IV. ENVIRONMENTAL IMPACT ANALYSIS
F. SURFACE WATER QUALITY

1. INTRODUCTION

This section provides a summary of regulations associated with surface water quality and describes the effects of the proposed Project relative to surface water quality conditions both during and after Project construction. On-site groundwater quality with regard to the 157-acre former landfill site (Development Districts 1 and 2) is currently being addressed by the California Department of Toxic Substances Control (DTSC) and, as such, is analyzed in Section IV.D., Hazards and Hazardous Materials, of this EIR. The evaluation of surface water quality as presented in this section is based on the following reports:

- SCS Engineers, 2004-2005 Annual Report for Storm Water Discharge, June 30, 2005;
- Allwest Geoscience Inc., Storm Water Pollution Prevention Program Annual Report 2003-2004 for the Former Cal Compact Landfill (July 2004);
- Allwest Geoscience Inc., Storm Water Pollution Prevention Program Annual Report 2002-2003 for the Former Cal Compact Landfill (July 2003);
- Brown & Root Environmental, Final Remediation Action Plan – Cal Compact Landfill Upper Operable Unit (October 1995); and
- Robert Bein William Frost & Associates, Conceptual Surface Water Quality Control Program – Los Angeles Metromall Project (August 20, 1993).

These documents are on file in the City of Carson Community Development Department located in the Carson City Hall, 701 East Carson Street.

2. ENVIRONMENTAL SETTING

a. Regulatory Environment

Water quality is regulated at the Federal, State, and local levels. The United States Environmental Protection Agency (USEPA), the State Water Resources Control Board

(SWRCB), the Regional Water Quality Control Board (RWQCB), and the City of Carson regulate water quality in the proposed Project area.

(1) Federal Regulations

In 1972, the Federal Water Pollution Control Act, also referred to as the Clean Water Act, was amended to provide that the discharge of pollutants to waters of the United States from any point source is unlawful, unless a National Pollutant Discharge Elimination System (NPDES) permit authorizes the discharge. The Water Quality Act of 1987 added Section 402(p) to the Clean Water Act to require the United States Environmental Protection Agency (USEPA) to establish specific requirements for storm water discharges. In response to the 1987 amendments to the Clean Water Act, Phase I of the USEPA NPDES Program requires NPDES permits for: (1) municipal separate storm sewer systems generally serving, or located in, incorporated cities with 100,000 or more people (referred to as municipal permits); (2) eleven specific categories of industrial activity (including landfills); and (3) construction activity that disturbs five acres or greater of land.[72] As of March 2003, Phase II of the NPDES Program extends the requirements for NPDES permits to numerous small municipal separate storm sewer systems, construction sites of one to five acres, and industrial facilities owned or operated by small municipal separate storm sewer systems, which were previously exempted from storm water permitting.

Section 402(p) also mandates that municipal permits must effectively prohibit the discharges of non-stormwater to the stormwater system except under certain provisions, and requires controls to reduce pollutants in discharges from the stormwater system to the maximum extent practicable, including the use of Best Management Practices (BMPs), control techniques, and system, design, and engineering methods.[73]

Section 303(d) of the Clean Water Act requires the identification and listing of water quality limited or "impaired" waterbodies where water quality standards and/or receiving water beneficial uses are not met. Once a waterbody is listed as "impaired," total maximum daily loads (TMDLs) must be established for the pollutants or flows causing the impairment (33 U.S.C. §1313[d][c]). The TMDL is a number that represents the capacity a receiving water must absorb of various pollutants from the sum of all point and non-point sources and still meet water quality standards.

Under the Clean Water Act, the EPA establishes maximum contaminant levels for metals, nitrites, radionuclides, volatile organic compounds (VOCs), stable organic compounds (SOCs),

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[72] *County of Los Angeles Municipal Stormwater Permit (NPDES No. CAS004001, Order No 01-182).*

[73] *State Water Resources Control Board Fact Sheet for Water Quality Order 99-08-DWQ.*

and disinfection by-products. Chemical contamination of water exceeding established federal standards is considered a health hazard.

(2) State Regulations

(a) State Water Resources Control Board

The Clean Water Act authorizes the USEPA to allow the State of California to serve as the NPDES permitting authority in lieu of the USEPA. The Porter-Cologne Water Quality Control Act authorizes the State Water Resources Control Board (SWRCB), through the Regional Water Quality Control Board (RWQCB), to regulate and control the discharge of pollutants into waters of the State. In 1999, the SWRCB reissued a statewide General Construction Stormwater Permit (General Permit)[74], which is implemented by the RWQCB. The General Permit regulates construction activity that includes clearing, grading, and excavation resulting in soil disturbance of at least one acre of total land area.[75] This General Permit authorizes the discharge of stormwater to surface waters from construction activities. The General Permit prohibits the discharge of materials other than stormwater and authorized non-stormwater discharges and all discharges that contain a hazardous substance in excess of reportable quantities established at 40 Code of Federal Regulations (CFR) 117.3 or 40 CFR 302.4 unless a separate NPDES Permit has been issued to regulate those discharges. Provisions of the General Permit were modified in September 2000 to require permittees to determine, through surface water sampling and testing, whether the BMPs utilized on a project site are preventing further impairment by sediment in stormwaters discharged directly into waters listed as impaired for sediment or silt, and/or are preventing other pollutants, that are known or should be known by permittees to occur on construction sites and that are not visually detectable in stormwater discharges, from causing or contributing to exceedances of water quality objectives. The NPDES General Construction Permit requires that all developers of land where construction activities will occur over more than one acre implement the following:

- Develop and implement a Stormwater Pollution Prevention Plan (SWPPP), which specifies BMPs that will reduce pollution in stormwater discharges to the Best Available Technology Economically Achievable/Best Conventional Pollutant Control Technology standards;

- Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation; and

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[74] *Water Quality Order 99-08-DWQ referred to as the "General Permit."*

[75] *State Water Resources Control Board Fact Sheet for Water Quality Order 99-08-DWQ.*

- Perform inspections and maintenance of all BMPs.

In order to obtain coverage under the General Permit, a project applicant must submit a Notice of Intent (NOI) to the SWRCB and prepare a SWPPP. BMPs within the SWPPP typically include minimization of erosion during construction, stabilization of construction areas, sediment control, control of pollutants from construction materials, as well as post-construction stormwater management (e.g., the minimization of impervious surfaces, treatment of stormwater runoff, etc). The SWPPP also must include a discussion of the program to inspect and maintain all BMPs.

(b) California Department of Toxic Substances Control

The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) enforces the California Code of Regulations (CCR) Title 22, Division 4.5, which relates to the cleanup and prevention of toxins in soils and water. Sections 64431 through 64444 of Title 22 establish maximum contaminant levels (MCLs) for metals, nitrites, radionuclides, volatile organic compounds (VOCs), stable organic compounds (SOCs), and disinfection by-products. A comparison of state and federal MCLs indicates that the state is either the same or has a much lower maximum (stricter) safety level than the USEPA. Chemical contamination exceeding established state standards are considered a health hazard. The DTSC oversees the cleanup of soils and groundwater, and evaluates soil, water, and air samples taken at contaminated sites. DTSC enforces cleanup of contaminated sites through the implementation of Remedial Action Plans (RAPs), which are regulated by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and Section 25356.1 of the California Health and Safety Code. Where water has come into contact with, or percolated through, land-disposed waste into the ground or surface water, the DTSC has authority, in coordination with the RWQCB, to test and monitor ground and surface water. The role of the DTSC regarding groundwater contamination is addressed in Section IV.D, Hazards and Hazardous Materials, of this Draft EIR.

(3) Local Regulations

The Regional Water Quality Control Board (RWQCB) issued a municipal permit (MS4 Permit) to the County of Los Angeles and 84 incorporated cities, including the City of Carson, in December 2001.[76] To meet the requirements of the Los Angeles County MS4 Permit, municipalities are required to implement the Storm Water Quality Management Program (SWQMP) that was prepared as part of the Report of Waste Discharge filed as part of the

[76] *County of Los Angeles Municipal Storm Water Permit (NPDES No. CAS004001, Order No 01-182).*

NPDES approval process. Pursuant to this program, municipalities, including the City of Carson, are required to conduct a variety of activities including, but not limited to, the following:

- Control discharges at commercial/industrial facilities through tracking, inspecting, and ensuring compliance at facilities that are critical sources of pollutants;
- Implement a development planning program for specified development projects;
- Implement a program to control construction runoff from construction activity at all construction sites within its jurisdiction; and
- Implement a public agency activities program.

(a) Construction

In accordance with requirements of the MS4 Permit, the City of Carson must establish and enforce specific requirements related to surface water quality. Under MS4, construction projects with one acre and more of disturbed soil must file an NOI with the SWRCB to comply with the State NPDES General Construction Permit. The applicant for any construction project must also prepare a Storm Water Pollution Prevention Plan (SWPPP). In order to implement SWRCB requirements, the City of Carson Municipal Code incorporates, by reference, regulations of the Los Angeles County Code, specific to water runoff and water quality. Code Section 3307.5, Storm Water Control Measures, requires the City to put into effect and maintain all precautionary measures necessary to protect adjacent water courses and public or private property from damage by erosion, flooding, and deposition of mud, debris, and construction-related pollutants originating from the site during grading and related construction activities. Under Code Section 3309.4, storm water provisions are required to be shown on all grading plans in accordance with a drainage plan and locations of structures that may affect drainage must be shown. Section 3315.4 requires that all drainage facilities shall be designed to carry waters to the nearest practicable street, storm drain, or natural watercourse approved by the Building Official or other appropriate governmental agency as a safe place to deposit such waters. Desilting basins, filter barriers or other methods, as approved by the City Building Official, shall be utilized to remove sediments from surface waters before such waters are allowed to enter streets, storm drains or natural watercourses.

Code Section 3319 addresses National Pollution Discharge Elimination System (NPDES) compliance. Under Section 3319.2, Storm Water Pollution Prevention Plan (SWPPP), no grading permit shall be issued unless the plans for such work include a SWPPP with details of BMPs, as may be necessary, to control construction-related pollutants which originate from the site as a result of construction related activities. All BMPs must be installed before grading begins. As grading progresses, BMPs must be maintained in good working order to the

satisfaction of the City Building Official, unless final grading approval has been granted by the City Building Official and all permanent drainage and erosion control systems, if required, are in place.

In addition to the SWPPP required in Section 3319.2, if it appears that grading will not be completed prior to November 1, Code Section 3319.3 requires that the owner shall file a Wet Weather Erosion Control Plan (WWECP) with the City Building Official. The WWECP shall include specific Structural BMPs to minimize the transport of sediment and protect public and private property from the effects of erosion, flooding or the deposition of mud, debris or construction related pollutants. The BMPs shown on the WWECP shall be installed on or before October 15. The plans shall be revised annually or as required by the Building Official to reflect the current site conditions.

(b) Operation

The City of Carson further meets the requirements of the MS4 Permit through the implementation of the Los Angeles County development planning program. The Standard Urban Stormwater Mitigation Plan (SUSMP) is one of the main components of this program. In accordance with the required program, the City is responsible for monitoring SUSMPs which address storm water pollution from new private sector development and redevelopment projects Site-specific SUSMPs, for individual development projects, must incorporate the SWRCB-required minimum Source and Treatment Control BMPs and may include BMPs added by the City, on a case-by-case basis. The primary objectives of the SUSMP are to (1) effectively prohibit non-storm water discharges and (2) reduce the discharge of pollutants to the storm water conveyance system. Project-specific SUSMPs must be incorporated into the physical design of the approved project. Under the MS4 permit all projects within the following categories are required to prepare SUSMPs:

- Single-family hillside residences;
- 100,000-square-foot commercial developments;
- Automotive Repair Shops;
- Restaurants;
- Home subdivisions with 10 to 100 or more housing units;
- Project located adjacent to an environmentally sensitive area; and
- Parking lots, potentially exposed to storm water runoff, 5,000-square-feet or more, with 25 or more parking spaces.

Treatment control BMPs required under the SUSMP shall, at a minimum, be based on either volume-based or flow-treatment-control design standards, or both. Treatment control BMPs are intended to achieve a reduction in the percentage of pollutant loads in storm waters during particular storm events. Under SUSMP requirements, mitigation is achieved through infiltration, filtration, or treatment of stormwater runoff. Projects requiring an EIR, such as the proposed Project, are encouraged to select a design standard associated with volumetric treatment control and flow based treatment, that is site-specific, rather than the default design 0.75-inch storm event standard.[77] Source Control BMPs include protection of slopes and channels; stenciling and signage on drain inlets to prohibit unauthorized dumping; screening or walling of trash storage areas to prevent off-site transport of trash; diversion of drainage from trash storage areas; indoor storage of materials; prohibition of direct connection to storm drains from depressed loading docks (truck wells); and treatment of runoff from parking areas before it reaches the storm drain system. Treatment Control BMPs, which treat water runoff through infiltration and other treatment measures, include infiltration benches or trenches, ponds and detention basins, catch basin inserts and screens, cisterns, biofilters, filtration systems, clarifiers, oil separators, primary wastewater treatment, rain diversion, and other measures.

Under SUSMP requirements, peak storm water runoff discharge shall not exceed the estimated pre-development rate for developments where the increased peak storm water discharge will result in increased potential for downstream erosion. Runoff is generally reduced through implementation of infiltration and detention BMPs. A waiver to infiltration requirements may be granted, only if all other Structural and Treatment Control BMPs have been considered and if impracticability can be established. Recognized situations of impracticability include risk of groundwater contamination because of a known unconfined aquifer beneath a site. Infiltration may also be waived if there is an extreme limitation of space or unstable soil conditions. Infiltration BMPs are also not recommended for areas subject to high vehicular traffic on a main roadway, or 15,000 or greater average daily traffic (ADT) on any intersecting roadway, unless appropriate pre-treatment is provided to ensure that groundwater is protected and the infiltration BMP is not rendered ineffective by overload.

In the BMP selection process, evaluations to determine the effectiveness may be based on numerical design criteria. Evaluations do not need to rely on water-quality based information, such as monitoring, but may be based on surveys, review of plans, or other methods. All projects subject to SUSMP requirements must provide verification of maintenance for Structural and Treatment Control BMPs. Verification can be provided through covenants or CEQA mitigation requirements.[78] The City may also verify maintenance of Structural and Treatment

[77] *California Regional Water Quality Control Board - Los Angeles Region, Development Planning Program Review Report, Los Angeles County Municipal Storm Water NPDES Permit, page 35 (November 2003).*

[78] *Ibid, page 38.*

Control BMPs with inspections and by requiring property owners to submit annual or semi-annual certifications that maintenance of the BMPs has been performed.

b. Existing Physical Environment

(1) Development Districts 1 and 2 (Former Landfill Site)

(a) Surface Water Quality

Storm water quality is typically influenced by land use, hydrology, geology, and soils. Pollutants of concern are classified into six categories: (1) sediments, (2) oxygen-demanding material, (3) bacteria, (4) nutrients, (5) metals, and (6) other toxic chemicals.

Development Districts 1 and 2 operated as a Class II landfill from 1959 until approximately 1965. The site lay dormant and unproductive after suspension of landfill operations until 1978, when roads and drainage and other basic infrastructure were installed. From 1991 to 1993, a concrete (demolition debris) crushing and recycling facility operated on a portion of the landfill site.

In 1991, the County of Los Angeles Department of Public Works (LACDPW) collected surface water runoff samples from the former landfill site and from the Torrance Lateral Channel, upgradient from the landfill site. To determine the level of residual contamination, the upgradient samples served as control, or background, values with which surface water runoff from the landfill site could be compared. Laboratory test determined that contamination in surface water did exist. Surface runoff samples from five on-site locations were tested for a range of metals against the background levels. Metals that exceeded background concentrations included antimony, calcium, chromium, copper, lead, molybdenum, nickel, and zinc.[79] Of the seven Volatile Organic Compound (VOC) samples collected from four surface water locations, only xylene (4 parts per billion [ppb]) was detected at one of the collection locations. Four Semi-Volatile Organic Compounds (SVOCs) collected from three locations detected bis (2-ethylhexyl) phthalate (4 ppb) and butyl benzyl phthalate (8 ppb) at one sample location. Oil and grease analyses were performed on five samples collected at five locations. The analytical results indicated detectable oil and grease in four samples, ranging from 0.36 to 0.62 ppm.[80] Storm water discharges from the site and effluent from the future groundwater treatment system require a NPDES permit to allow discharge into the storm drain system. Under the NPDES permit, periodic effluent quality monitoring and reporting are required to determine compliance

[79] *Brown & Root Environmental, Op. Cit., page 4-8.*

[80] *Brown & Root Environmental, Op. Cit., pages 4-6 and 4.7.*

and monitor treatment system efficiency.[81] The RAP requires the landfill area to be capped to prevent rainwater from entering the waste prism. Capping the landfill waste would prevent additional existing contaminants from entering surface water runoff. The implementation of the DTSC-approved 1995 RAP would allow the proposed redevelopment of the site to proceed.[82]

(b) Storm Water Pollution Prevention Plan (SWPPP)

Surface water runoff from the landfill site is currently managed under an existing General Industrial NPDES permit administered by the RWQCB. The discharge permit includes the implementation of a SWPPP, required by the NPDES permit, and the submittal of an Annual Report for RWQCB review. The SWPPP establishes a program for monitoring, testing, and reporting of stormwater quality to determine compliance with the requirements of the NPDES and the efficacy of the selected monitoring treatment, or BMPs. In accordance with the current NPDES for the parcel, the quality of stormwater runoff has been actively tested for several years. The SWPPP requires inspections and sampling of surface water runoff, quarterly and during precipitation events. Under the SWPPP, water samples are tested for potential contaminants and an Annual Report of site inspections and water testing is submitted to the RWQCB for review. The 2002-2003 and 2003-2004 Annual Reports observed that streets and slopes that drain into the storm drain system are potential pollution sources. Reported water sampling and testing indicate that the primary pollutant that could affect storm runoff quality is sediment from thinly vegetated areas near roads and residual dirt left on roads by heavy equipment activities. Precipitation was the only discharge source. Surface water has been tested for VOCs, semi-VOCs, total suspended solids (TSS), oil and grease, specific conducting materials, and pH in accordance with the standard EPA methodology.[83] The selected storm drain sampling points are located in areas near potential pollution sources and would receive representative examples of the site's surface water quality. Areas of potential pollution sources are areas of previous high traffic, where heavy equipment created potential storm water migration channels. The drain (MW-2) located at the bottom of the slope of the road is also considered an area of high pollution potential.[84] According to testing results reported in the two Annual Reports, no VOCs, Semi-VOCs, RCRA-listed metals,[85] or oil and grease were detected that exceeded the state's specified limit. The reporting limit (MCL) for total suspended particulates (TSS) is 5 μg/L. During the 2002-2003 rainy season, TSS was detected at 4 μg/L, 98.1 μg/L, 149 μg/L, and 110 μg/L, at the

[81] *Brown & Root Environmental, Op. Cit., page 7-15.*

[82] *Brown & Root Environmental, Op. Cit., page 6-1.*

[83] *Allwest Remediation, Inc., Storm Water Pollution Program (SWPPP) Annual Report, (2002-2003 and 2003-2004), pages 35 & 45.*

[84] *Allwest Remediation, Inc., Op. Cit, page 2 (July 2003).*

[85] *RCRA (hazardous) metals include arsenic, barium, cadmium, lead, mercury, selenium, and silver above a specified limit.*

sampling locations. During the 2003 rainy season, TSS was detected at 1.7 µg/L and 1.5 µg/L. TSS, which is made up of undissolved solids in water runoff, provide a medium by which toxins and other pollutants can be transported to waterways and ultimately harm aquatic life. It has been shown that TSS levels increase substantially with the disturbance of previously undisturbed land and with construction.[86]

Under the existing SWPPP, BMPs are being implemented to reduce TSS. These include the following measures:

- Streets are cleared and swept monthly throughout the year to prevent the accumulation of sediment in gutters and storm drains;
- Weed control is continuously implemented throughout the year to prevent the accumulation of organic materials in gutters and storm drains;
- Stockpiled soil that could become suspended in runoff entering the storm drains was moved to areas where runoff would not impact storm drains;
- Sandbags are placed along each storm drain to reduce runoff flow velocity, thus causing suspended solids to settle out before entering storm drains;
- Sandbags are placed at the base of each slope to prevent erosion and to divert runoff flow away from the storm drains where storm drains are located against unpaved slopes;
- Vegetation above storm drains is maintained to minimize erosion and enhance the settling of suspended solids before entering storm drains.

Due to heavy rains in the 2004-2005 season, it was necessary to pump and discharge standing water from two on-site retention ponds. Prior to discharge into the off-site storm drain system, permits were obtained from the City of Carson and the CRWQCB.[87] The retained water was sampled and tested in accordance with State water quality parameters for VOCs, semi-VOCs, metals, and Specific Conductance (SC). VOCs, including 23 µg/L Naphalene and 3.2 µg/L m,p Xylene, were detected in Sample RW1W. The reporting limit for these compounds are 5.5 µg/L and 2.0 µg/L, respectively. No other VOCs reached detectible levels in Sample RW1. In Sample RW2, acetone was detectible at 14 µg/L, exceeding the MCL of 10 µg/L. No semi-

[86] *Allwest Remediation, Inc., Op. Cit., Description of Basic Analytical Parameters, page 14 (July 2003).*

[87] *California Regional Water Quality Control Board, Los Angeles Region, File No. 59-045, WDD No. 4191-012013, May 26, 2005 (attached to SCS Engineers, 2004-2005 Annual Report for Stormwater Discharge, June 30, 2005).*

VOCs exceeded the reporting limit in Sample RW1. One compound, benzoic acid, was detected at 21 µg/L in Sample RW2, slightly exceeding the reporting level of 20 µg/L. No other semi-VOCs were detected in Sample RW2. In the two water samples, barium was detected at 6.1 µg/L and 3.6 µg/L, respectively, exceeding the reporting limit of 1.0 µg/L. In Sample RW1, lead was also detected at 1.0 µg/L, equal to the reporting limit. No other metals were detectible in either sample. Oil and grease and TOCs were not detectible in either sample. Both water samples exceeded reporting limits for SC, which is the ability of water to conduct electricity. High conductivity indicates high mineralization or total dissolved solids, and affects the quality of water for drinking or commercial and industrial use. The SC of Sample RW 1 was detected at 42 µg/L and the SC of Sample RW2 was 31 µg/L. The reporting limit for SC is 1.0 µg/L. The retained water was released in accordance the requirements of the CRWQCB Release of Stormwater Permit.[88]

According to the 2002-2003, 2003-2004, and 2004-2005 Annual Reports, the landfill site is in compliance with the SWPPP General Permit. Existing BMPs are determined to be adequate to fulfill the requirements of the SWPPP under existing conditions and no additional BMPs are deemed necessary.[89]

(c) Drainage

Development Districts 1 and 2 consist primarily of a large, expanse of exposed soil and fill materials. The existing storm drain system is shown in Figure 34 on page 345. The amount of vegetation available to anchor the surface soil is minimal. Paved areas consist of Lenardo Drive and Stamps Drive. The principal mechanism of water and sediment transport on- and off-site is via surface water runoff during and immediately following precipitation events. There are no perennial streams on the parcel and the only surface water present on-site is runoff water. Due to poorly maintained drainage patterns, a portion of water and sediment transported during episodes of rainfall is contained in small water-trapping depressions. Most flows, however, are toward the existing streets and the existing storm drain system in Del Amo Boulevard, Main Street, Lenardo Drive, and Stamps Drive.

The drainage area surrounding the Project site is served by the Torrance Lateral Channel, a concrete-lined channel 45 feet wide and up to 17.5 feet deep. The Torrance Lateral Channel has a design capacity of 4,300 cubic feet per second (cfs). This channel begins west of the Project site and continues easterly along the western and south boundaries of the former landfill site, until passing under the San Diego Freeway where it connects to the Dominguez Channel.

[88] *SCS Engineers, 2004-2005 Annual Report for Stormwater Discharge, June 30, 2005).*

[89] *Allwest Remediation, Inc., Op. Cit, page 25.*

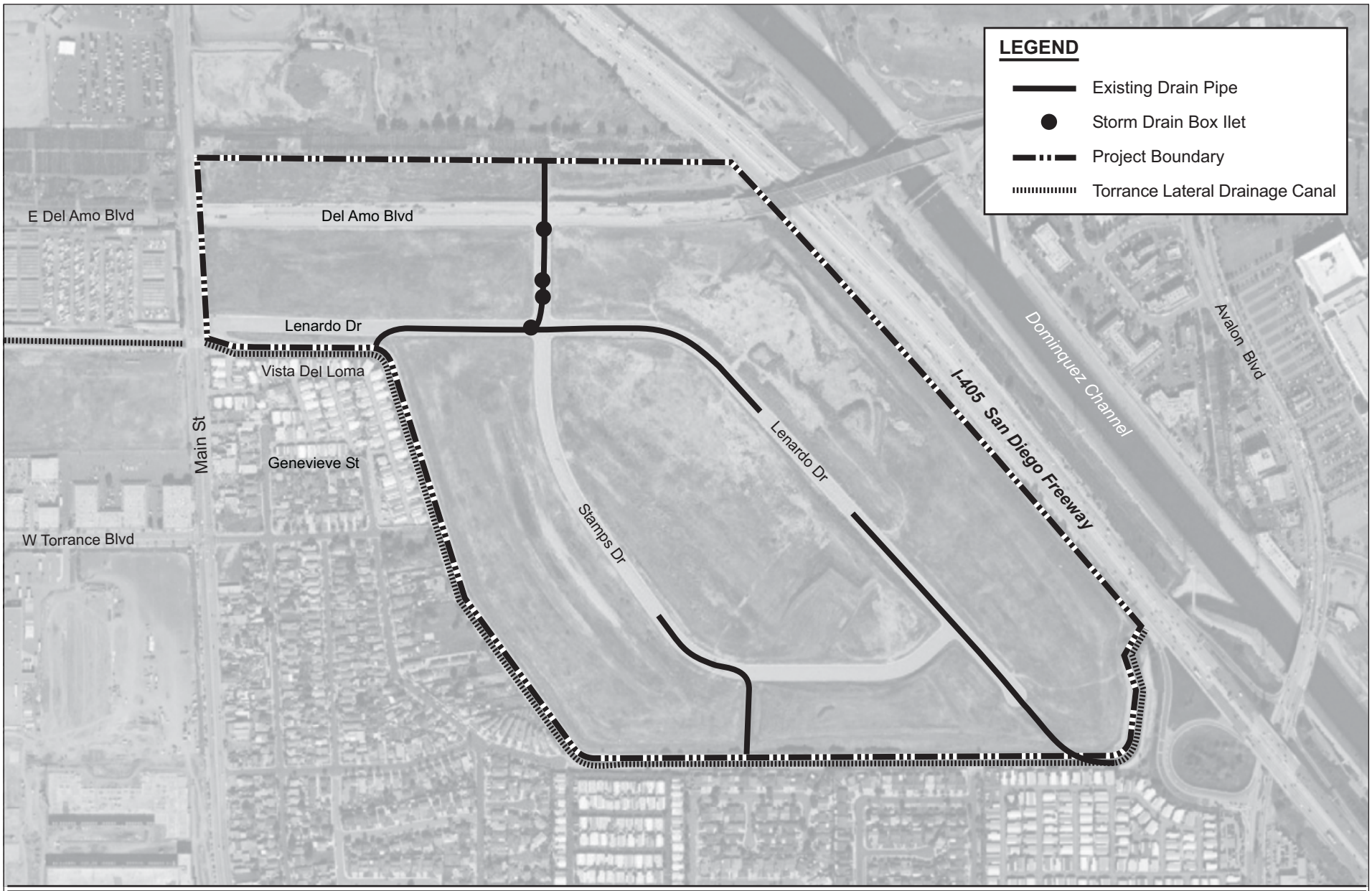

Figure 34
Existing Storm Drains

The Dominquez Channel is a concrete-lined, southeast-flowing regional flood control channel, which parallels the San Diego Freeway. In the vicinity of Wilmington Avenue, the Dominquez Channel turns toward the south and flows parallel to the Terminal Island Freeway. At San Pedro, the Dominquez Channel joins the Los Angeles Channel and continues to the Los Angeles Harbor. The maximum design capacity of the channel is approximately 16,340 cfs. The Torrance Lateral and the Dominquez Channel are used exclusively for flood control and storm runoff.

The design capacity of the storm drain system in Main Street and Del Amo Boulevard, adjacent to the Project site, and Lenardo Drive and Stamps Drive, within the Project site, was designed by the Los Angeles County Department of Public Works (LACDPW) to serve the future commercial/industrial development of the Project site. As such, the storm drain system is designed on the assumption of 100 percent impermeability of the developed site, in which all surface water is presumed to enter the existing storm drain systems.

The street drainage system consists of four principal reinforced concrete storm drains. Drain No. 1 is a south-flowing system located in Main Street, along the Project's western boundary. This drain begins north of Del Amo Boulevard, with a diameter of 66 inches, and, south of Del Amo Boulevard, increases in diameter to 72 inches. Flow continues to the Torrance Lateral Channel inlet.

Drain No. 2 consists of three main branches, including a 60-inch diameter south-flowing drain beginning north of Del Amo Boulevard and continuing to the northern intersection of Lenardo Drive and Stamps Drive. Four inlets flow into this portion of the drain. The second branch begins on Lenardo Drive approximately 800 feet southeast of the intersection with Stamps Drive. Six inlets flow into this 42-inch branch of the drain. At the intersection of Lenardo Drive and Stamps Drive, these two branches merge into a third branch, consisting of a single 84-inch drain that continues in a westerly direction for approximately 700 feet before outletting into the Torrance Lateral Channel.

Drain No. 3 begins on Stamps Drive approximately 1,600 feet south of the intersection of Lenardo Drive and Stamps Drive. Two inlets flow into this 36-inch drain at its northerly terminus. The drain then continues southeasterly along Stamps Drive for approximately 400 feet, where it accepts the flow from two additional inlets and increases in size to 48 inches. Drain No. 3 then changes direction and flows south to connect with the Torrance Lateral Channel.

Drain No. 4 begins at the southern intersection of Lenardo Drive and Stamps Drive, where four inlets drain into this 36-inch drain. Drain No. 4 then continues south along Lenardo Drive, where it increases to 42 inches and proceeds south to the Torrance Lateral Channel.

(2) Development District 3

(a) Surface Water Quality and Drainage

Surface water quality from Development District 3 has not been tested. Due to stockpiled fill soils and areas of thin vegetation, the potential for sediments in surface water runoff exists. Under existing conditions, flow is unrestrained over the ground surface (sheet flow) and flows to the north. The majority of this sheetflow percolates into the onsite soils or into the undeveloped land to the north. However, an area in the westerly portion of the site drains into Del Amo Boulevard on the west side of the Dominguez Channel. From existing street drains in Del Amo Boulevard, surface water enters the Torrance Lateral Channel from which it, ultimately, drains into the Dominquez Channel and Los Angeles Harbor. Contaminants are potentially present in storm water runoff from this parcel, depending on the former land use and the potential migration of contaminants onto the property. Although the parcel is currently vacant, a portion of the site, at one time, may have been developed as a dairy.[90]

According to prior geotechnical investigations, fill soils exist in Development District 3 to depths of approximately 8 feet. A soil-vapor survey completed in 1990 identified the presence of VOCs in soil vapor approximately 9 feet below ground surface (bgs). The presence of VOCs at that time suggested that some landfill gases may have migrated into Development District 3 from former landfills north and/or south of the property. Based on the site reconnaissance, interviews, and records review performed as part of the environmental assessments, there is no evidence to suggest prior onsite uses caused soil contamination.

3. ENVIRONMENTAL IMPACTS

a. Methodology

Water quality impacts potentially result from a change in the quality, quantity or direction of flow of storm water. Drainage patterns, drainage systems, and increase in runoff are evaluated to determine the potential for off-site flooding and erosion. Changes in the quantity and direction of surface water may result in flooding or incursion into contaminated areas, causing contaminants to enter the surface water through erosion or flushing. A review of water quality records for the former landfill site was conducted to determine the potential for the existing

[90] *BBL, Preliminary Draft Phase I and Initial Phase II Environmental Site Assessment Summary, Del Amo Gardens Site (July 6, 2005).*

contaminants to enter surface water runoff during construction of the Project. Conversely, applicable federal, state, and local water quality regulations were reviewed to determine the efficacy of such regulations in addressing the potential effects on surface water that could occur during construction and operation of the Project. Impacts were determined based on a comparison of the existing conditions of the Project site with the proposed use of the site and design of the Project.

b. Thresholds of Significance

(1) Construction

The Project would have a significant impact on surface water quality if:

- Construction activities result in or produce a substantial change in the current or direction of water flow.
- Construction activities cause pollution, contamination, or nuisance as defined in Section 13050 of the California Water Code or cause regulatory standards to be violated, as defined in the applicable NPDES storm water permit or Water Quality Control Plan for the receiving water body.

(2) Operation

The Project would have a significant impact on surface water quality if the Project would:

- Violate any water quality standards or waste discharge requirements;
- Provide substantial additional sources of polluted runoff; or
- Otherwise substantially degrade water quality.

c. Project Design Features

The Applicant would file a Notice of Intent (NOI) with the SWRCB for a NPDES General Construction Permit. In compliance with the NPDES Permit, the Applicant would prepare a SWPPP and identify the structural BMPs needed to minimize erosion during construction, stabilize construction areas, provide sediment control, and control pollutants associated with construction materials. Specific structural BMPs, depending on City approval, may include desilting basins, sandbagging of inlets, a gravel construction entrance to reduce dirt

tracking, and silt fences. Because of DTSC oversight of the remediation of the landfill site, all construction activities and BMPs would also be reviewed by the DTSC.

In addition, drainage and erosion control plans would be submitted to the City for approval and incorporated into the design of the Project. These would include the prohibition of any uncontrolled sheet flow into adjacent streets, properties, and the Torrance Lateral Channel.

The Applicant would also prepare a SUSMP for the Project, based on site-specific volume and flow treatment control design standards for post-construction conditions. The Applicant would also adhere to Source Control BMPs, which include protection of slopes and channels, stenciled drain inlets with prohibitive language (such as "NO DUMPING—DRAINS TO OCEAN") and/or provide graphical icons to discourage illegal dumping. Trash storage areas would be walled to prevent off-site transport of trash and drainage would be diverted from trash storage areas. Outdoor storage of materials and direct connection to storm drains from depressed loading docks (truck wells) would be prohibited. Runoff from parking areas would be treated before it reaches the storm drain system. The Applicant would also install Structural and Treatment Control BMPs, including catch basin inserts and vortex separators in Development Districts 1 and 2 and would install detention and infiltration systems in Development District 3, to assure that contaminants of concern would not enter the storm drain system. Required detention capacity in Development District 3 would be evaluated and installed in accordance with a detailed hydrologic study to assure that runoff from the future developed site would not contribute to any off-site flooding conditions which could cause contaminants to enter the site's surface water. No retention or infiltration would be permitted in Development Districts 1 and 2 since the impervious cap over the waste layers would prevent percolation. In addition, it is the intent of the landfill RAP to prevent any surface water from entering the waste layers or underlying groundwater. The Applicant would also provide verification of the maintenance for the implemented BMPs and submit annual or semi-annual certifications, as required by the City, that maintenance has been performed.

d. Project Impacts

(1) Construction

Construction associated with Development Districts 1 and 2 would require the excavation, movement, and on-site storage of approximately 1.5 million cubic yards of soil. Approximately 125 acres would be grubbed (vegetation and debris removed) and would be used for stockpiling of soils during mass grading. Deep dynamic compaction (DDC), which would require the use of water for compaction, is planned to occur over approximately 60 to 75 acres. Mass grading would be staged and soils would be stockpiled to allow backfill after DDC. The need to fill after DDC would require moving stockpiled soil at least twice.

Construction associated with Development District 3 would require the mass grading of onsite soils, removal of debris, and the import and compaction of fill soil. Vegetation and debris removal would occur over the entire 11-acre site. Water would be used for dust control and in the compaction process.

In addition to water added during the grading process, barren soils would also be exposed to rainfall during the construction phase. With such exposure, the potential exists for the mobilization of pollutants and the contamination of surface water runoff. As waters in contact with contaminated soils could be discharged from the Project site into the storm drain system, off-site contamination and turbidity could occur. However, such stormwater runoff would be controlled under an NPDES Construction General Permit, which would include, but would not be limited to, the preparation of a SWPPP to monitor and control stormwater runoff. The SWPPP would establish site-specific structural BMPs to assure that construction activities would not result in potential flooding or erosion or in pollution, contamination, or nuisance, as defined in Section 13050 of the California Water Code, or cause regulatory standards to be violated, as defined in the applicable NPDES storm water permit or Water Quality Control Plan for the receiving water body.

Specific structural BMPs implemented as project design features, may include desilting basins, sandbagging of inlets, a gravel construction entrance to reduce dirt tracking, and silt fences. A prior analysis of soils in Development District 3 found soil gas contamination in a portion of the site.[91] The contact of precipitation with contaminants in surface soils would be a potential source of surface water degradation within this portion of the Project site. Although recent testing has concluded that no soil gas is currently present,[92] mitigation is recommended to assure compliance with applicable water quality standards.

(2) Operations

With development of the Project as proposed, surface areas in Development Districts 1 and 2 would be almost entirely impermeable. Impermeable surfaces would include streets, driveways, parking areas, and building footings and slabs. The proposed waste cap, which would underlie much of the developed area within Development Districts 1 and 2, would also contribute to the site's impermeability. Onsite permeable surfaces would consist of only the perimeter slopes along the edges of Development Districts 1 and 2. Although new impermeable surfaces would increase water runoff from the site, the impermeability that would result due to

[91] *Converse Environmental West, Preliminary Site Assessment, 10-acre Parcel at Main and Del Amo, page 13 (February 26, 1990).*

[92] *BBL Preliminary Draft Phase I and Initial Phase II Environmental Site Assessment Summary, Del Amo Gardens Site (July 6, 2005).*

the waste cap would eliminate the exposure of surface water runoff to any contaminated soils. In addition, because no waste soils are located along the perimeter of Development Districts 1 and 2, the permeable area of this portion of the Project site would not be a source of surface water contamination. Thus, once Project construction is completed, surface water runoff from Development Districts 1 and 2 would not exceed water quality standards associated with existing waste materials that underlie this portion of the Project site.

Development District 3 would have a combination of permeable and impermeable areas. Driveways, sidewalks, building footprints, and any plazas and patios would be impermeable. Permeable areas would primarily consist of landscaped areas in the commercial portion of the site and landscaped open space associated with the residential portion of the development. In all Development Districts, the proposed drainage system would be designed to direct storm water, irrigation, and other effluent into the on-site drainage system and, from there, into the existing storm drain system in Del Amo Boulevard and Main Street. No uncontrolled sheet flow from any Project location would be directed or allowed to flow onto adjacent properties or directly into the Torrance Lateral Channel.

In an urban setting, post-construction storm water runoff has the potential to contribute oil and grease, suspended solids, metals, gasoline, pesticides, and pathogens to the storm water conveyance system. In accordance with state and federal regulations, such pollutants are reduced through procedures established in a site-specific Standard Urban Stormwater Mitigation Plan (SUSMP). A site-specific SUSMP would be required by the City as a compliance measure with the SWRCB 2001 MS4 Permit. Under the SUSMP, Structural, Treatment and Source Control BMPs would be required to reduce potential contamination levels in the Project's stormwater runoff. With the implementation of design features related to post-construction BMPs, the Project would control, remove, or reduce pollution in surface water runoff. The Project would comply with all of the requirements of the SUSMP, set forth in the City's NPDES, and would incorporate appropriate BMPs that are designed to control, remove, or reduce pollution in surface water runoff. In addition, the engineering design of the Project's storm drain system would prevent uncontrolled sheet flow.

BMPs that require on-site retention would not be implemented in Development Districts 1 and 2 since no infiltration into the underlying whole layers would be permitted. Instead, in compliance with the requirements of the SUSMP, BMPs that treat surface water runoff by removing contaminants before water enters the storm drain system would be employed. Treatment BMPs for Development Districts 1 and 2, previously described as Project design features required by the DTSC, include catch basin inserts and vortex separators. Other or additional BMPs would be implemented, if required, to remove operational contaminants. Operational contaminants, such as vehicle oil and grease from parking lots, would be regulated by the Project's SUSMP permit, which would be monitored by the City of Carson. Development District 3 would contain permeable areas associated with landscaped open space. Under the

SUSMP, detention and infiltration systems would be installed in Development District 3 to treat surface water runoff before it enters the off-site storm drain system.

Flood conditions have the potential to introduce a range of pollutants to stormwater runoff. Under SUSMP requirements, peak storm water runoff discharge shall not exceed the estimated pre-development rate for developments where the increased peak storm water discharge will result in increased potential for downstream erosion. Due to the increased impermeability of Development Districts 1 and 2, surface water runoff during peak storm conditions would substantially increase, compared to existing conditions. Surface water runoff would be collected by a system of concrete street drains and directed to the Torrance Lateral Channel. The LACDPW's peak storm design parameters for the surrounding storm drain system assume 100 percent impermeability of Development Districts 1 and 2, which are master-planned for commercial/industrial uses. Since the future impermeability of the Districts 1 and 2 would not exceed the design parameters of the surrounding storm drain system, flooding during a peak storm event is not anticipated.

Proposed impermeable areas in Development District 3 would also increase surface water runoff during peak storm conditions and, as such, site development has the potential to increase stormwater runoff compared to existing conditions. In addition, the diversion of existing sheetflow runoff in Development District 3 from permeable areas to the north would increase the volume of stormwater runoff entering the existing storm drain system. The proposed detention and infiltration systems in Development District 3, however, would reduce runoff to appropriate design levels before it enters the off-site storm drain system. Therefore, surface water runoff from Development District 3 would not exceed the capacity of the storm drain system during peak flow. Since exceeding storm drain capacity would not occur, impacts associated with flooding and erosion would be less than significant.

Appropriate design and compliance with the requirements of the Project's SUSMPs would ensure that the Project would not result in substantial additional sources of polluted runoff or otherwise substantially degrade water quality. Since the Project would not violate any water quality standards or waste discharge requirements or result in substantial additional sources of polluted runoff, the impact to surface water quality during Project operations would be less than significant.

The implementation of the Final RAP (Upper OU) could potentially contribute additional surface water into the existing storm drain system. Under the Final RAP, groundwater would be extracted, routed to the treatment unit, and then discharged into the storm drain system for off-site discharge into the Torrance Lateral Channel or local sanitary sewer system.[93] Since the

[93] *Brown & Root, Op. Cit., page 7-8.*

intent of the treatment system is to remove pollutants from the extracted water, treated effluent would not affect surface water quality. The volume of treated effluent would not be substantial enough to overwhelm the existing storm drain system, and since disposal would be discretionary, disposal during peak storm events would be avoided. Therefore, treated water would not cause off-site flooding or any other significant water quality impacts.

4. MITIGATION MEASURES

Impacts associated with surface water runoff and water quality in Development Districts 1 and 2 would be less than significant and no mitigation measures would be required. However, since potential, unremediated soil contamination exists in Development District 3, the following mitigation measure is recommended:

Mitigation Measure F-1: Soils in Development District 3 shall be tested prior to the issuance of a grading permit, in accordance with the recommendation of Blasland, Bouck and Lee, Inc.'s (BBL's) Preliminary Draft Phase I and Initial Phase II Environmental Site Assessment Summary, Del Amo Gardens Site (July 6, 2005). If contaminants are found in excess of State of California maximum contamination levels (MCLs), the soils shall be addressed in accordance with a DTSC-approved program.

5. CUMULATIVE IMPACTS

Section III, Environmental Setting, of this EIR identifies 36 related projects that have the potential, in conjunction with the proposed Project, to result in a cumulative impact. The 36 related projects could potentially contribute point and non-point source pollutants to surface waters, resulting in a cumulative impact to water quality. However, all new development and redevelopment projects over more than one acre, or meeting other SUSMP land use criteria under the City (or County) MS4 Permits, must comply with NPDES requirements during construction and operation, including developing and implementing site-specific SWPPPs and SUSMPs. Thus, each qualifying related project would be evaluated individually to determine appropriate BMPs and treatment measures to avoid impacts to surface and groundwater quality. With the incorporation of these measures, it is anticipated that the development of the identified related projects would not result in water quality impacts beyond acceptable regulatory levels. Under SWRCB water quality policy, small projects are exempted from NPDES permit requirements, since they are not considered a substantial source of water quality degradation. Therefore, the related projects that would be too small to require NPDES permitting would not substantially contribute to cumulative water quality impacts. As discussed, development of the Project would reduce exposure to existing pollutants and improve the quality of the water

discharged from the Project site, compared to existing conditions. In addition, potential pollutants associated with the operation of the Project would be treated prior to discharge into the existing storm drain system and, as such, the Project would not cumulatively contribute to degraded water quality. In addition, the City of Carson Building Official and Department of Engineering would review all construction projects on a case-by-case basis to assure that sufficient local and regional drainage capacity is available. Cumulative impacts to surface water quality are concluded to be less than significant based on compliance with existing regulations.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

Through the implementation of proposed drainage and erosion control plans, Best Management Practices, and water filtering and flood control devices, development of the proposed Project would not increase existing pollution and contamination, create a nuisance as defined in Section 13050 of the California Water Code, cause regulatory standards to be violated, or result in a permanent, adverse change to the movement of surface water sufficient to produce a substantial change in the current or direction of flow. Therefore, impacts associated with surface water quality would be less than significant.