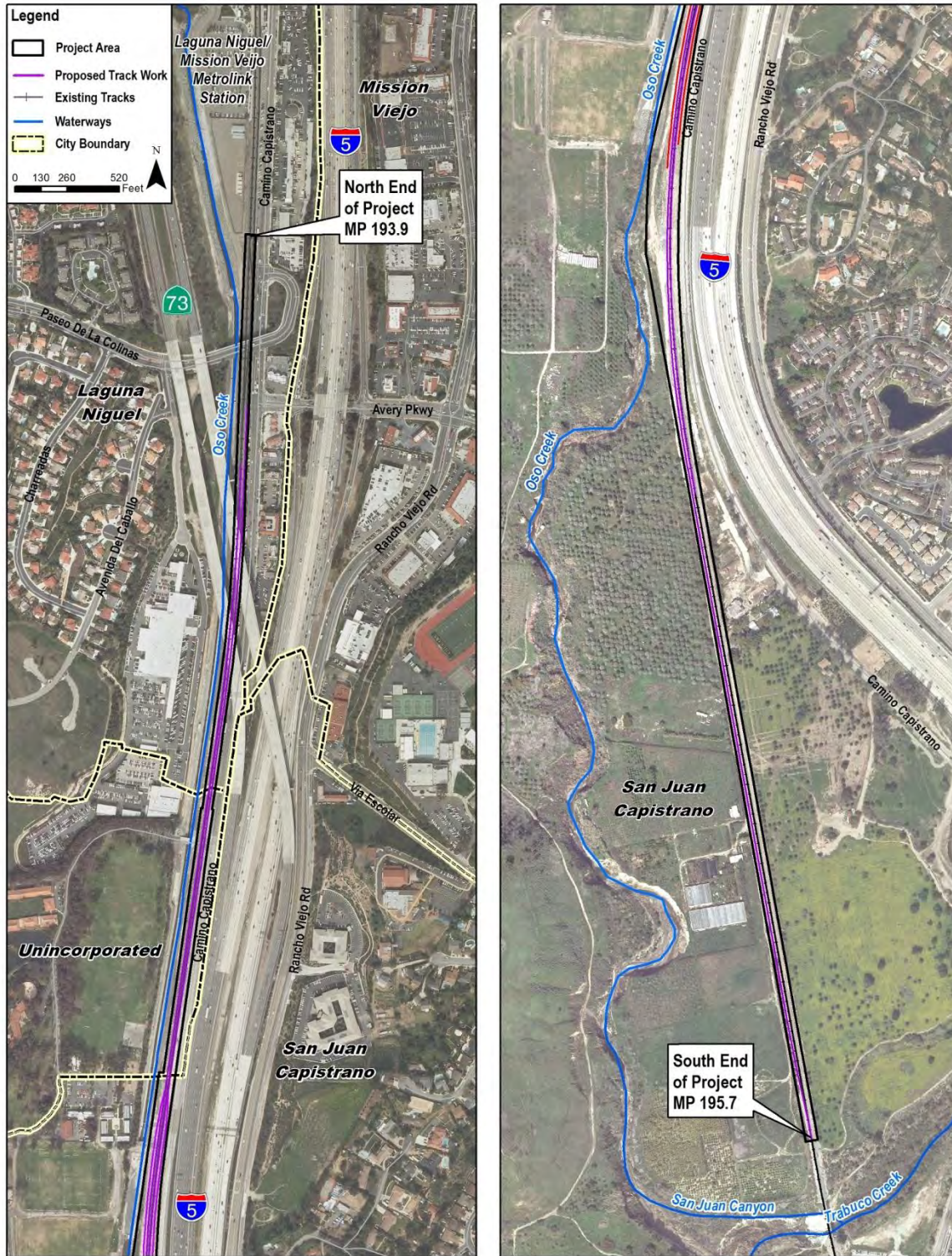
This Page Intentionally Left Blank

Figure 1: Project Location Map



This Page Intentionally Left Blank

Figure 2: Project Study Area Map



This Page Intentionally Left Blank

REGULATORY SETTING

Federal, state, and local regulations that are designed to protect water quality and that are applicable to the proposed project include the Federal Clean Water Act, the California Porter-Cologne Water Quality Control Act, the City of Laguna Niguel Prohibition of Non-Storm Water Discharges into Storm Sewers Municipal Code (Sec 6-3-400), and the City of San Juan Capistrano Chapter 14 Water Quality Regulations Municipal Code (Sec 8-12.103, Sec 8-14.104, and Sec 8-14.106). The San Diego Regional Water Quality Control Board (RWQCB) is responsible for implementing provisions of the Federal Clean Water Act and the California Porter-Cologne Water Quality Control Act. The City of Laguna Niguel and the City of San Juan Capistrano are responsible for overseeing the requirements of their water quality codes and ordinances. A summary of relevant regulations is provided below:

- a) The Clean Water Act of 1977 & 1987 (CWA) regulates discharges of pollutants into the waters of the United States, as well as the quality standards for surface waters. The CWA establishes it unlawful to discharge any pollutant from a point source into navigable waters except if a permit is obtained. Section 401 of the CWA requires a water quality certification from the State Board or Regional Board when a project requires a federal permit and would result in a discharge to waters of the United States. Section 402 of the CWA establishes a National Pollutant Discharge Elimination System (NPDES) for discharges of any pollutant (except dredge or fill material) into the waters of the United States.
- b) General Construction Stormwater Permit (Order No. 2009-0009-DWQ, NPDES) General Permit No. CAS000002 – requiring construction activities disturbing one or more acre of land to prepare a Storm Water Pollution Prevention Plan (SWPPP), implement temporary Best Management Practices (BMPs) and construction site inspections, and submit a Notice of Intent (NOI) and Notice of Termination (NOT).
- c) The Porter-Cologne Act requires that anyone who discharges waste or proposes to discharge waste that may affect the quality of the state’s water must file a “report of waste discharge” with the regional water quality control board. This water quality control law is employed by the State Water Resource Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) which implements the permit provisions (Section 402) of the CWA.
- d) San Diego RWQCB Municipal NPDES Permit (Order No. R9-2009-0002, NPDES No. CAS0108740) – issued to the Orange County Flood Control District and 11 incorporated cities within the San Diego region to regulate stormwater discharges. This permit requires the permittees to develop and implement BMPs to control/reduce the discharge of pollutants to waters of the United States to the maximum extent practicable.
- e) Orange County 2003 Drainage Area Management Plan – establishes a series of model programs, local implementation plans, and watershed implementation plans for permittees within Orange County that are subject to the Municipal Statewide Permits of the Santa Ana and San Diego RWQCBs.
- f) City of Laguna Niguel Prohibition of Non-Storm Water Discharges into Storm Sewers Municipal Code (Sec 6-3-400) – prohibits illicit connections and discharges within the City’s jurisdiction, specifies Water Quality Management Plan (WQMP) and inspection requirements for new development and significant redevelopment, and prescribes enforcement procedures.
- g) City of San Juan Capistrano Chapter 14 Water Quality Regulations Municipal Code (Sec 8-14.103, Sec 8-14.104, and Sec 8-14.106) – prohibits illicit connections and discharges within the City’s jurisdiction, specifies WQMP requirements for new development and significant redevelopment, and prescribes enforcement procedures.

AFFECTED ENVIRONMENT

PROJECT SITE

The new passing siding track would run from south of the (Laguna Niguel Mission Viejo) LNMV Station at the end of the existing double track and terminate north of the Trabuco Creek crossing. As shown on Figure 2, Oso Creek runs parallel to the project alignment, and Trabuco Creek crosses under the existing tracks approximately 500 feet south of the project. Regional access to the LNMV Station and San Juan Capistrano Station is provided by I-5 and State Route 73 (SR-73).

Adjacent to the proposed project in the City of Laguna Niguel, land use designations are primarily hospitality-commercial and open space, with automotive commercial uses near the Laguna Niguel-San Juan Capistrano city boundary. Oso Creek is designated as general open space. In the City of San Juan Capistrano, adjacent land use designations are community-park, general open space, medium low density, planned community, and special study. This portion of the project is also adjacent to areas zoned agricultural-business, planned community, general open space, and single-family residential. South of the project, Trabuco Creek is designated as general open space.

SURFACE WATER

Oso Creek exists in the project vicinity and runs parallel to the proposed passing siding project, and Trabuco Creek crosses under existing tracks south of and outside the project area.

Oso Creek is adjacent to and west of the project study area, as shown in Figure 2. The northern portion of the project drains to the Oso Creek Channel directly or via the City of Laguna Niguel Municipal Separate Storm Sewer System (MS4). The creek flows north to south approximately parallel to the railroad tracks and eventually drains to Trabuco Creek. North of Oso Parkway, Oso Creek is concrete-lined until it crosses Oso Parkway, where it is a soft-bottomed drainage channel. The creek meanders and transitions to a concrete-lined channel under Camino Capistrano and the railroad tracks. The creek becomes a riprap-lined channel at the maintenance road between Cabot and Forbes Road. The creek then transitions again to a concrete-lined channel south of the Caltrans maintenance yard and becomes soft-bottomed upon reaching the southern end of a soccer field located at the Saddleback Church Rancho Capistrano (29251 Camino Capistrano, San Juan Capistrano, California).

The *Approved 2006 Clean Water Act Section 303(d) List of Water Quality Limited Segment* lists Oso Creek as a 303(d) impaired water body under the Clean Water Act at the Mission Viejo Golf Course (approximately one mile north of the project site) for chloride, sulfates, and total dissolved solids (TDS) from unknown sources. The San Diego RWQCB lists the lower portion of Oso Creek to be a 303(d) impaired water body for toxicity. The beneficial uses associated with Oso Creek include: Agricultural Supply (AGR); Industrial Process Supply (IND); Contact Water Recreation (REC-1); Non-contact Water Recreation (REC-2); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); and Wildlife Habitat (WILD).

Five culverts occur within the project study area:

- A concrete trapezoidal culvert is located across from the Mercedes-Benz of Laguna Niguel (1 Star Drive, Laguna Niguel, California; between Station 2516+00 and Station 2517+00), east of the existing tracks. The culvert consists of two, 2-foot diameter, 24-foot long reinforced concrete pipes (RCP) and drains to Oso Creek.
- Across from the Saddleback Church Rancho Capistrano property lies a concrete-lined, box culvert (Station 2538+00) that drains into a concrete-lined ditch, which crosses underneath the existing tracks and drains into Oso Creek.

- Two concrete culverts are located approximately 1,000 feet south of the southern end of the Saddleback Church Rancho Capistrano property line (Station 2557+00 and Station 2558+00), east of the existing tracks. Both culverts include a 24-inch RCP. A separate culvert lies west of the existing tracks (Station 2558+00), and includes a 24-inch RCP.
- A trapezoidal culvert with wooden headwalls lies approximately 100 feet north of the northern end of a vacant lot zoned for residential land use (29921 Camino Capistrano, California; Station 2561+00). The culvert crosses underneath the existing tracks and includes a 24-inch wide RCP.

Any alteration or water diversion of the culverts or Oso Creek Channel would require coordination and permits from the Orange County Flood Control District (OCFCD), the San Diego RWQCB, U.S. Army Corps of Engineers (USACE), and the California Department of Fish and Wildlife (CDFW).

No designated wild or scenic rivers are located within the project vicinity.

GROUNDWATER

Water supply in the project area is provided by the Moulton Niguel Water District (City of Laguna Niguel) and the City of San Juan Capistrano Utilities Department. Drinking water originates from the Colorado River and from the State Water Project, which draws water from the San Francisco – San Joaquin Bay Delta. In addition, the City of San Juan Capistrano operates and maintains a groundwater recovery plant that was constructed in 2004. The plant produces up to 5.15 million gallons of drinkable water per day, the equivalent of the community's needs. According to the *Draft Geotechnical Investigation Report* (Kleinfelder, 2011) for this project, based on available groundwater well data in the area, observations made during the field investigation, and published depth to groundwater measurements from wells within the region, groundwater is anticipated to be approximately 5 to 20 feet below the ground surface.

In addition, fluctuations of the groundwater level, localized zones of perched water, and variations in soil moisture content should be anticipated during, and following the rainy season. There is a potential for shallow perched groundwater to be present in the areas of the existing culverts. Irrigation of agricultural areas adjacent to the site can also cause a fluctuation of local groundwater levels and perched water conditions can develop. Perched groundwater may develop in cases where excessive irrigation, waterline breaks, or unusually high rainfall may occur.

FLOODPLAINS

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (Panel Numbers 06059C0441J and 06059C0443J, revised December 3, 2009), the proposed project is adjacent to a 100-year floodplain (Zone A, areas with a one percent annual flood risk and 26 percent risk of flooding over 30 years) associated with Oso Creek.

WATER QUALITY IMPACTS

WATER QUALITY

The proposed project is not anticipated to directly affect Oso Creek, or its tributaries. Construction of the proposed project would occur primarily within the existing right-of-way. Construction impacts could include increased sediment and erosion in or near disturbed areas. Pollutants that could enter the storm drain system include grease and oil from construction or personnel vehicles and equipment, paint, lubricants, and construction debris. For general construction activities, the proposed project is required to comply with the NPDES Construction General Permit to discharge stormwater associated with construction activity. The contractor is required to prepare a SWPPP that addresses the quality and quantity of stormwater runoff generated onsite during project construction and operation, and that incorporates temporary and permanent BMPs into the project. Implementation of temporary and permanent BMPs would minimize impacts to water quality.

Three culverts located within the project area will be extended to accommodate the proposed track extension. Permits required for the construction work include a Section 404 permit from USACE, Section 401 Water Quality Certification from the RWQCB, Section 1602 Streambed Alteration Agreement from the CDFW, and encroachment from the OCFCD. However, during the project's operational phase, it is not anticipated that the hydrological or hydraulic conditions of the channels or culverts would be impacted.

GROUNDWATER

Groundwater is not anticipated to be encountered during construction activities since the water table ranges from 5 feet to 20 feet below the ground surface; therefore, dewatering is not anticipated. However, if groundwater is encountered and dewatering is required, then a dewatering permit must be obtained from the San Diego RWQCB in compliance with Section 402 of the Clean Water Act. Construction-related dewatering discharge requires compliance with the NPDES permit for discharges from Groundwater Extraction Waste and Similar Discharges to Surface Waters within the San Diego Region Except for San Diego Bay (Order No. R9-2008-0002, NPDES No. CAG919002), or any subsequent permit/order at the time of construction.

The proposed project would not introduce substantial new impervious surfaces that would affect groundwater recharge. Construction of the proposed project may introduce the potential for contaminants that could be carried in runoff into surface waters and may also have the potential to seep into the groundwater. Permanent treatment BMP controls are required to ensure that the project does not contribute to the impairment of surface or groundwater.

FLOODPLAINS

The project construction footprint is located outside of the 100-year floodplains associated with Oso Creek and Trabuco Creek. Construction of the proposed project is not anticipated to encroach upon Oso Creek or Trabuco Creek.

CONCLUSIONS AND RECOMMENDATIONS

The proposed project must comply with the Clean Water Act and NPDES standards during and following construction. To comply with the NPDES Construction General Permit, the contractor must file an NOI with the San Diego RWQCB prior to construction. The contractor must prepare a SWPPP that includes identification and implementation of BMPs to control erosion and to ensure that dirt, construction materials, pollutants or other materials are not discharged from the project area into the surface waters or into areas that would eventually drain to storm drains. Upon completion of construction, an NOI would be filed with the San Diego RWQCB. The temporary and permanent BMPs shall be considered in compliance with the San Diego RWQCB and SCRRA stormwater standards and shall be developed in cooperation with the City of Laguna Niguel and the City of San Juan Capistrano.

In addition to the standard BMPs required for compliance with NPDES as described in the Construction General Permit, the following measures are recommended for consideration in the SWPPP:

- Due to the proximity of the project construction limits to Oso Creek and Trabuco Creek, construction runoff needs to be intercepted and conveyed away from the surface waters. All construction and project activities will be limited to a well-defined footprint to minimize impacts to water resources. The boundaries of the construction footprint adjacent to any channels should be fenced with straw wattle/fiber roll berms, silt fencing and sand bags or other barriers as outlined in the SWPPP to prevent the transport of pollutants and sediment into the surface waters.
- During project construction, excavated materials should not be deposited or stored along watercourses where materials could be washed away by high water or storm runoff. Precautions should be taken when handling materials to protect water quality. Hazardous materials, such as paint, lubricant, engine oil, carbon-fueled equipment, concrete washes, or stockpiles, to be stored or used during construction shall be stored so as to minimize potential impacts to surface and groundwater. Appropriate techniques include storing materials inside or under cover on paved surfaces, secondary containment, regular inspections, and training of subcontractors and construction workers. The period of time that such materials are stored on the site should be kept to a minimum. After construction is complete, the contractor should dispose of remaining hazardous or toxic materials appropriately, according to local, state, and federal regulations.
- During project construction, no maintenance of construction equipment or storage of construction vehicles should occur within 100 feet of a drainage channel. Where a potential exists for grease and oil contamination to flow into storm drains, ditch structures, including grease traps, sediment traps, detention basins, and/or temporary dikes may be used to control possible pollutants. Facilities shall be constructed pursuant to guidance published in Section 402 of the Clean Water Act.

This Page Intentionally Left Blank

PREPARERS

Uyenlan Vu

Environmental Planner

B.A., Environmental Analysis and Design, University of California, Irvine

B.A., Social Ecology, University of California Irvine

Stephanie S. Oslick, AICP

Environmental Manager

M.S., Environmental Studies, California State University, Fullerton, 1999

B.S., Biological Sciences, University of Southern California, 1992

This Page Intentionally Left Blank

REFERENCES

- Caltrans. *Storm Water Quality Handbook: Project Planning and Design Guide*. May 2007.
- Gregg Drilling and Testing, Inc. *Southern California Ground Water Depth Chart*.
http://www.greggdrilling.com/Resources/water_table.html. Accessed February 12, 2009.
- Federal Emergency Management Agency. *Flood Insurance Rate Map (FIRM), Map Number 06059C0441J and 06059C0443J*. Map revised December 3, 2009.
- . FEMA Map Service Center. <http://msc.fema.gov/>. Accessed February 2009.
- Laguna Niguel, City of. <http://www.ci.laguna-niguel.ca.us/>. Accessed February 2009.
- . *City of Laguna Niguel Municipal Code (enacted May 1, 2007, Supplement No. 9)*.
<http://www.municode.com/resources/gateway.asp?pid=12544&sid=5>.
- Kleinfelder. *Draft Geotechnical Investigation Report OCTA Orange Subdivision Passing Siding Track Extension Laguna Niguel – San Juan Capistrano MP 193.9 TO 195.2*. July 2011.
- Moulton Niguel Water District. <http://www.mnwd.com/>. Accessed February 12, 2009.
- Orange County Watershed and Coastal Resources Division. *San Juan Creek Watershed and Elevation Ranges*. <http://www.ocwatersheds.com/watersheds/sanjuan.asp>. Accessed February 2009.
- San Diego Regional Water Quality Control Board.
- . *2008 Clean Water Act Sections 305(b) and 303(d) Integrated Report for the San Diego Region*. December 2009. The 2008 Integrated Report was adopted by the San Diego RWQCB on December 16, 2009, and has been submitted to the SWRCB for final approval.
- . *Approved 2006 CWA Section 303(d) List of Water Quality Limited Segments*.
http://www.waterboards.ca.gov/tmdl/docs/303dlists2006/approved/r9_06_303d_reqmdls.pdf. Accessed February 2009.
- . *Water Quality Control Plan For the San Diego Basin (9)*. September 8, 1994.
- San Juan Capistrano, City of. <http://www.sanjuancapistrano.org/>. Accessed February 2009 and April 2011.
- . *City of San Juan Capistrano Municipal Code (Ordinance 940, code updated in September 2008)*.
<http://municipalcodes.lexisnexis.com/codes/sanjuancap/>.
- . *City of San Juan Capistrano Community View/GIS/Maps*. <http://maps.digitalmapcentral.com/production/VECommunityView/cities/SanJuanCapistrano/>. Accessed April 2011.
- United States Department of the Interior Geological Survey (USGS). San Juan Capistrano Quadrangle USGS 7.5-minute Topographic Series. 1968 (photo revised 1981).