CHAPTER 4.0 – ENVIRONMENTAL EFFECTS FOUND NOT TO BE SIGNIFICANT

4.1 Effects Found Not to be Significant as Part of the EIR Process

4.1.1 Aesthetics

Aesthetics impacts are addressed in Section 4.2 of the EOMSP Final EIR. The previously certified EIR identified significant and mitigable impacts to Landform Alteration/Visual Quality. The landform alteration impacts were associated with grading of the hillside residential area. The visual quality impacts were associated with industrial development adjacent to Johnson Canyon in the northern portion of the Specific Plan area. No significant landform alteration and visual impacts were expected from development of the flatter industrial and commercial uses (which include the project site) in the EOMSP area. A number of mitigation measures were recommended to avoid or reduce potentially significant impacts. Neither the landform alteration or visual quality impacts and the associated mitigation measures identified in the prior EIR are applicable to the proposed project.

A NOP and *Environmental Review Update Checklist Form for Projects with Previously Approved Environmental Documentation* was prepared by the County on April 6, 2006 (Appendix A). In the checklist form, the County determined that since the previous EIR was certified, there have been changes in the project which could result in a new significant visual impact. The change that triggered a potentially significant new visual impact is the fact that instead of applying for a site plan to develop specific land uses as envisioned in the Specific Plan, the project applicant is requesting approval of a TM to subdivide the property and implement a Preliminary Grading Plan to allow phased grading over an extended period of time (i.e., approximately five years). This could result in large graded areas being left barren as individual site plans are processed for specific uses, resulting in a potentially significant aesthetic impact (County of San Diego 2006c). Therefore, the following discussion addresses the project-specific aesthetic impacts of the Otay Crossings Commerce Park project in the context of the prior analysis.

Existing Visual Setting/Character

The project site is currently undeveloped and features a broadly rolling mesa that ascends north and off site to the San Ysidro Mountains (See Figure 1-9). To the south, the project site and surroundings flatten and steadily descend toward the U.S.-Mexico International Border. Two unnamed drainages cross north-south through the northern half of the project site, while a third unnamed drainage traverses in a northeast-southwest direction across the southern edge of the property. Site elevations range from a high of 674 feet above mean sea level (amsl) in the northeast to a low of 400 feet amsl near the U.S.-Mexico International Border. A slope analysis was conducted of the project site and determined that approximately 1.9 acres contains steep slopes greater than 25 percent gradient (SCEI 2005). The steep slopes occur primarily in the northeast corner of the property, with minor pockets of steep slopes occurring within the on-site drainage courses. Approximately 299 acres of the site contain slopes less than 15 percent gradient (Table 1-4). Figure 1-10 illustrates the existing site topography.

The site can be characterized by undeveloped open space and features non-native grassland on the broader sections of the property while coastal sage scrub patches occur on the steeper slopes in the

northeast. Figure 3.1-1 contains an illustration of the vegetation communities that occur on site. The drainages on site are primarily unvegetated, with small sections of non-native vegetation. A series of narrow dirt roads criss-cross the site and are maintained by the U.S. Border Patrol for domestic security purposes. No unique or prominent landforms or rock outcrops occur on the project site.

The project area, in particular properties west of the project site in the City of San Diego and the western edge of the EOMSP area, contain industrial development interspersed with commercial uses. The industrial development features large subdivided areas featuring large buildings that are industrial in form with landscaping along the streetscape. This industrial character is envisioned by the EOMSP, as described below.

Existing Landforms

The EOMSP Final EIR identifies two dominant landforms in the Specific Plan area, the San Ysidro Mountains and Otay River Valley. The mountains are clearly visible from and closest to the eastern portion of the Specific Plan area, including the project site; the river valley is situated north of the Specific Plan area, approximately one and one-half mile to the northwest and out of visible range of the project site. Johnson Canyon, a finger canyon of Otay River Valley, approaches within approximately one-half mile of the project site's northwest corner, but is not visible from the property because of intervening ascending terrain. The upper slopes of the project site are in the foreground of the larger backdrop of the San Ysidro Mountain views. A few roads, such as the Otay Mountain Truck Trail and some dirt trails, transect the mountains.

Existing Views

Short-range views of the project site are available from the corner of Otay Mesa Road and Alta Road and from the various dirt roads that cross the Otay Crossings Commerce Park property. Long-range views of the project site are available from existing industrial development and public roadways located to the west. Short-range viewers include people traveling local roads in the eastern portion of the Specific Plan area, including employees and customers of the adjacent auto auction yard; employees and visitors traveling to the state prison, County detention facility and other destinations to the north; and U.S. Border patrol personnel working on and around the project site. Long-range views of the upper slopes of the site are available from the residences along Old Otay Mesa Road and industrial development to the west. Topography surrounding the site combined with distance prevent comprehensive views of the property from more distant vantage points. The U.S.-Mexico International Border is visible from the project site as a line beyond which industrial and residential portions of the City of Tijuana are visible. As such, the project site is visible mainly from points west and south.

There are no public parks with views of the project site. Otay Mountain Truck Trail transects through the Otay Mountain area north and east of the site and the western portion of the trail winds up the foothills and is situated approximately 1 mile north of the project site. The Otay Mountain Truck Trail, accessed from Kuebler Ranch Road north of the project site, provides access to the Bureau of Land Management (BLM) Otay Mountain Wilderness Area. Besides the U.S. Border Patrol, less than 1,000 recreational drivers use the road each year. The project site is likely visible from some areas along this road as it winds its way uphill before trending generally eastward across the mountains.

Applicable Plans and Policies

Applicable policies protecting and preserving landforms and visual quality within the EOMSP area are contained within the Hillside Review Policy, RPO and the Conservation and Scenic Highway Elements of the County General Plan (as described in Section 4.2 of the EOMSP Final EIR). In addition, the EOMSP contains policies within its Conservation and Urban Design Elements and Site Planning and Design Guidelines (Design Guidelines) that are applicable to the proposed project.

County Hillside Review Policy

The County's Hillside Review Policy requires special analysis and review of projects occurring on hillsides and provides general hillside development criteria. As noted in the EOMSP Final EIR, the intent of the policy is to minimize disturbance of natural terrain and to preserve or enhance the aesthetic quality of the County.

County Resource Protection Ordinance

The County's RPO identifies steep slopes (containing a natural gradient of 25 percent with a minimum rise of 50 feet) as one resource that defines sensitive lands protected by the ordinance (County of San Diego 1991). The RPO requires avoidance of steep slopes, to the extent practicable, and minimizes development potential of such areas by providing a density formula that links yield to slopes. As discussed in the EOMSP Final EIR, open space easements are required over all steep slopes, except for the allowable encroachment area. As noted above, approximately 2.0 acres of the site contain steep slopes, as defined by the RPO.

County Light Pollution Dark Sky Ordinance

The Dark Sky Ordinance (Division 9 of the Light Pollution Code [LPC]) is a County Regulatory Ordinance (Division 9, §59.101 - 59.115) that restricts the use of outdoor lighting that emits undesirable light rays into the night sky. The intent of this code is to minimize lighting that may affect astronomical research at the Mount Palomar and Mount Laguna observatories. The LPC defines two zones in the unincorporated portion of San Diego County, Zone A and B. Zone A consists of areas within a 15-mile radius of Mount Laguna and Mount Palomar, Zone B includes all remaining areas within the unincorporated County which are not defined as Zone A. The project site and the off-site utility improvement areas are located within Zone B.

County General Plan

The Conservation Element of the San Diego County General Plan identifies Otay Mountain (within the San Ysidro Mountains) as a Resource Conservation Area (RCA) that is significant for both scenic and visual resources, and for biological habitat. The designation recognizes the Otay Mountain area because it is a major scenic landmark for the region (County of San Diego 2002a). As shown in Figure 4.1-5 in the EOMSP Final EIR, the Otay Mountain RCA encompasses the San Ysidro Mountains, but does not extend onto the project site.

The Scenic Highways Element of the County General Plan identifies two roadways within two miles of the proposed project as potential third priority scenic roadways: (1) State Route 125 (SR-125) from the U.S.-Mexico International Border north to Telegraph Canyon Road, and (2) Harvest Road from

the U.S.-Mexico International Border to Proctor Valley Road (County of San Diego 2002a). SR-125 opened in November 2007. The southern portion of Harvest Road is aligned between industrial developments, while the northern portion is unpaved and parallels the eastern edge of an industrial development and the western edge of the open space between it and the project site. Despite the potential for views from these roadways, neither is formally designated by the County as scenic at this time.

East Otay Mesa Specific Plan

The Subarea 2 of the EOMSP contains policies that govern the aesthetic qualities of industrial development within the Specific Plan area. The entire EOMSP area zoned Mixed Industrial is within the "B" Designator and are subject to the Community Design Review Area regulations, known as the Site Planning and Design Guidelines. The "G" Designator occurs in portions of the EOMSP area zoned for Hillside Residential/Open Space. Applicable policies from the Specific Plan are incorporated by reference herein and are summarized in Table 4.1-1.

The EOMSP Design Guidelines are an implementation tool for the EOMSP by serving as criteria for the review of industrial building projects and subdivision applications by County staff. Site planning, architecture and signage guidelines are outlined in the document. All industrial development within the EOMSP must comply with the Design Guidelines and receive design review by County Staff. Grading, landscaping, lighting and public utility policies from the Design Guidelines applicable to the TM/Preliminary Grading Plan are incorporated by reference herein and summarized in Table 4.1-1. Site plans submitted after TM/Preliminary Grading Plan approval would also be required to comply with the Design Guidelines related to lot and building development and landscaping.

Guidelines for the Determination of Significance

The following guidelines of significance are based on the Guidelines for Determining Significance and Report and Content Requirements for Visual Resources approved by DPLU on July 30, 2007.

A significant impact to aesthetics (visual resources) would occur if the proposed project:

1. Would introduce features that would detract from or contrast with the existing visual character and/or quality of a neighborhood, community or localized area by conflicting with important visual elements or the quality of the areas or by being inconsistent with applicable design guidelines.

2. Would result in the removal or substantial adverse change of one or more features that contribute to the valued visual character or image of the neighborhood, community or localized area, including but not limited to landmarks (designated), historic resources, trees and rock outcroppings.

3. Would substantially obstruct, interrupt or detract from a valued focal and/or panoramic vista from a public road, a trail within an adopted County or State trail system, a scenic vista or highway, or a recreation area.

4. Would not comply with applicable goals, policies or requirements of an applicable County Community Plan, Subregional Plan or Historic District's Zoning.

Analysis of Project Effects and Determination as to Significance

Visual Character (Guideline 1)

The EOMSP Final EIR states that buildout of the Specific Plan would result in intense development on the flat portions of the project area with industrial and commercial uses, two freeways extensions and a network of surface streets (County of San Diego 1994a). The previously certified EIR also anticipated that the hillside portions of the Specific Plan area would be developed with very low-density residential uses and access roads. The EOMSP Final EIR acknowledges that instead of undeveloped open space, the Specific Plan area would change in character to feature buildings, landscaping, streets and parking lots. No grading plans were reviewed as part of the EOMSP Final EIR; however, the previous analysis concluded that landform alteration would not be substantial during Specific Plan implementation.

Development of the proposed Otay Crossings Commerce Park project would involve the subdivision of the land, recordation of open space easements and implementation of the Preliminary Grading Plan (see Figure 1-4). The proposed TM would dedicate 47.1 acres of open space easements across the steep slopes and sensitive resources contained within Lots 57, 58 and 59 of the property. Therefore, no grading of unique topographic features, naturally steep slopes exceeding 25 percent gradient, or ridgelines is proposed.

The project applicant would conduct phased grading of industrial building pads as detailed in Chapter 1.0, *Project Description*, phased construction of infrastructure and roads and phased installation of the landscape plan. As shown in Figure 1-4, grading would be implemented in two phases from north to south as final maps are recorded for each of the five development units. Phased grading of approximately 265 acres of the 311-acre site would require 1.8 million cubic yards of balanced cut and fill. The two major grading phases would be internally balanced. Maximum cut slopes would be 25 feet, while the maximum fill slopes would be 12 feet. The highest cut slopes would occur on lots 16 through 18. The deepest fill slopes would occur on lots 1, 7 and 8. One of the two natural drainages in the northern half of the site would be placed in a parallel rock-lined drainage channel, while the westerly drainage would be placed underground consistent with its configuration on the parcel north of the site. The third on-site drainage in the southern half of the site would be retained in place. A fourth drainage along the southeastern property boundary would be placed in a vegetated drainage channel that would parallel the eastern boundary. See Figure 1-4 for an illustration of the drainage channel locations. Building pad elevations would range from a high of approximately 606 amsl on Lot 1 along Otay Mesa Road descending in elevation to a low of 490 feet amsl on Lot 56 near the U.S.-Mexico International Border. Topographically, the existing rolling terrain would be leveled out to form broad industrial park building pads which would emulate the general landform of the project site by terracing down in elevation toward the south. No unique landforms or steep slopes would be modified in conjunction with the proposed grading plan.

Following the completion of each grading phase, the project applicant would install roads, landscaping and erosion control (see Figure 1-8 and Chapter 1.0 for a detailed description of the landscape concept plan). Landscaping along major public roads would consist of ornamental evergreen street trees and landscaped berms, featuring trees and groundcover. Slopes internal to the project would be planted with ornamental trees, shrubs and ground cover, while slopes adjacent to open space easements would be planted with trees, shrubs and groundcover of the native variety. A non-invasive hydroseed mix would be applied on the individual lots to stabilize them for erosion control and to provide temporary

cover until the individual lots are developed. Hydroseeding would be applied to all graded slopes and all building pad areas not scheduled for improvements within six months of completion of grading. Future site plan owners/applicants would be responsible for implementing permanent landscape treatments within their development sites in conjunction with individual site plans and building permits. The proposed project plan is consistent with the grading and landscaping requirements of the EOMSP Design Guidelines. Therefore, extensive areas of barren land would not be created by the proposed project because a comprehensive landscape plan would be implemented in phases along all public streets and across all graded lots in conjunction with project grading operations.

With regard to project compliance with the goals, standards or policies related to grading, the proposed project would not disturb steep slopes protected by the County RPO and EOMSP policies. Specifically, the proposed project would comply with Hillside Review Policy, RPO, EOMSP Policy LU-11 (regarding the hillside residential district), EOMSP Policy COS-01 (regarding protecting steep slopes) and EOMSP Policy COS-2 (regarding the development limits line) by placing naturally occurring steep slopes in permanent open space. Consistent with the Urban Design Element of the Specific Plan (Policy UD-1), the proposed project would place development at the base of the San Ysidro Mountains and would preserve in open space steep slopes above that development that connect with the mountains. This, in turn, would minimize grading and enhance views by keeping development farther from the mountain landform than anticipated in the EOMSP Final EIR. Furthermore, the proposed project would implement a comprehensively planned streetscape that would enhance the identity and image of the Specific Plan area in accordance with EOMSP Policy UD-2 and Policy UD-6. All utility lines would be underground and above-grade facilities, such as traffic signal vaults, would be screened with landscaping pursuant to EOMSP Policy UD-7. See Table 4.1-1 for a summary of the project's consistency with EOMSP policies.

The proposed project would not introduce features or contrast with the existing visual character or quality of the area by conflicting with important visual elements or the quality of development in the area. Therefore, less than significant impacts to aesthetics would result from project implementation.

Removal of Landmarks (Guideline 2)

Development of the project site would not result in the removal or substantial change to any local landmark, historic resource, trees and/or rock outcrop that contribute to the visual character or image of the East Otay Mesa Specific Plan area. No such visual resources occur on site. Therefore, no impacts of this type would occur.

Views (Guideline 3)

With regard to potential impacts on existing valued views in the project area, visual accessibility to the site is currently limited because only the northwestern corner of the property is accessible from a paved public road, as described above. No trails exist on site or on property immediately adjacent to the site. Long-range views of the project from Otay Mountain Truck Trail would be limited in duration and extent by the fact that the trail is located 1 mile north of the project site at an approximate elevation of 800 to 1,600 amsl. For this reason, there is no potential for the proposed project to obstruct or interrupt views from the truck trail, which is elevated 200 to 1,000 feet above the project site. With regard to potential impacts to focal or panoramic vistas from the trail, the character of the site would shift from undeveloped land to an urban, industrial subdivision (although no buildings would be constructed by the applicant). However, when viewed from the distance and

elevation of the truck trail, the project would not substantially detract from long-range views of Otay Mesa, Otay River Valley and the surrounding mountains and hillsides. No on-site steep slopes would be graded and the on-site landforms would not dramatically change, given that the average elevation change proposed by the Preliminary Grading Plan would be about 15 feet. The industrial character of the proposed project would appear to blend with the existing industrial development in the southern portion of the mesa and northern Mexico.

As far as potential impacts to designated scenic highways or roadways, the proposed project would not be visible from the travel lanes of SR-125 or the future alignment of Heritage Road since they are located over one mile away from the project site and lower in elevation that the central portion of Otay Mesa (where the roads are projected to be built). In addition, development is not proposed on the upper (more visible) slopes of the site. The proposed project would place these upper slopes in open space easements and would not affect views of the mountains from Otay Mesa.

Therefore, the proposed project would result in less than significant impacts to valued vistas in the project area.

Policy Compliance (Guideline 4)

Overhead lighting would be installed along all roadways proposed as part of the project. Traffic signals would also be constructed at several key intersections on site. Future site plans and associated buildings would involve the installation of security lighting, accent lighting and internal building lighting. Therefore, new sources of night lighting would be installed by the project applicant and future building owners. The EOMSP Design Guidelines require all new development to comply with the County Dark Sky Ordinance. Due to its distance from Palomar Observatory (i.e., more than 60 miles away) and the fact that the types of lighting proposed would not substantially increase night lighting in the area and would comply with the ordinance, less than significant impacts from night lighting are identified.

Analysis of Cumulative Impacts

Cumulative landform alteration and visual quality impacts of implementing the EOMSP were discussed in Section 7.2 of the EOMSP Final EIR. Based on that prior analysis, it was determined that some of the projects within the EOMSP area would require significant amounts of landform alteration, while other projects on Otay Mesa would require very little landform alteration. It was further noted that none of the projects in the EOMSP area would alter the basic landforms of the three major features in the area: Otay River Valley, Otay Mesa and the San Ysidro Mountains. It was, therefore, concluded in the prior EIR that cumulative visual impacts would not be significant.

A list of current projects was developed for the EOMSP area to re-evaluate the conclusions reached in the prior analysis. For the purposes of this discussion, the cumulative study area is those projects proposed within both Subareas 1 and 2 of the EOMSP area (identified as projects 1 through 23 and projects 29 and 30 in Figure 1-12). The EOMSP area features both level mesa and steep hillsides. No landmarks, mature trees or rock outcrops are prominent in the area. The only two designated scenic roadways are SR-125 and Heritage Road, as described above. None of the proposed projects within the cumulative study area would alter the basic landforms that contribute to the scenery that will be visible from those corridors. Development proposed within the EOMSP area would be required to incorporate design features, such as contour grading and landscaping, consistent with the Site

Planning and Design Guidelines of the EOMSP. Incorporation of the guidelines would ensure continuity of development in terms of architectural massing, setbacks, grading and landscaping which would not detract from existing visual character and would be visually compatible with the pattern of industrial development that has been established in the East Otay Mesa area. The only project in the cumulative study area that would substantially alter landforms is the Otay Hills Extraction Operation (Project 4) since it would involve extraction operations within the steep hillsides in the lower foothill area of the eastern portion of the EOMSP area. All other projects, including the proposed project, are proposed on the level or gently sloping mesa and would not require extensive grading to implement. Although the visual character of the EOMSP area would change from undeveloped open space to urbanized industrial/commercial development upon construction of projects in the cumulative study area, the change would not introduce features that would detract from or contrast with existing visual character, would not result in the removal of valued visual features, would not obstruct or interrupt any valued vista, and would be consistent with what was anticipated in the prior EIR. Therefore, cumulative aesthetics impacts would be less than significant.

4.1.2 Geology and Soils

Geology and soils issues are addressed in Section 4.5 of the EOMSP Final EIR. That analysis identified a number of potentially significant and mitigable impacts related to seismic and non-seismic hazards, and required additional site-specific geotechnical investigation. Subsequent to the previously described project *Environmental Review Update Checklist Form for Projects with Previously Approved Environmental Documentation*, the County concluded that significant geology and soils impacts could potentially be identified during site-specific analysis. A project geotechnical investigation was conducted by GEOCON, Inc. (GEOCON) to conform with the stated requirements of the EOMSP Final EIR (GEOCON 2004). This analysis involved review of pertinent information such as published literature, maps and aerial photographs, as well as site reconnaissance, geologic mapping, trenching, sampling and laboratory analysis. The results of the referenced geotechnical investigation are summarized below along with other applicable data, with the complete report included as Appendix K.

Existing Conditions

Regional Geology/Topography

The project site is located within the Peninsular Ranges Geomorphic Province, a region characterized by northwest-trending structural blocks and intervening, generally parallel, fault zones. Typical lithologies in the Peninsular Ranges include a variety of igneous intrusive (i.e., formed below the surface) rocks associated with the Cretaceous (between approximately 65 and 135 million years old) Southern California Batholith (a large igneous intrusive body). Batholithic rocks in western San Diego County are often intruded into Jurassic (between approximately 135 and 195 million years old) metavolcanic and/or metasedimentary units, with basement rocks in coastal areas locally overlain by a sequence of Tertiary (between approximately 2 and 65 million years old) marine and non-marine sedimentary strata. These sedimentary rocks are associated mainly with a number of sea level transgression and regression cycles (i.e., advances and retreats) that have occurred over approximately the last 55 million years. Geologic exposures in the southwestern corner of San Diego County (including the project site as described below) consist primarily of Jurassic metavolcanic and Tertiary sedimentary rocks, with batholithic rocks generally occurring further to the east.

Topographically, the Peninsular Ranges Province is composed of generally parallel ranges of steep-sloping hills and mountains separated by alluvial valleys. More recent uplift and erosion has produced the characteristic canyon and mesa topography present today in western San Diego County, as well as the deposition of surficial materials including Quaternary (less than approximately two million years old) alluvium, colluvium, and topsoil.

Site Geology/Topography

Three unconsolidated soil deposits and three geologic formations were observed on site during project geotechnical investigation. The soil deposits include undocumented fill, native topsoils and alluvium, while the geologic formations include an unnamed Tertiary-age fanglomerate, the Tertiary-age Otay Formation and the Jurassic-age Santiago Peak Volcanics. The unnamed fanglomerate deposit was observed in the southern portion of the site, and is locally interbedded with the Otay Formation (with both units overlying the Santiago Peak Volcanics). The Otay Formation is present in much of the project site, while the Santiago Peak Volcanics outcrop in the northeastern corner of the property and likely underlie the entire site at depth. Alluvial deposits are associated primarily with larger on-site drainages, while shallow deposits of Holocene (less than approximately 11,000 years old) topsoils overlie much of the site. Additional description of geologic and surficial units within the project site is provided below under Stratigraphy.

The project site is currently undeveloped, with existing on-site land uses limited to unpaved roads and trails. On-site topography includes gently to steeply sloping terrain, and generally grades down from north to south. Local elevations range from approximately 674 feet amsl in the northeastern site area, to 400 feet amsl near the U.S.-Mexico International Border. Surface drainage within the project site is generally north to south (although local flow directions vary with topography), and occurs as both point flow within defined drainage courses, and as non-point runoff (sheet flow, refer to Subchapter 4.1.3, *Hydrology and Water Quality*, for additional description of local drainage patterns).

Stratigraphy

Surficial and geologic exposures within the project site include undocumented fill, native topsoils, Quaternary alluvial deposits, an unnamed Tertiary fanglomerate, the Tertiary Otay Formation, and the Jurassic Santiago Peak Volcanics. Summary descriptions of these units are provided below in order of increasing age, with additional information included in Appendix K.

Undocumented Fill Deposits. Undocumented fill (i.e., undocumented for conformance with applicable engineering standards) was observed in the southeastern portion of the site during geotechnical investigation. These deposits are rocky in nature, and were interpreted as disposal sites for rocks removed from nearby agricultural properties.

Native Topsoils. Mapped topsoils within and adjacent to the project site include two individual soils of the Diablo Series present in much of the northern and central areas, and four soils of the Huerhuero Series occurring in the southern and northeastern-most portions of the site. Diablo soils encompass well-drained, moderately deep to deep clays derived from calcareous sandstone and shale, while Huerhuero soils consist of moderately well-drained loams with a clay subsoil derived from sandy marine sediments (Natural Resources Conservation Service [NRCS], formerly the U..S. Soil Conservation Service [SCS] 1973).

Quaternary Alluvium. Quaternary alluvium was observed in on-site larger drainages, and is estimated to range between approximately 3 to 5 feet thick. Alluvial materials within the site consist generally of soft to stiff silty and sandy clay, with zones of loose clayey sand.

Tertiary Fanglomerate. The unnamed fanglomerate deposit was observed in the southern site area and consists of dense, moderately cemented conglomeritic sandstones, and sandy boulder conglomerates.

Tertiary Otay Formation. The Tertiary Otay Formation is present in much of the site, and consists primarily of medium dense to dense, silty fine- to medium-grained sand, and fine-grained sandy silt with silty and sandy clay. While not observed during on-site investigation, the Otay Formation may also contain lenses of bentonitic clay. As previously noted, the Otay Formation locally interfingers with the unnamed fanglomerate deposits.

Jurassic Santiago Peak Volcanics. The Santiago Peak Volcanics are present in the northeastern portion of the site, and consist of slightly metamorphosed, moderately- to highly-jointed volcanic rock. This unit is very hard and resistant below the surficial weathering zone, and likely underlies the entire site at depth as previously noted.

Groundwater

No evidence of shallow groundwater or related surface features (e.g., seeps or springs) was observed during on-site geotechnical investigation, including 42 exploratory trenches excavated to depths of between approximately 2 and 16 feet below existing grade (Appendix K). Additional description of local and regional groundwater conditions is provided in Subchapter 4.1.3.

Structure/Seismicity

The project site is within a broad, seismically active region characterized by a series of northwest-trending faults associated with the San Andreas Fault System. No active or potentially active faults are mapped or known to occur within or adjacent to the project site, with the closest active faults located within the Rose Canyon and Coronado Banks fault zones, approximately 14 and 20 miles to the west, respectively. Active faults are defined as those exhibiting historic seismicity or displacement of Holocene materials, while potentially active faults have no historic seismicity and displace Pleistocene (between approximately 11,000 and 2 million years old) but not Holocene strata. Based on the described fault locations and seismicity, a maximum peak ground acceleration (or ground shaking) value of approximately 0.2g (where g equals the acceleration due to gravity) is estimated for the project site, in association with a Maximum Magnitude Earthquake[1] of 7.2 along the Rose Canyon Fault Zone (Appendix K). The project site and vicinity are not within or adjacent to any areas of mapped faults, Alquist-Priolo or County Special Study Fault Zones, or Near-Source Shaking Zones (County 2007e).

[1] A Maximum Magnitude earthquake is defined as the maximum earthquake that appears capable of occurring under the presently known tectonic framework.

Regulatory Framework

Development of the proposed project is subject to a number of regulatory requirements and industry standards related to potential geologic hazards. These requirements and standards typically involve measures to evaluate risk and mitigate potential hazards through design and construction techniques. Specific guidelines encompassing geologic criteria that may be applicable to the design and construction of the proposed project include: (1) the San Diego County General Plan Seismic Safety Element (1991b); (2) the County Guidelines for Determining Significance, Geologic Hazards (2007e); (3) Title 8, Division 4 (Design Standards and Performance Requirements) and Division 7 (Excavation and Grading), and Title 5, Division 1 (Amendments to the State Building Standards Code) of the County Code of Regulatory Ordinances; and (4) the International Code Council, Inc. (ICC) International Building Code (IBC; ICC 2006), and the related California Building Code (CBC; California Code of Regulations [CCR] Title 24). Summary descriptions of the listed geologic standards are provided below, with additional discussion provided under the analysis of project effects. Regulatory requirements and potential impacts related to erosion and sedimentation and the disposal of extracted groundwater (if required) are discussed in Subchapter 4.1.3 of this EIR, due to their relationship to hydrologic and water quality issues.

County Standards. The San Diego County General Plan Seismic Safety Element is intended to identify and evaluate seismic hazards in the County, and to provide policies to reduce the loss of life and property damage related to seismic hazards. Associated policies in the Seismic Safety Element applicable to the proposed project include requirements for submittal and approval of appropriate geotechnical investigations, as well as conformance with applicable laws and standards such as the referenced Geologic Hazard Guidelines, the Alquist-Priolo Act (for Fault-Rupture Hazard Zones), and the IBC/CBC.

The County Geologic Hazard Guidelines provide direction for evaluating environmental effects related to geologic hazards. Specifically, these guidelines address potential adverse effects to life and property (pursuant to applicable CEQA standards) from hazards including fault rupture, ground shaking, liquefaction, landslides, rock falls, and expansive soils. Significance guidelines are identified for the noted issues, as well as related regulatory standards, impact analysis methodologies, potential mitigation/design strategies, and reporting requirements.

The County Excavation and Grading requirements are implemented through issuance of grading permits, which apply to most projects involving more than 200 cubic yards of material movement (e.g., grading and excavation). Specific requirements for "Major Grading" include, among other criteria, use of qualified engineering and geotechnical consultants to design and implement grading plans, implementation of appropriate measures related to issues such as manufactured slope design and construction, and conformance with requirements related to issues including erosion and storm water controls (refer to Subchapter 4.1.3 for additional discussion of erosion and storm water issues).

County Building Code standards related to geotechnical concerns include applicable portions of the IBC and related CBC, along with specific County amendments. The County Building Code is implemented through the issuance of building permits, which may encompass requirements related to preparation of soils reports and implementation of structural loading and drainage criteria.

International Building Code and California Building Code Standards. The IBC (which encompasses the former Uniform Building Code [UBC]) is produced by the ICC (formerly the International

Conference of Building Officials [ICBO]) to provide standard specifications for engineering and construction activities, including measures to address geologic and soil concerns. Specifically, these measures encompass issues such as seismic loading (e.g., classifying seismic zones and faults), ground motion, and engineered fill specifications (e.g., compaction and moisture content). The referenced guidelines, while not comprising formal regulatory requirements per se, are widely accepted by regulatory authorities and are routinely included in related standards such as municipal grading codes. The IBC guidelines are regularly updated to reflect current industry standards and practices, including criteria such as The American Society of Civil Engineers (ASCE) and ASTM International (ASTM, formerly known as the American Society for Testing and Materials). The previously noted CBC guidelines are derived from the IBC and encompass criteria specific to California such as geologic and seismic characteristics.

Guidelines for the Determination of Significance

A significant geologic impact would occur if the proposed project would result in impacts as described for each topic below:

1. *Fault Rupture*. The project proposes any building or structure to be used for human occupancy over or within 50 feet of the trace of an Alquist-Priolo fault or County Special Zone fault.

2. *Ground Shaking*. The project site is located within a County Near-Source Seismic Shaking Zone or within Seismic Zone 4, and the project would not conform to the IBC.

1. *Landslides*

    a. The project site would expose people or structures to substantial adverse effects, including the loss, injury, or death involving landslides;
    b. The project is located on a geologic unit or soil that is unstable or would become unstable as a result of the project, potentially resulting in an in- or off-site landslide; and
    c. The project site lies directly below or on a known area subject to rockfall that could result in collapse of structures.

2. *Liquefaction*. The project site has the potential to expose people or structures to substantial adverse effects because: (1) the project site has potentially liquefiable soils; (2) the potentially liquefiable soils are saturated or have the potential to become saturated; and (3) in-situ soil densities are not sufficiently high to preclude liquefaction.

3. *Expansive Soils*. The project is located on expansive soil, as defined in Subchapter 1802.32 of the IBC (2006) and does not conform to the IBC.

4. *Additional Potential Geotechnical Hazards*. The project would be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially would result in on- or off-site issues related to drainage (saturation), differential settlement, pavement, the generation and use of oversize materials, or corrosive soils.

Analysis of Project Effects and Determination as to Significance

The project Geotechnical Investigation concludes that "No soil or geologic conditions were encountered that would preclude development of the property as proposed, provided the recommendations of this report are followed." The noted recommendations encompass a number of site-specific geologic conditions and concerns as described below in this subchapter, along with the following general measures which are incorporated into the project design:

- The project geotechnical engineer shall review proposed grading plans prior to finalization to verify compliance with applicable recommendations in the project geotechnical investigation, and to determine the need for additional investigation, comments, recommendations and/or analysis.

- Applicable field activities (e.g., grading, manufactured slope construction, and removal of unsuitable materials/fill placement) shall be reviewed and, if applicable, modified by the project geotechnical engineer to reflect observed conditions, project design elements, and regulatory conformance.

- Appropriate field tests shall be completed (per direction by the project geotechnical engineer) to provide quality control/assurance for structural fills and related earthwork.

- Project design and construction shall conform with appropriate regulatory guidelines and industry standards, including criteria related to seismic loading, excavation and grading (including removal of unsuitable materials and site preparation), fill parameters (e.g., composition, moisture content and application methodology), manufactured slopes, drainage and pavement.

Fault Rupture (Guideline 1)

The project Geotechnical Investigation (Appendix K) concludes that "[t]he site is not located on any known active or potentially active fault trace." This conclusion is supported by related mapping in the previously referenced County guidelines for determining the significance of geologic hazards, which does not identify any active or potentially active faults in the project site or vicinity (County 2007e). Based on this information, no significant impacts related to fault rupture are anticipated from implementation of the proposed project.

Ground Shaking (Guideline 2)

While the project site is not within or adjacent to any mapped County Near-Source Seismic Shaking Zones, it is located (along with all of San Diego County) in a Seismic Zone 4. The project Geotechnical Investigation concludes that the project site could be subject to "moderate to severe ground shaking" from a major earthquake event along any one of several regional faults, and identifies an estimated peak site acceleration of 0.2 g from a magnitude 7.2 earthquake along the Rose Canyon Fault Zone (as previously described, refer also to Appendix K). The project Geotechnical Investigation recommends that applicable seismic guidelines from the IBC/CBC and/or pertinent County of San Diego standards be included in the project design, including parameters related to seismic zone, soil profile, seismic coefficients, near-source factors, and seismic source(s) (refer to Appendix K). Specific

measures that may be implemented to reflect such design considerations include: (1) the use of engineered fill (e.g., appropriate fill composition, placement methodology, compaction and moisture content); (2) properly designed manufactured slopes, foundations and surface/subsurface drainage control (as outlined below); and (3) and appropriately reinforced concrete. Based on conformance with appropriate IBC/CBC and/or County seismic criteria as described, no significant impacts related to seismic ground shaking are anticipated from implementation of the proposed project.

Landslides (Guideline 3)

The project Geotechnical Investigation concludes that "No evidence of landsliding was observed during the field investigation or our aerial photograph review." The project site is also not located within or adjacent to any mapped areas of geohazards related to landslides, areas of high or moderate soil-slip potential, or areas of moderate or high landslide susceptibility (County 2007e). The northeastern-most portion of the project site is within or adjacent to an area mapped as containing slopes exceeding 25 percent, however, and may exhibit some related potential for landslide hazards (County 2007e). In addition, as described above under Existing Conditions (Stratigraphy), portions of the project site are underlain by the Otay Formation, which may include lenses of bentonitic clay. Such clay lenses typically encompass weakness planes, and may (particularly on cut slopes) generate landslide-related hazards. The project Geotechnical Investigation identifies a number of conclusions and recommendations to evaluate and address such potential slope stability hazards (including potential issues associated with the Otay Formation), as follows.

- Based on slope stability analyses, proposed fill slopes constructed at 2:1 (horizontal to vertical) grades will exhibit calculated factors of safety of at least 1.5 (the industry standard minimum factor of safety for static slope stability analyses) under static conditions for both deep-seated failure and shallow sloughing conditions; and proposed cut slopes constructed at 2:1 grades will exhibit calculated factors of safety of at least 1.5 with respect to slope stability if free of adversely oriented bedding, joints or fractures.

- Keying and benching operations conducted during grading of manufactured slopes should conform with detailed recommendations contained in Appendix C of the project Geotechnical Investigation, and keying operations may locally be required to extend deeper than normal due to the presence of the highly weathered Otay Formation.

- All cut slope excavations should be observed during grading by an engineering geologist to ensure that soil and geologic conditions do not differ significantly from those anticipated. Cut slopes within the Otay Formation may also require further evaluation and remediation due to the potential occurrence of clay lenses. Specifically, this may entail the use of stability fills to prevent surficial sloughing of the slope faces, with specific investigations and remedial efforts to be determined during grading.

- The outer 15 feet (or a distance equal to the height of the slopes, whichever is less) of fill slopes should be composed of approved (i.e., for composition) and properly engineered fill, pursuant to specific direction in Section 6.10 of the project Geotechnical Investigation (refer to Appendix K).

- All manufactured slopes should encompass drought-tolerant landscaping with variable root depths to reduce irrigation requirements, and should include proper drainage design to avoid or minimize runoff.

Based on the project design's conformance with the above recommendations (as well as other applicable recommendations in the project Geotechnical Investigation and pertinent regulatory/industry standards), no significant impacts related to landslides or other slope failures are anticipated from implementation of the proposed project.

Liquefaction (Guideline 4)

Liquefaction is the phenomenon whereby soils lose shear strength and exhibit fluid-like flow behavior. Loose, granular soils with relative densities of less than approximately 70 percent are most susceptible to these effects, with liquefaction generally restricted to saturated or near-saturated soils at depths of less than approximately 50 feet. Liquefaction most typically results from seismic ground shaking, with the related loss of support (and settlement) potentially resulting in significant impacts to surface and subsurface facilities such as pavement and underground utilities. Based on the relatively high density of surficial and geologic materials and the lack of a permanent shallow groundwater table, the project Geotechnical Investigation concludes that "[t]he risk of seismically induced soil liquefaction occurring at the property is very low." Based on this assessment, no significant impacts related to liquefaction are anticipated from implementation of the proposed project.

Expansive Soils (Guideline 5)

Expansive (or shrink-swell) behavior is attributable to the water-holding capacity of clay minerals, and can adversely affect the integrity of facilities such as pavement. The project Geotechnical Investigation concludes that "Highly expansive soils will be encountered within the topsoil and alluvium and occasionally in the Otay Formation." A number of standard remedial measures are identified to address potential effects from expansive soils, pursuant to applicable regulatory/industry standards (e.g., County and IBC criteria). Specifically, these include efforts such as removal and replacement of expansive materials with engineered fill, and/or placement of expansive soils in deeper fills and away from slopes and proposed development areas. In addition, the report recommends that cut lots be evaluated on an individual basis to assess remedial requirements when bentonitic clays are present within 10 feet of finish grade. Based on conformance with regulatory/industry guidelines and geotechnical recommendations as described, no significant impacts related to expansive soils are anticipated from implementation of the proposed project.

Additional Geotechnical Hazards (Guideline 6)

Drainage. The project Geotechnical Investigation identifies potential concerns related to surface and subsurface drainage issues, and notes that adequate drainage is critical to reduce the potential for effects such as differential soil movement and subsurface seepage. A number of recommendations are provided to address these potential issues, including: (1) the use of appropriate grading and maintenance efforts to prevent ponding and direct surface drainage away from development areas and slopes and into controlled drainage devices; (2) installation of properly designed subdrains in appropriate areas to move subsurface water away from developed areas; (3) installation of "cutoff walls" extending at least 12 inches below the level of subgrade in areas where landscaping is proposed adjacent to pavement; and (4) use of drought-tolerant landscaping to limit irrigation requirements and associated runoff/infiltration. Based on conformance with the above recommendations (as well as other applicable recommendations in the project Geotechnical Investigation and pertinent regulatory/industry standards), no significant impacts related to surface and subsurface drainage are anticipated from implementation of the proposed project.

Differential Settlement. The potential for differential settlement (i.e., varying degrees of settlement over relatively short distances) is identified as a potential issue in the project Geotechnical Investigation. For most areas of the site, these potential impacts would be addressed through the proposed implementation of standard grading and excavation measures such as the removal of unsuitable materials and use of engineered fill. Additional recommendations are provided for transitional pads (i.e., pads encompassing both cut and fill areas), wherein the cut portion would be undercut at least three feet below finish grade and replaced with properly engineered fill. This type of undercutting is also identified as potentially necessary in areas where hard rock, concretions, or cemented zones are exposed at or near the surface. Based on conformance with the above recommendations (as well as other applicable recommendations in the project Geotechnical Investigation and pertinent regulatory/industry standards), no significant impacts related to differential settlement are anticipated from implementation of the proposed project.

Pavement. The project Geotechnical Investigation identifies a number of preliminary recommendations regarding the design of proposed pavement including roads and parking areas. Specifically, these include the use of applicable subgrade preparation (e.g., scarification, moisture conditioning, compaction, and base material composition/placement), and appropriate pavement thicknesses (depending on proposed use), as well as maintaining positive drainage as previously described. Based on conformance with these recommendations (along with other applicable recommendations in the project Geotechnical Investigation and pertinent regulatory/industry standards), no significant impacts related to pavement are anticipated from implementation of the proposed project.

Oversize Materials. Based on the presence of geologic units including the Santiago Peak Volcanics, the project Geotechnical Investigation concludes that heavy ripping and/or blasting may be required for proposed grading and excavation in certain portions of the property. Such activities would likely generate oversize materials (i.e., greater than approximately 12 inches in maximum dimension), with the use of such materials in engineered fill potentially resulting in differential compaction and settlement. Accordingly, the following measures are identified to address these potential concerns: (1) blasting should be conducted such that associated rock fragments are smaller than two feet in maximum dimension to the extent feasible, and should be conducted as early in the construction process as possible to facilitate placement of blasted rock fragments in deeper on-site fill areas; (2) rocks greater than 12 inches but less than 4 feet in maximum dimension may be placed in engineered fill, but shall be limited to areas located at least 15 horizontal feet from slope faces, 5 vertical feet below finish grade, or 3 vertical feet below the deepest utility (whichever is deeper); and (3) rocks greater than 4 feet in maximum dimension may be placed in on-site fill if approved on an individual basis by the project geotechnical consultant, or should be crushed, used for decorative purposes (e.g., as surface features in landscaping or entry monuments), or disposed of in an approved off-site location. Based on conformance with these recommendations (along with other applicable recommendations in the project Geotechnical Investigation and pertinent regulatory/industry standards), no significant impacts related to oversize materials are anticipated from implementation of the proposed project.

Corrosive Soils. Limited field and laboratory testing conducted a part of the project Geotechnical Investigation identified "[v]ery low sulfate content with negligible sulfate exposure ratings according to California Building Code Table No. 19-A-4…" and…"moderate corrosion potential with respect to buried metals." Based on this information, the report recommends that further evaluation be conducted by a corrosion engineer if corrosion-sensitive improvements are planned. If such

evaluations are conducted and identify potential issues related to corrosive soils, they would likely be addressed through standard measures such as replacement of unsuitable materials with non-corrosive fill, use of corrosion-resistant construction materials, and/or installation of cathodic protection devices. Based on conformance with the recommendations in the project Geotechnical Investigation and subsequent corrosion evaluation if applicable (including all pertinent regulatory/industry standards), no significant impacts related to corrosive soils are anticipated from implementation of the proposed project.

Analysis of Cumulative Impacts

As described above, all potential project-specific geotechnical impacts would be avoided or reduced below identified significance guidelines through conformance with geotechnical recommendations and established regulatory requirements as part of the project design. The potential geology and soils effects evaluated in this Subchapter are inherently restricted to the areas proposed for development and would not contribute to cumulative impacts associated with other planned or proposed development. That is, issues related to seismic ground shaking and liquefaction, as well as landsliding, expansive soils, drainage (saturation), differential settlement, pavement design, oversize materials, and corrosive soils would involve effects to (and not from) the proposed development, and/or are specific to on-site conditions. Accordingly, addressing these potential hazards for the proposed development would involve using measures to conform with existing requirements, and/or site-specific design and construction efforts that have no relationship to, or impact on, off-site areas. Avoiding liquefaction impacts through mitigation consisting of excavation/replacement of unsuitable materials, for example, would not affect or be affected by similar deposits/hazards in off-site areas. Because of the site-specific nature of these potential hazards and the measures to address them, there would be no connection to similar potential issues or cumulative effects to or from other properties.

4.1.3 Hydrology and Water Quality

Hydrology and water quality issues are addressed in Section 4.6 of the EOMSP Final EIR. The analysis in that previously certified EIR identified a number of potentially significant and mitigable impacts related to hydrology and water quality. The hydrology impacts were associated with the effects of increased runoff volumes and velocities on Johnson Canyon and O'Neal Canyon. The water quality impacts were related to the generation of contaminants from project construction and operation that could be transported off site and downstream. A number of mitigation and design measures were recommended to avoid or reduce potentially significant impacts; the only measures from the prior analysis that are applicable to the proposed project specify construction best management practices (BMPs).

Subsequent to the previously described *Environmental Review Update Checklist Form for Projects with Previously Approved Environmental Documentation* (Appendix A), the County concluded that significant hydrology and water quality impacts could potentially be identified during project-specific analysis. In addition to the EOMSP Final EIR discussion described above, the County storm water standards require submittal and approval of a project-specific Preliminary Drainage Study and a SWMP for the proposed project. Accordingly, a Preliminary CEQA Drainage Study and a SWMP were prepared by SCEI (2009 and 2010a, respectively) to conform to the stated requirements. The project-specific Drainage Study identifies existing and proposed drainage characteristics within the project site and vicinity, based on current site conditions, established hydrologic methodology (including the San Diego County Hydrology and Drainage Design manuals), the proposed project design and the

presence of the Caltrans SR-11 ROW. The study also describes the fact that the proposed development would involve grading and construction of pads, roads and related infrastructure (including storm water systems), and erosion control/flow regulation facilities, resulting in an "interim" developed condition. The report also discusses anticipated "ultimate" development of the site, including the future construction of industrial facilities on individual lots, associated requirements related to infrastructure (including permanent on-lot detention basins, and water quality facilities), and the SR-11 corridor. In addition, a site-specific Hydromodification Management Plan was prepared by SCEI (2010b) to address associated potential impacts for ultimate site development, as required by the County. Hydromodification is generally defined as the change in natural watershed hydrologic processes and runoff characteristics (infiltration and overland flow) caused by urbanization or other land use changes that result in increased stream flows, sediment transport, and morphological changes in the channels receiving the runoff.

The project SWMP was prepared in accordance with the previously noted County and NPDES storm water requirements. In addition to identifying existing water quality issues relative to the project site and vicinity, the SWMP identifies anticipated pollutants from project implementation and describes various construction-related and operational measures (i.e., BMPs) that could be employed to maintain and/or improve on-site and downstream water quality. While much of the information in the SWMP is associated with the proposed project (interim), the SWMP also identifies additional requirements associated with ultimate development of the site. The findings and conclusions of the SWMP, Drainage Study, and Hydromodification Management Plan are summarized below along with other applicable data, with the complete reports provided in Appendix L.

Existing Conditions

Watershed and Drainage Characteristics

The project site is located within the 470-square-mile Tijuana Hydrologic Unit (HU) which extends from the Laguna Mountains (near Little Laguna Lake) on the east, to the Pacific coast. The Tijuana HU is divided into a number of hydrologic areas and subareas based on local drainage characteristics. The project site is located within the Water Tanks Hydrologic Subarea (HSA) of the Tijuana Valley Hydrologic Area (HA). Drainage within the Tijuana HU is through the Tijuana River and associated tributaries, with the Water Tanks HSA drained primarily by a number of swales and canyons flowing west and/or south. The Tijuana River originates to the north of the U.S-Mexico International Border, flows southwest into Mexico, and then flows northwest, with its last approximately five-mile stretch occurring on the U.S. side of the border as it moves westward. The river ultimately outlets at the Tijuana Estuary on the U.S. side of the border before discharging into the Pacific Ocean approximately 12 miles west of the project site.

The approximately 311-acre project site comprises undeveloped land situated within the southerly portions of four distinct regional drainage basins (i.e., Basins A through D), as depicted in Exhibit D-E1 in the Drainage Study in Appendix L. As shown on the referenced exhibits, Basins A through D encompass the project site, as well as substantial upstream (off-site) areas. The project site and vicinity generally drain north to south, with flows from the site moving south across the U.S.-Mexico International Border and ultimately entering the Tijuana River. Surface drainage within the project site and upstream areas occurs as both non-point runoff (sheet flow) and confined flow within several small, unnamed swales and canyon drainages flowing primarily south. There are three main natural drainages on the project site (Basins A through C) and one off-site drainage (Basin D) to the southeast.

Based on the Drainage Study completed for the project (Appendix L), the existing drainage basins on the site produce a range of 100-year storm flows at their respective discharge points. Peak flows from Basin A are calculated at 163.5 cubic feet per second (cfs), from Basin B at 485.9 cfs, from Basin C at 239.7 cfs, and from Basin D at 332.3 cfs, with the combined peak flow coming off the site during a 100-year storm event totaling 1221.4 cfs. Specifically, this total includes runoff generated within the project site, as well as run-on entering the site from the upstream portions of Basins A through D.

The Federal Emergency Management Agency (FEMA) has mapped flood hazards in the project site and vicinity (FEMA 1997). The project site and adjacent areas are designated as Zone X, which represents areas determined to be outside the 500-year (and therefore the 100-year) floodplain. The closest mapped 100-year floodplain is located approximately 0.5 mile northwest of the site along Johnson Canyon Creek.

Groundwater

Groundwater was not encountered within the project site during the geotechnical investigation conducted by GEOCON (2004). The investigation included exploratory trenches ranging from 2 to 16 feet in depth. No regional groundwater basins are mapped within the project site and immediate vicinity. The closest major aquifers include the Otay Valley and Lower Tijuana River basins, located approximately 2.0 miles north and 5.5 miles west, respectively, at their closest points (California Department of Water Resources [DWR] 2003, San Diego County Water Authority [SDCWA] 1997). While no known current information is available regarding the occurrence or depth of local groundwater, historical data identify groundwater depths of between approximately 350 and 485 feet in areas west of the project site (DWR 1986). Perched groundwater, generally consisting of one or more shallow, unconfined aquifers supported by impermeable or semi-permeable strata, could potentially occur locally. Perched groundwater is typically limited in volume and extent, but can vary with seasonal precipitation and/or local irrigation.

Water Quality – Surface Water

Surface water within the project site and immediate vicinity consists predominantly of ephemeral, or intermittent, flows from storm events. No known water quality data are available for the project site and vicinity. Limited historic data indicates that surface water quality within the Water Tanks HSA was generally good in 1985 (USEPA 1995b, DWR 1986, U.S. Geological Survey [USGS] 1985). Based on the undeveloped nature of the project site and relatively low intensity of existing development within upstream areas, current local surface water quality is expected to be generally good.

Numeric water quality objectives have not been established for surface waters in the Tijuana Valley HA or the Water Tanks HSA, with these areas subject to identified narrative objectives. Specifically, these include quantitative requirements for constituents such as ammonia, coliform bacteria, and chloride, as well as qualitative standards for additional constituents, degradation of waters and associated biological communities.

More recent surface water quality monitoring has been conducted within the Tijuana River watershed in association with local/regional water agency programs and NPDES requirements. Specifically, these efforts have included wet/dry season monitoring, bioassessment studies, and ambient lagoon/bay monitoring.

Wet and Dry Season Monitoring. Monitoring at the Tijuana River mass loading station (MLS, located at the Hollister Street Bridge) covered three storm events each for the 2001/2002 through 2006/2007 storm seasons (18 total events, with no monitoring conducted at the Tijuana River MLS for the 2007/2008 season). These monitoring events addressed numerous physical, chemical and bacterial constituents of concern (COC), with monitoring results summarized below[2]. Water quality standards during the described monitoring efforts were regularly exceeded for COCs including fecal coliform bacteria, ammonia, chemical oxygen demand (COD), total phosphorus, total suspended solids (TSS) and toxicity to aquatic test organisms (Weston Solutions [Weston] 2009).

- Water quality standards were regularly exceeded (15 or more out of 18 events) for COCs including total and fecal coliform bacteria, enterococci bacteria, TSS, turbidity, diazinon (a pesticide), and toxicity to select aquatic organisms.

- Water quality standards were frequently exceeded (9 to 14 out of 18 events) for COCs including ammonia; biochemical oxygen demand; chemical oxygen demand; and total phosphorus, copper and lead.

- Water quality standards were occasionally exceeded (1 to 8 out of 18 events) for COCs including pH; oil and grease; dissolved phosphorus; nitrate; surfactants; chlorpyrifos and malathion (pesticides); total antimony, arsenic, nickel and zinc; dissolved copper; and toxicity to select aquatic organisms.

Dry weather sampling was also conducted in 2003 through 2007 at several sites located both up- and downstream of the Tijuana River MLS. This program was focused on collecting dry season samples from storm drain facilities to identify urban pollutants and sources. Data from the described dry weather sampling documented that water quality objectives were most commonly exceeded for turbidity, bacteria, and nutrients (refer to the previously cited MEC and Weston monitoring reports).

Ambient Bay and Lagoon Monitoring. Ambient bay and lagoon monitoring was conducted between 2003 and 2005 for a number of coastal waters including the Tijuana River Estuary. According to the previously referenced monitoring reports, samples from the Tijuana River Estuary exhibited generally high individual and overall (i.e., relative to other sampled embayments) quality rankings for sediment chemistry and toxicity, and intermediate rankings for benthic (estuary floor) community structure. These rankings contrast with the generally poor water quality observed during the described wet weather sampling at the Tijuana River MLS, and indicate that heavy COC loadings documented during storm events do not necessarily lead to persistent accumulation of those COCs downstream in the Tijuana River Estuary.

Bioassessment Monitoring. Bioassessment testing involves evaluation of (among other criteria) the taxonomic richness (i.e., number of taxonomic groups) and diversity (i.e., species diversity within taxonomic groups) of benthic macroinvertebrate (BMI) communities, with all tested sites numerically ranked for the condition of BMI communities. In addition to the described efforts, bioassessment monitoring has been conducted at two downstream sites along the Tijuana River, including: (1) the border fence, tested in May 2007; and (2) Dairy Mart Road, tested in May of 2003, 2005, and 2006.

[2] Associated monitoring data are reported in final annual urban runoff monitoring reports prepared by MEC Analytical Systems, Inc. (MEC) 2003, 2004 and 2005; and Weston Solutions (Weston) 2005, 2007, 2008 and 2009 (refer to Chapter 6.0, References).

According to the previously referenced annual monitoring reports, test results for both sites indicate generally poor rankings relative to other test sites, with these results attributable (at least in part) to poor water quality in surrounding urban areas.

Bi-annual Clean Water Act Assessments. The State Water Resources Control Board (SWRCB) produces bi-annual qualitative assessments of statewide and regional water quality conditions. These assessments are focused on CWA Section 303(d) impaired water listings and scheduling for assignment of total maximum daily load (TMDL) requirements. The most current (2006) approved assessment identifies the following impaired waters downstream of the study area: (1) six miles of the Tijuana River listed for eutrophic conditions, bacterial indicators, low dissolved oxygen, pesticides, solids, synthetic organics, trace elements, and trash; (2) 1,319 acres in the Tijuana Estuary listed for eutrophic conditions, bacterial indicators, lead, low dissolved oxygen, nickel, pesticides, thallium, trash, and turbidity; and (3) three miles of the Pacific Ocean shoreline north of the international border listed for bacterial indicators. Proposed TMDL completion dates include 2010 for the Pacific Ocean and 2019 for the Tijuana River and Estuary (SWRCB 2007).

Water Quality – Groundwater Quality

No known groundwater quality data are available for the project site and vicinity. Regional data include reported total dissolved solids (TDS) levels of between 500 and 3,000 milligrams per liter (mg/l), and 380 to 3,620 mg/l in the Lower Tijuana River Basin (SDCWA 1997 and DWR 2003, respectively).

Regulatory Framework

The proposed project is subject to a number of regulatory requirements and standards associated with federal, state, and local guidelines, as summarized below. These requirements and standards typically involve measures to minimize and mitigate potential hydrology and water quality problems through design and construction techniques. Specific guidelines encompassing hydrologic and water quality criteria that may be applicable to the design and construction of the proposed project include: (1) the San Diego County General Plan Conservation Element (2002b); (2) the County Guidelines for Determining Significance, Hydrology (2007f); and the County Guidelines for Determining Significance, Surface Water Quality (2007g). Additional discussion of these requirements is provided in the assessment of project-related impacts, as appropriate.

International Boundary and Water Commission Storm Water Runoff and Quality Criteria. The International Boundary and Water Commission (IBWC) is a bi-national commission that oversees projects along the U.S.-Mexico International Border which have potential impacts involving political, economic, environmental, or infrastructure issues. With respect to hydrology and water quality, IBWC guidelines mandate that new development in applicable border regions (including the project site vicinity) do not result in cross-border runoff that exceeds pre-development levels.

National Pollutant Discharge Elimination System Requirements. Since the EOMSP Final EIR was certified, the RWQCB has adopted various National Pollutant Discharge Elimination System (NPDES) permits related to water quality. The proposed project is subject to appropriate elements of the federal CWA, including the NPDES; specifically, the project must conform to following NPDES requirements: General Construction Activity Stormwater Permit (Construction Permit, NPDES No. CAS000002, SWRCB Order 99-08-DWQ); General Groundwater Extraction Waste Discharge

Permit (Groundwater Permit, NPDES No. CAG919002, RWQCB Order No. R9-2008-0002); and NPDES Municipal Storm Water Permit (Municipal Permit, NPDES No. CAS0108758, RWQCB Order No. 2001-01), with a revised permit adopted in 2007 (RWQCB Order No. R9-2007-0001). The proposed project also is subject to various related County standards, as outlined below.

Conformance with the Construction Permit is required prior to development of applicable sites exceeding one acre. Specific conformance requirements include implementing a Stormwater Pollution Prevention Plan (SWPPP) and an associated monitoring program, as well as a Storm Water Sampling and Analysis Strategy (SWSAS) for applicable projects (i.e., those discharging directly into waters impaired due to sedimentation or involving potential discharge of non-visible contaminants that may exceed water quality objectives). These plans identify detailed measures to prevent and control the off-site discharge of contaminants in storm water runoff, including contaminants associated with erosion/sedimentation and the use/storage of construction-related hazardous materials (fuels, etc.). Specific pollution control measures require the use of best available technology (BAT) economically achievable and/or best conventional pollutant control technology (BCT) levels of treatment, with these requirements implemented through BMPs.

A new General Construction Permit (Order No. 2009-0009-DWQ) was adopted by the SWRCB on September 2, 2009, with an effective date of July 1, 2010. Accordingly, the proposed project would likely be subject to applicable criteria under the new General Construction Permit. The new permit includes a number of requirements beyond those noted for the existing permit, including technology-based effluent limitations and action levels, risk-based assessment, minimum BMP requirements, enhanced monitoring and reporting, and mandatory training. Specific requirements under this permit would be determined after completion of project plans and application submittal to the SWRCB and RWQCB.

Conformance with the noted Groundwater Permit is generally applicable to all groundwater discharge regardless of volume, with certain exceptions as noted in the permit text. Specific requirements for permit conformance include: (1) implementing an appropriate sampling and analysis/monitoring program; (2) providing at least 30 days notification to the appropriate local agency prior to discharging to a municipal storm drain system; (3) conforming with applicable water quality standards, including (but not limited to) the Basin Plan, CWA, and State Porter-Cologne Water Quality Control Act; and (4) submittal of applicable monitoring reports.

The Municipal Permit identifies waste discharge requirements for urban runoff related to applicable new development, redevelopment and existing development sites under the jurisdiction of co-permittees (e.g., the County of San Diego). The intent of these requirements is to protect environmentally sensitive areas and provide conformance with pertinent water quality standards, including the CWA and the RWQCB Basin Plan. Identified requirements involve using a number of planning, design, operation, treatment and enforcement measures to reduce pollutant discharges from individual development projects (and the municipal storm drain system as a whole) to the maximum extent practicable (MEP). Specifically, these measures include: (1) using jurisdictional planning efforts (such as discretionary general plan approvals) to provide water quality protection; (2) requiring coordination between individual jurisdictions to provide watershed-based water quality protection; (3) implementing applicable low impact development (LID)[3], site design, source control, priority project,

[3] The LID process is intended to mimic predevelopment hydrologic conditions by using design practices and techniques to effectively capture, filter, store, evaporate, detain and infiltrate runoff close to its source.

and volume- or flow-based (as defined in the permit text) treatment control BMPs to avoid, reduce and/or mitigate effects including increased erosion and sedimentation, hydromodification and the discharge of contaminants in urban runoff; and (4) using appropriate monitoring, reporting and enforcement efforts to ensure proper implementation, documentation and (as appropriate) modification of permit requirements. The Municipal Permit also requires co-permittees to fund and implement urban runoff management plans (URMPs) to reduce runoff and contaminant discharges to the MEP. The URMPs were conducted on a jurisdictional basis initially, and were expanded to include a watershed-based approach (WURMPs) for subsequent efforts. The watershed-based approach has been implemented for the project site and applicable downstream watersheds through the Tijuana River WURMP (City of Imperial Beach 2003).

Pursuant to the described Municipal Permit requirements, the County (along with other applicable co-permittees) participated in developing the Standard Urban Storm Water Mitigation Plan (SUSMP, approved by the RWQCB on June 12, 2002; County 2002b) to address storm water quality issues, and adopted related storm water standards and ordinances as described below under County Requirements. The County adopted a local (County-specific) SUSMP on February 10, 2003 (per Municipal Permit requirements), with an update of this document adopted on March 24, 2008 to reflect the revised 2007 Municipal Permit. In addition, a Countywide Model SUSMP was adopted on February 9, 2010 to reflect current NPDES requirements including minimum standards for LID measures, runoff control and hydromodification concerns. The application of Municipal Permit and related NPDES/County requirements to the proposed project are described below as appropriate in the discussion of potential impacts.

Basin Plan Requirements. The RWQCB Basin Plan (1994) establishes a number of beneficial uses and water quality objectives for surface and groundwater resources. Beneficial uses are generally defined in the Basin Plan as "the uses of water necessary for the survival or well being of man, plus plants and wildlife." Identified existing and potential beneficial uses for inland and coastal receiving waters located within and downstream of the project site include: agricultural supply; industrial service supply; contact and non-contact water recreation; warm freshwater habitat; wildlife habitat; navigation; commercial and sport fishing; biological habitats of special significance; estuarine habitat; rare, threatened or endangered species; marine habitat; aquaculture; migration of aquatic organisms; spawning, reproduction and/or early development; and shellfish harvesting.

Water quality objectives identified in the Basin Plan are based on established beneficial uses and are defined as "the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses." Water quality objectives include both narrative requirements (which can encompass qualitative and quantitative standards) and specific numeric objectives for identified constituents. As described above, numeric water quality objectives have not been established for surface waters in the Tijuana Valley HA or the Water Tanks HSA. Rather, these areas are subject to narrative objectives as identified in the Basin Plan, including quantitative requirements for contaminants such as ammonia, coliform bacteria, and chloride, as well as qualitative standards for additional contaminants, degradation of waters and associated biological communities.

County Requirements. Pursuant to the NPDES Municipal Permit, the County has adopted the following requirements: (1) the *Watershed Protection, Stormwater Management and Discharge Control Ordinance* (Stormwater Ordinance No. 9926, 2008a) and the associated Stormwater Standards Manual; (2) the LID Handbook (2007b); and (3) the previously described County SUSMP (2008b). These documents provide, among other things, direction for applicants to determine if and how they are

subject to County and related Municipal Permit standards, and identify requirements for the inclusion of permanent site design, LID, source control, priority project and/or treatment control BMPs. The County Storm Water Ordinance/Manual also requires construction-related BMPs to address issues including erosion and sedimentation. The County may, at its discretion, require the submittal and approval of a SWPPP to address construction-related storm water issues prior to site development (with such requirements in addition to the NPDES SWPPP criteria described above). The application of County storm water requirements is described below as appropriate in the discussion of potential impacts.

Guidelines for the Determination of Significance

A significant hydrology/water quality impact would occur if the proposed project would:

1. Substantially alter existing on- or off-site drainage patterns or directions.

2. Substantially increase existing on- or off-site surface runoff volumes or velocities, including increases that result in on- or off-site flooding or erosion/siltation hazards.

3. Cause or contribute to the capacity of existing or planned storm water drainage systems being surpassed.

4. Place structures within a 100-year flood hazard area which would impede or redirect flows.

5. Potentially degrade the water quality of any impaired water course or water body, as listed on the CWA Section 303(d) list, and contribute additional pollutants for which the receiving water body is already listed.

6. Not conform to applicable Federal, State or local statutes and regulations related to surface or groundwater quality including but not limited to: the Federal CWA, California Porter-Cologne Water Quality Control Act, NPDES, and the County of San Diego Watershed Protection, Stormwater Management, and Discharge Control Ordinance.

Analysis of Project Effects and Determination of Significant Impacts

Drainage Alteration (Guideline 1)

As described under Existing Conditions, surface drainage within the project site flows generally north to south, with all associated flows moving south to the Tijuana River via several existing small, unnamed swales and canyon drainages flowing primarily south and ultimately reaching the Tijuana Estuary and the Pacific Ocean. Project implementation would not entail substantial alteration of local drainage patterns. Based on the project site plan and Drainage Study prepared by SCEI (Appendix L), the described existing flow directions and locations within, from and downstream of the project site would remain essentially unchanged in both the interim and ultimate development phases. Specifically, proposed measures to prevent substantial alteration of existing drainage courses and patterns during the interim development consist of the following:

- The project would preserve the existing southwest-trending drainage course in the southeastern portion of the site through dedication of an associated open space easement on Lot 57.

- The project would implement open, grass- and rock-lined north-south channels to convey 100-year storm flows through the eastern and central portions of the site (including flows originating both upstream and on the site), with the locations of these channels and the outlet points along the southern site boundary generally corresponding to pre-development drainage locations/patterns.

- The project would implement a proposed north-south underground storm drain (pipeline) to convey 100-year storm flows through the western portion of the site (including flows originating both upstream and on the site), with the location of this facility and the associated outlet along the southern site boundary corresponding to the pre-development drainage location/pattern.

Ultimate site development would occur in the future following implementation of the proposed project, and would not result in substantial alteration of existing drainage patterns (which also would be maintained in the interim with implementation of the proposed project).

Based on the described conditions and incorporation of the described measures, implementation of the proposed project would not substantially alter on- or off-site drainage patterns or directions, and no associated significant impacts are anticipated.

Runoff Volumes/Velocities and Related Flooding and Erosion/Siltation Hazards (Guidelines 2 and 4)

The proposed project would subdivide the property into industrial lots and open space lots with open space easements, grade and stabilize pads on approximately 264.4 acres of the property for future industrial development, and entail on- and off-site roadway and utility improvements. With the exception of public roads and the proposed regional sewer pump station on Lot 34, the addition of impervious surfaces including pavement and structures would not occur until ultimate site development, at some point in the future. Accordingly, implementation of the proposed project would introduce limited impervious areas to the site; impervious surfaces typically increase both the volume and velocity of runoff within a project site by reducing infiltration capacity and concentrating flows. Grading of the project site for interim development would, however, have the capacity to generate erosion and siltation since it will be left in a relatively undeveloped state for an indeterminate period of time. These issues, as they relate to initial site grading and long-term site development, are discussed below.

As previously noted, the existing total 100-year storm flow from the project site (combined flows from Basins A through D) is approximately 1221.4 cfs in the interim, with these flows discharging from the site at several existing outlet points located along the southern property boundary. As the project has been designed to maintain the peak runoff volumes and velocities leaving the site, pre-development peak flows would be maintained following site development. Based on the proposed design conditions, total calculated post-development runoff from the project site is approximately 1,213.1 cfs – 163.5 cfs at the outlet of Basin A, 485.9 cfs at the outlet of Basin B, 239.7 cfs at the outlet of Basin C, and 324 cfs at the outlet of Basin D – for a net reduction in off-site flows of 8.3 cfs (refer to the Proposed Detention Release Rate Summary table in Section 1 of the Drainage Study [SCEI 2009 in Appendix L]). These projected post-development flows incorporate the use of various measures implemented as part of the proposed project to regulate runoff from the site, with specifics provided

below. No significant adverse issues related to runoff volumes/velocities or erosion/siltation hazards would occur from the proposed project, based on the following considerations.

- The project would design all proposed storm drain facilities to accommodate a 100-year storm event, per requirements in the County of San Diego Design and Procedure Manual (County 1993), with no associated capacity or flooding impacts to (or in association with) off-site storm drains.

- The project would construct interim desilting basins (each connected to a proposed system of storm drains) on Lots 1-55 to limit post-development peak 100-year storm flows from the site to pre-development levels (with all noted basins also providing interim sediment control/filtration as described below under the SWMP discussion).

- The project would install five regional detention basins, including two on Lot 54 and three on Lot 56 (refer to Exhibit C of the Hydromodification Management Plan in Appendix L). These basins would regulate interim post-development flows from developed roadways and associated areas, such that related peak 100-year storm flows would not exceed pre-development levels (with these basins also providing interim sediment control for the noted areas, and designed to completely drain within 96 hours to avoid vector issues). The described basins would also be designed, along with related lot-specific features, to address potential long-term hydromodification concerns as described below.

- The project would install energy dissipation structures (riprap aprons) at applicable discharge locations to maintain pre-development flow velocities during interim development and avoid associated downstream erosion issues. Specific location of energy dissipation structures are shown on Figure 1-4.

As previously described, ultimate development of the project site would entail construction of industrial facilities and related infrastructure by the future property owner(s), as well as development of SR-11 and the federal POE. While these ultimate facilities are not part of the proposed project, the project Drainage Study and Hydromodification Management Plan nonetheless identify a number of regulatory requirements and design features associated with anticipated ultimate site development, including:

- Installation of individual detention structures and bio-retention (vegetation-lined) swales on Lots 1 through 53 and 55, to limit peak 100-year storm runoff from ultimate site development to pre-development (i.e., existing) levels. The ultimate detention basins and swales (as well as additional water quality facilities described below) would replace the previously described interim desilting basins. The ultimate on-site detention basins are assumed to be located underground due to surface area limitations, and would be designed to completely drain within 96 hours to avoid vector issues, if applicable.

- Utilization of the five previously described regional detention basins on Lots 54 and 56 to regulate flows from roadways, common areas and other associated locations, and provide conformance with applicable hydromodification requirements. The preliminary design of the five detention/ hydromodification basins is based on the assumption that detention and bio-filtration facilities would be provided for individual lots during ultimate development, as noted

above (refer to Exhibit C of the Hydromodification Management Plan for descriptions of individual lot facilities). If the individual lot detention and bio-retention facilities are modified from the assumptions provided in the Hydromodification Management Plan, additional analysis would be required to demonstrate that the modified facilities would be sufficient (in concert with the five regional basins) to adequately address hydromodification concerns (SCEI 2010b).

- Use of appropriate post-construction BMPs throughout the Otay Crossings Commerce Park to provide project conformance with applicable regulatory requirements (as described below for the project SWMP).

Based on the described design measures and related conclusions from the project Drainage Study, SWMP and Hydromodification Management Plan, no significant impacts related to increased runoff volumes/velocities or downstream erosion/siltation are anticipated from the interim or ultimate development of the project site, and no significant hydromodification impacts would result from ultimate development.

The EOMSP Final EIR identified potentially significant flooding impacts associated with seismically induced seiche effects at upstream reservoirs. Two of these reservoirs were located along drainages that extend through the southeastern and central portions of the project site. Based on review of current (2009) aerial photographs, however, neither of these reservoirs is still visible. Based on these conditions and the proposed project design, it is likely that these reservoirs are no longer present, with no associated flooding hazards. Accordingly, no significant impacts are anticipated from seiche-related flood hazards associated with the described upstream reservoirs. If one or more of the noted reservoirs are subsequently determined to be present, or if these (or other) reservoirs are rebuilt, associated potential flood-related impacts at the project site would still be less than significant. Specifically, this conclusion is based on the fact that containment structures associated with larger reservoirs (i.e., large enough to pose potential flooding hazards onsite) are subject to extensive design, construction, inspection and maintenance/safety criteria through the California Division of Safety of Dams. Accordingly the probability for inundation of the project site from seiche-related reservoir spills or containment structure failure is considered extremely low.

As described above, the project site and vicinity are outside of mapped 100-year floodplains, with the closest mapped 100-year floodplain located approximately one-half mile to the northwest (FEMA 1997). Based on these conditions and the reservoir discussion above, the proposed project would not be subject to significant impacts related to flooding/floodplain hazards or the related impediment or redirection of flood waters.

Capacity of Existing or Planned Storm Drain Systems (Guideline 3)

As described above under the evaluation of potential flow volume/velocity impacts, all proposed new and modified storm drain facilities would be designed to accommodate a 100-year storm event, per applicable County requirements. In addition, due to the use of proposed desiltation and detention facilities and the related net reduction in 100-year storm flows leaving the site, downstream storm drain facilities would be adequate to accommodate post-development flows associated with implementation of the proposed project (Appendix L). Based on these considerations, no significant impacts related to the capacity of existing or planned storm drain systems are anticipated from implementation of the proposed project.

Water Quality (Guidelines 5 and 6)

Potential project-related water quality impacts are associated with short-term construction activities; however, potential water quality impacts that could result from long-term operation and maintenance under ultimate site development also are addressed herein, to a limited degree. Conformance with applicable water quality requirements of the Municipal Permit and County Storm Water Standards also would entail the use of appropriate BMPs, as described in the project SWMP. Specifically, these would include a number of site design, LID, source control, and treatment control BMPs as outlined below, with additional information provided in the SWMP included in Appendix L. Implementation of applicable BMPs in association with the described NPDES and County requirements also would address related standards in the RWQCB Basin Plan, as these standards are incorporated into the NPDES and County requirements (refer to the previous discussion of Regulatory Framework).

Project-related activities would not result in any direct effects to groundwater quality through activities such as underground storage of hazardous materials. Accordingly, potential impacts to groundwater quality would be limited to the percolation of surface runoff and associated contaminants generated within the project site and associated off-site facility areas. The following assessment of potential water quality impacts is therefore applicable to both surface and groundwater resources.

Short-term Construction Impacts

Potential water quality impacts related to project construction include erosion/sedimentation, the on-site use and storage of construction-related hazardous materials (e.g., fuels, etc.), and disposal of extracted groundwater (if required), as described below.

Erosion and Sedimentation. Proposed excavation, grading, and construction activities on the project site could potentially result in related erosion and off-site sediment transport (sedimentation). Project activities would involve the removal of surface stabilizing features such as vegetation, excavation of existing compacted materials from cut areas, redeposition of excavated (and/or imported) material as fill in proposed development sites, potential sediment generation from paving activities associated with roadway improvements, and potential erosion from disposal of extracted groundwater (if required). Project-related erosion could result in the influx of sediment into downstream receiving waters (including portions of the Tijuana River, Estuary and Pacific Ocean shoreline included on the 303[d] list as described above), with associated water quality effects such as turbidity and the transport of other contaminants that tend to adhere to sediment particles.

While graded, excavated and filled areas associated with construction activities would ultimately be stabilized through efforts such as compaction and installation of hardscape and landscaping (upon ultimate site development), erosion potential would be higher in the short-term than for existing conditions. Developed areas would be especially susceptible to erosion between the beginning of grading/construction for the proposed project, and the installation of pavement or establishment of permanent cover in landscaped areas upon ultimate development. A discussion of short-term construction-related impacts follows.

Short-term erosion and sedimentation impacts would be addressed primarily through conformance with the County Stormwater Ordinance/Stormwater Standards Manual and NPDES Construction Permit, including the implementation of an authorized SWPPP to address (among other issues) erosion and sedimentation concerns. While specific BMPs related to this issue would be determined

during the SWPPP process based on site characteristics (soils, slopes, etc.) and proposed grading, they would include standard industry measures and guidelines contained in the Project SWMP (Appendix L), NPDES Construction Permit text, and County Stormwater Ordinance/Stormwater Standards Manual, as well as the additional regulatory and industry sources identified above under Regulatory Framework. Included in the project SWMP is a preliminary list of potential construction BMPs to be implemented during project construction; these measures are summarized in Table 4.1-2. Typical erosion and sediment control measures that would likely be implemented as part of the project SWPPP are summarized in Table 4.1-3. The specific BMPs related to short-term erosion and sedimentation that would be further defined during the NPDES/County permit and SWPPP process would take priority over the more general types of measures in the two tables. Based on the use of appropriate BMPs as part of, and in conformance with, the project SWMP and SWPPP under applicable regulatory guidelines, no significant impacts from construction-related erosion/sedimentation would occur as a result of project implementation.

Construction-related Hazardous Materials. Project construction/development would involve the on-site use and/or storage of hazardous materials such as fuels, lubricants, solvents, concrete, and portable septic system wastes. The accidental discharge of such materials during project construction could potentially result in significant impacts if such materials reach downstream receiving waters, particularly materials such as petroleum compounds that can be toxic to aquatic species in low concentrations. Implementation of a SWPPP would be required under NPDES and (potentially) County guidelines as noted above for erosion and sedimentation, and would include detailed measures to avoid or mitigate potential impacts related to the use and potential discharge of construction-related hazardous materials. Detailed BMPs would be determined as part of the NPDES/SWPPP process based on site-specific parameters. They are likely to include standard measures from the project SWMP, NPDES Permit, and County Stormwater Ordinance/Manual, as well as the regulatory/industry sources referenced under Regulatory Framework. Typical measures associated with construction-related hazardous materials that would likely be implemented as part of the project SWPPP are summarized in Table 4.1-4; however, the specific construction-related hazardous material BMPs determined as part of the NPDES/SWPPP process would take priority over the more general types of measures in the table. Based on the use of appropriate BMPs as part of a SWPPP under applicable regulatory guidelines, no significant impacts from construction-related hazardous materials would occur as a result of project implementation.

Disposal of Extracted Groundwater. While shallow groundwater is not expected to be encountered during project-related excavation and construction, unanticipated conditions (e.g., perched aquifers) could potentially result in requirements for the extraction and disposal of groundwater to facilitate project construction. Disposal of groundwater extracted during construction activities into local drainages and/or storm drain facilities could potentially generate significant water quality impacts through erosion/sedimentation (e.g., if discharged onto graded areas or slopes), or the possible occurrence of contaminants in local groundwater aquifers. Project construction would require conformance with applicable NPDES Groundwater Permit criteria prior to disposal of extracted groundwater (as outlined under Regulatory Framework). While specific BMPs to address potential water quality concerns from disposal of extracted groundwater would be determined based on site-specific parameters, they would likely include the following types of measures:

- Use of erosion prevention and sediment control devices similar to those described above.

- Testing, filtering, and/or treatment of extracted groundwater prior to discharge if required for NPDES permit conformance, through methods such as filtration, aeration, adsorption, or disinfection.
- Removal of groundwater by a licensed operator for treatment and disposal if required for NPDES permit conformance, through methods such as conveyance to a municipal wastewater treatment plant.

Based on the required conformance with NPDES Groundwater Extraction and Waste Discharge Permit standards and the implementation of related BMPs, no significant water quality impacts from the potential project-related disposal of extracted groundwater are anticipated.

As noted above, site-specific BMPs typically vary with conditions such as proposed grading/construction, slope, and soil characteristics, with detailed guidance for construction-related BMPs provided in the construction permit text and related County standards, as well as additional sources including the *Caltrans Storm Water Quality Handbooks* (Caltrans 2003), *EPA National Menu of Best Management Practices for Storm Water Phase II* (USEPA 2003), and *Storm Water Best Management Practices Handbooks* (California Stormwater Quality Association 2003). Based on these sources and the preliminary assessment of construction BMPs provided in the project SWMP, BMPs considered likely to be implemented as part of the project SWPPP are identified in Chapter 8.0 (and a summary of these measures also provided in Chapter 1.0). As described above, construction BMPs would be further defined during the NPDES/County permitting and SWPPP process, with the resulting BMPs taking priority over the more general types of standard industry measures discussed in this document.

Long-term Operation and Maintenance Impacts. The project SWMP (Appendix L) identifies a limited number of pollutants of concern and appropriate control measures related to development of the proposed project, based on procedures identified in the County Stormwater Ordinance/Manual and SUSMP, as well as the related NPDES Storm Water Municipal Permit. The information in the SWMP is somewhat limited due to the fact that much of the long-term operations and maintenance information would be determined at ultimate site development rather than during implementation of the proposed project (i.e., interim development). The proposed project is identified as a SUSMP "Priority Project" in the SWMP since the land area slated for commercial development is greater than 1.0 acre, and includes more than 5,000 square feet of new paved surfaces (refer to SCEI 2010a in Appendix L). Anticipated contaminants associated with ultimate development of the project site include sediment, nutrients, heavy metals, organic compounds, trash and debris, oxygen demanding substances, oil and grease, bacteria and viruses, and pesticides (SCEI 2010a in Appendix L).

Interim Development. Completion of construction for the interim development (proposed project) would yield graded pads stabilized for erosion and water quality using a number of measures based upon County of San Diego Department of Public Works, Land Development, "Stormwater Management and Requirements on Developer and Single-family Grading Permits-Construction BMPs", namely runoff collection and conveyance systems designed to limit runoff. Specifically, energy dissipaters are proposed at storm drain outlet locations leading off-site and desiltation basins would be constructed on each graded pad that would serve as detention structures limiting graded pad runoff to pre-development levels. In addition, the applicant/owner would be responsible for monitoring and maintaining the basins and storm drain facilities to ensure proper function. Furthermore, in the interim development stage, public streets and infrastructure storm drain construction would be completed and ready for ultimate site development. Streets would be protected from sediment

transportation via County erosion protection requirements; specifically, this may include efforts such as regular street sweeping, hydroseeding of unpaved areas and the maintenance of basins as noted above. Water quality devices that remove vehicular pollutants would also be implemented in the storm drain system, including in-let filters or other devices. Based on the foregoing, erosion and sedimentation and vehicular pollutants are not considered to be significant long-term concerns for the proposed project.

Ultimate Development. Urban contaminants accumulate in areas such as streets, parking areas, and drainage facilities, and are picked up in runoff during storm events; runoff within the project site at the time of ultimate development would increase as a result of constructing impervious surfaces, and a corresponding increase in contaminant loading potential would occur at ultimate development. Based on these conditions, long-term operations at the future industrial park could result in the on- and off-site transport of urban contaminants and associated significant effects such as increased turbidity, oxygen depletion and toxicity to attendant species in downstream receiving waters. Affected downstream waters may include portions of the listed 303(d) waters described above under Existing Conditions.

Additionally, at the time of ultimate development, developed areas would be stabilized through installation of hardscape or landscaping, and long-term water quality controls pursuant to County and NPDES guidelines would be incorporated, including (among other efforts) measures that would avoid or reduce off-site sediment transport. Future industrial/commercial occupants would be required to provide methods to assure water quality within the storm water runoff from each lot. Specifically, this likely would include efforts such as the use of on-lot detention structures, vegetated drainage swales/channels, energy dissipators, storm water filters, irrigation controls, and drainage facility maintenance (i.e., to remove accumulated sediment).

Post-construction Best Management Practices. The proposed project would conform to applicable County storm water standards and NPDES standards, with such conformance to include the use of appropriate post-construction site design, low impact development (LID), source control and treatment control BMPs. Specific proposed BMPs are identified in the project SWMP (Appendix L), with these measures summarized below and followed by a discussion of the associated BMP monitoring and maintenance program.

Site Design/LID BMPs. Site design/LID BMPs are intended to avoid and/or control post-development runoff, erosion potential and contaminant generation by mimicking the natural hydrologic regime to the MEP, and capturing, filtering, storing, evaporating, detaining, and/or infiltrating runoff close to its source. Potential site design/LID BMPs identified in the project SWMP include similar measures described above under the evaluation of potential effects to Runoff Volumes/Velocities; such as: (1) preserving natural areas wherever feasible, including drainage channels, steep slopes and wetlands; (2) minimizing disturbance to existing slopes; (3) minimizing cut and fill areas to reduce manufactured slope dimensions; (4) collecting concentrated flows in stabilized drains and channels, including a natural open channel in the central portion of the site, in approximately the same location that an existing drainage flows, which would provide an improved storm water conveyance system over existing conditions; (5) use of detention and desilting basins to regulate flows such that post-development runoff volumes do not exceed pre-development levels; (6) designing drainage channels to address potential erosion effects through use of appropriate channel configurations, lining materials and culvert outlet/channel transitions (i.e., providing smooth transitions to reduce turbulence and

scour); and (7) use of energy dissipators so that post-development runoff velocities do not exceed pre-development levels.

All of the proposed site design/LID BMPs would help reduce long-term contaminant generation by reducing runoff volumes and velocities, retaining permeable areas, increasing on-site filtering and infiltration (although infiltration potential is expected to be limited based on soil types on site), and minimizing erosion/sedimentation potential. The site design/LID BMPs identified in the project SWMP would stay with the site following interim development and be applicable to ultimate site development. As noted in the project SWMP, LID design options are somewhat limited at the interim development stage, since only streets and pads will be graded. Accordingly, additional site design and LID BMPs, in particular those related to landscaping, irrigation, and landscape chemical applications, would be determined at ultimate development during the site plan review, prior to development of each lot.

Source Control BMPs. Source control BMPs are intended to avoid or minimize the introduction of contaminants into storm drains and natural drainages by reducing on-site contaminant generation and off-site contaminant transport to the MEP. Specific source control BMPs are identified in the project SWMP and the previously referenced regulatory/industry sources, with applicable measures including: (1) installing stenciling and/or tiles at storm drain inlets (per current County standards), and placing warning signs at appropriate locations (such as public access points along drainage channels) to discourage illicit contaminant discharge; (2) installing interim and/or permanent landscaping in appropriate locations (e.g., graded pads and slopes) to provide interim stability prior to ultimate site development (refer to Subchapter 1.1.3 for additional landscape details); and (3) employing automated irrigation systems in applicable landscaped areas with moisture and pressure sensors to limit irrigation during wet periods and preclude irrigation in areas of damaged or malfunctioning hardware (e.g., broken pipes or sprinkler heads). Additional source control BMPs related to efforts such as material loading/storage and solid waste management are not applicable to the proposed project, due to the fact that development would consist of graded (but unpaved and unoccupied) industrial pads and internal roadways. As outlined in Appendix L, however, the project SWMP identifies a number of additional source control BMPs that would be applicable to ultimate site development.

Treatment Control BMPs. Treatment control (or structural) BMPs are designed to remove pollutants to the MEP from urban runoff for a design storm event through means such as filtering, treatment, or infiltration. Although the use of identified site design/LID and source control BMPs is intended to reduce treatment requirements by preventing pollutants from entering storm water runoff and reducing runoff volumes and velocities, treatment control BMPs still would be required for the proposed project, with some such BMPs being applicable to both interim and ultimate development, as described below. Treatment control BMPs would incorporate either volume- or flow-based treatment control design standards (per County and NPDES standards). Specific treatment control BMPs identified in the Project SWMP for interim development include on-lot desiltation basins, hydrodynamic separators, and curb inlet filters, as summarized below (with additional information including proposed BMP locations provided in the project SWMP, SCEI 2010a in Appendix L).

Curb inlet filters/drainage inserts would be employed at applicable inlet locations in both the interim and ultimate development to provide treatment for flows from paved areas that do not pass through swales as described above. Proposed drainage inserts identified in the project SWMP are BioClean® units. These types of inserts typically include multiple screens and chambers to filter and settle out larger debris and suspended solids), and are also proposed to incorporate sorbent material to remove

hydrocarbons and a media filter to remove smaller particulates and dissolved metals. Drainage inserts have a medium removal efficiency for trash/debris, and provide medium or high removal of hydrocarbons, metals and/or sediment with the described additional treatment elements. All media filters would be sized to treat flows from an appropriate design storm (per applicable regulatory requirements), with additional design, cost, and operation/performance data provided in Appendix L.

Hydrodynamic separators equipped with continuous deflection separation (CDS) units would be employed at various locations at interim and ultimate development to treat storm water runoff associated with proposed roadways on site. Hydrodynamic separators are flow-through devices that employ centrifugal motion to provide generally moderate removal efficiencies for trash and debris, sediment and attached pollutants such as nutrients, oil and grease, and metals. Specific designs vary by manufacturer, but generally include screens to remove and collect larger materials, and separate chambers to capture sediment and associated contaminants removed by centrifugal force as flows move through the device in a "swirling" pattern.

Although not specifically called out in the treatment control BMP list in the SWMP, the on-site and off-site vegetated drainage channels would provide water quality treatment to stormwater generated on or passing through the project site. These facilities would provide filtration and infiltration as flows pass through and (to a lesser extent) percolate into the vegetated channel. Vegetated swales have a medium removal efficiency for contaminants including sediment, heavy metals, and oil and grease.

The identified treatment control BMPs would help to improve long-term water quality within and downstream of the project site and conform with applicable regulatory requirements by treating/removing contaminants from urban runoff prior to downstream discharge. The combination of these various types of treatment BMPs, together with the site design/LID and source control measures identified for the proposed project should serve to improve water quality on site and downstream of the site. As described in the project SWMP, additional treatment control BMPs in the form of on-lot water quality devices on every lot, and on-lot detention for specific lots identified above. Additional detention would be provided for select lots by the proposed regional detention basins on Lot 54.

Post-construction BMP Monitoring/Maintenance Schedules and Responsibilities. There are a number of different categories of BMP facilities proposed, including physical facilities such as vegetated swales, desiltation basins, and drainage inserts for interim development; and on-lot water quality devices and detention basins (and possible landscape/irrigation management) for ultimate development. These facilities would be maintained in perpetuity, with monitoring and maintenance responsibilities assigned to the property owner/developer, future lessees, or the County. Maintenance responsibilities would be determined under a County-approved maintenance agreement, which would address funding sources and schedules, among other things. Specific monitoring and maintenance efforts associated with applicable proposed BMP facilities and programs are summarized in Table 4.1-5, with additional information provided in the project SWMP (Appendix L).

Based on the described implementation, monitoring and maintenance of BMPs in conformance with County Storm Water Standards and the related NPDES Municipal Storm Water Permit, no significant adverse water quality impacts are anticipated with respect to project-related long-term generation of urban contaminants.

Implementation of the above described recommendations, standard design/construction measures, and regulatory conformance efforts would avoid or reduce any identified potential hydrology and water quality impacts from the proposed project to below a level of significance.

Cumulative Impacts

Development of the projects listed in Table 1-5 of this EIR (including the proposed project) could potentially result in significant cumulative water quality impacts, from effects such as increased erosion/sedimentation and the downstream transport of water-borne contaminants. This conclusion is alluded to in the San Diego County General Plan Conservation Element, which identifies ongoing water quality issues related to development and recognizes the fact that no comprehensive regional water quality control program was in place at the time the General Plan was adopted. Such a program is now in place, however, in the form of the RWQCB NPDES Municipal Stormwater Permit and the related County of San Diego Watershed Protection, Storm Water Management and Discharge Control Ordinance (Ordinance Nos. 9424 and 9426). These requirements are intended to protect receiving water beneficial uses (as identified in the RWQCB Basin Plan) by implementing site-specific and watershed-based requirements to meet related water quality objectives on a regional scale.

Implementation of the proposed project would result in the generation of short- and long-term contaminants, and would contribute to cumulative water quality impacts in downstream waters including the Tijuana River, Tijuana Estuary, and the Pacific Ocean. As described in the preceding analysis, implementation of the proposed project would require conformance with a number of regulatory requirements related to hydrology and water quality, including applicable elements of the CWA, County storm water standards, NPDES, and RWQCB Basin Plan. Based on such conformance (including the design measures described above and in Chapter 8.0 of this SEIR), all identified project-level hydrology and water quality impacts from the proposed project would be avoided or reduced below a level of significance. Because these described efforts would not (and cannot) completely eliminate the generation of contaminants, the project would incrementally contribute to cumulative water quality impacts. These cumulative impacts are considered less than significant, however, based on the following considerations: (1) all identified project-level water quality impacts would be avoided or reduced below a level of significance through site-specific project design features and conformance with existing regulatory requirements; and (2) the project and applicable past, current and future developments within the project cumulative study area would be subject to the identified water quality standards, with these requirements implemented through the referenced NPDES Municipal Permit and/or County of San Diego Watershed Protection, Storm Water Management and Discharge Control Ordinance. As outlined below, these requirements are specifically intended to limit urban runoff contaminants, conform to Basin Plan water quality objectives and beneficial uses, and address regional (i.e., cumulative) water quality impacts on a watershed-wide basis within the San Diego Basin.

The referenced NPDES Municipal Stormwater Permit and related County standards identify waste discharge requirements for urban runoff related to applicable new development, redevelopment and existing development sites under the jurisdiction of co-permittees (e.g., the County of San Diego). The intent of these requirements is to protect environmentally sensitive areas and provide conformance to applicable water quality standards, including the federal Clean Water Act and the RWQCB Basin Plan beneficial uses and water quality objectives. To this end, the Municipal Permit requires co-permittees to fund and implement jurisdictional and watershed based URMPs that would reduce runoff and contaminant discharges to the MEP, with the goal of "[p]romoting attainment of water quality objectives necessary to support designated beneficial uses." Specific measures identified

to meet these goals include (among other criteria) a number of numeric and qualitative standards related to water quality and runoff discharge. In addition to these site-specific elements, the noted regulatory requirements recognize both the regional nature of contaminant generation and the contribution of existing development to cumulative water quality effects. With respect to the first point, the Municipal Permit identifies the fact that "[u]rban runoff does not recognize political boundaries…," and that "[w]atershed-based land use planning (pursued collaboratively by neighboring local governments) can greatly enhance the protection of shared natural water resources." Specific measures identified to address these concerns include:

- Collaboration between individual co-permittees is required to establish URMPs for specific watersheds that extend across jurisdictional boundaries, and to (among other tasks) compile associated data bases (including mapping); assess receiving water quality; identify, prioritize, and monitor water quality problems; generate proposed mitigation efforts and responsibilities (including the assessment of long-term effectiveness); and document the described efforts in annual reports to the RWQCB. The described tasks were conducted on a jurisdictional basis for the first two years, and were expanded to include a watershed-based approach for subsequent efforts. This requirement has been implemented for the Project site watershed through adoption of the Tijuana River Watershed WURMP in January 2003.

- Co-permittees are required to designate a principal permittee to coordinate the above described activities among the co-permittees; coordinate the preparation of a regional "Unified Jurisdictional URMP Document" (including assessment, monitoring, and reporting efforts similar to those described above); and serve as a liaison to the RWQCB. The City of Imperial Beach has been designated as the principal permittee for the Tijuana River Watershed WURMP.

- Co-permittees are required to assess and (if applicable) modify general plan, environmental review, and development approval processes to reflect the Municipal Permit requirements, including the noted watershed-based assessment of water quality issues. This requirement has been met through the referenced County of San Diego Watershed Protection, Storm Water Management and Discharge Control Ordinance and Tijuana River Watershed WURMP.

- Co-permittees are required to implement education programs to ensure that planning, development review, and other applicable staff members, as well as project applicants (and other applicable non-regulatory personnel), adequately understand water quality laws and regulations, the connection between land use decisions/development and water quality impacts, and the methodology for reducing such impacts. This requirement has been met through the referenced County of San Diego Watershed Protection, Storm Water Management and Discharge Control Ordinance.

The Municipal Permit also identifies the contribution of existing development to cumulative water quality issues, and requires co-permittees to implement the following measures to assess and reduce cumulative impacts:

- Co-permittees are required to include and implement Existing Development components in their URMPs for existing municipal, residential, commercial, and industrial sites, to "[m]inimize the short and long-term impacts on receiving water quality from all types of

existing development." Specific methods identified to achieve this requirement include efforts such as contaminant source control and implementation of retrofit BMPs. This requirement has been met through the referenced Tijuana River Watershed WURMP and County of San Diego Watershed Protection, Storm Water Management and Discharge Control Ordinance.

- Co-permittees are required to implement URMP Components to actively seek and eliminate illicit discharges and connections to municipal stormdrains, including efforts to monitor, detect, and eliminate such conditions, as well as measures to provide alternative disposal options (e.g., hazardous material collection sites/events) and enforcement capacity. This requirement also has been met through the referenced Tijuana River Watershed WURMP and County of San Diego Watershed Protection, Storm Water Management and Discharge Control Ordinance.

4.1.4 Public Services and Utilities

Public services and utilities impacts are addressed in Section 4.11 of the EOMSP Final EIR. Public services are defined as fire protection, police protection, water, wastewater (i.e., sewer), and schools. The following entities provide public services to the community of East Otay Mesa and would provide services within the project site: San Diego Rural Fire Protection District (SDRFPD), San Diego County Sheriff's Department – Imperial Beach Station, Otay Water District (OWD), East Otay Mesa Sewer Maintenance District (EOMSMD), and both Sweetwater Union High School District (SUHSD) and San Ysidro School Districts (SYSD). The previously certified EIR identified significant and mitigable impacts to public services and utilities related to schools, water, wastewater and solid waste, due to the inadequate capacity of some providers to meet project-related increased demand. Mitigation measures were recommended to avoid or reduce potentially significant impacts. The mitigation measures identified in the prior EIR related to schools and solid waste are not applicable to the proposed project, as discussed in Subchapter 4.2; however, the water supply mitigation measures are applicable and are addressed below, while the wastewater/sewer measures are discussed in Subchapter 3.4. The prior EIR also considered potential impacts to fire and emergency services, police protection, parks and recreation, libraries and gas and electricity services, but determined that no significant impacts would occur and mitigation was not required in the EOMSP Final EIR.

A NOP and *Environmental Review Update Checklist Form for Projects with Previously Approved Environmental Documentation* were prepared by the County on April 6, 2006 (Appendix A). The County determined that since the previous EIR was certified, there have been changes in the project and changes in the circumstances that could result in a new significant impact to public services and utilities, including the need to expand police protection in the area, the proposed sewer service is different from what was previously contemplated and the need to demonstrate water availability under SB 610. Service availability letters have been received by the County from OWD, SDRFPD, EOMSMD and SYSD and are contained in Appendix H to this report. Significant impacts requiring mitigation were identified in relation to sewer and police services and are discussed in Subchapter 3.4, *Public Services and Utilities*. The following discussion addresses the potentially significant impacts to water service of the Otay Crossings Commerce Park project in the context of the prior analysis, given the changed conditions. Subchapter 4.2 addresses all other public services for which the County determined would have less than significant impacts in the *Environmental Review Update Checklist Form for Projects with Previously Approved Environmental Documentation*.

Guidelines for the Determination of Significance

The following guidelines of significance will be considered substantial evidence that a significant impact to public services and utilities would occur if:

1. Sufficient water supplies are not available to serve the project from existing entitlements and resources.

2. The project would require the construction of new or expanded water or stormwater drainage facilities which could cause significant environmental impacts.

Analysis of Project Effects and Determination as to Significance

Water Supply (Guideline 1)

Water service and supply for East Otay Mesa are addressed in Section 4.11.6 of the EOMSP Final EIR. East Otay Mesa is located within the southern service area or Otay Mesa System of OWD, a water purveyor serving the south San Diego County region. OWD indicated that there is currently sufficient existing or planned water storage and transmission capacity to accommodate development in East Otay Mesa, provided that regional water supplies are met by the San Diego County Water Authority (Water Authority) and Metropolitan Water District (MWD) (County of San Diego 2002). OWD also indicated that adequate storage and supply capacity would be available to serve the proposed project over the next 20 years (see Appendix I). A Conceptual Water Study and Water Supply Assessment Report were prepared for the proposed project (PBS&J 2008a and Otay Water District 2007, respectively; see Appendix I). The November 2007 report was approved by the OWD's Board on December 5, 2007 and no further action is required. The overall water demand projections are consistent with the approved assessment (PBS&J 2008a).

The ability of OWD to provide water to the proposed project for the next 20 years, as required by SB 610, is directly linked to the ability of the Water Authority to purchase sufficient water from MWD, with MWD dependent upon the sufficiency of water deliveries from its existing water supply The MWD existing water supply consists of deliveries from the Colorado River via the Colorado River Aqueduct, and northern California via the State Water Project (SWP). In addition, MWD has obtained supplemental water supplies over the years to augment the main supplies, including the Imperial Irrigation District (IID)/Water Authority Transfer, and Coachella and All-American Canal Lining Projects (MWD 2005). Written contracts and other proof for these water supplies are provided within the WSA (Otay Water District 2007). Potential future water supply projects include a saltwater desalination plant in Carlsbad.

Water suppliers throughout California continue to have climatological, environmental, legal, and other challenges that impact water supply, such as the recent Sacramento-San Joaquin Delta court ruling. To address potential water supply issues, the 2005 Urban Water Management Plan (UWMP) includes a detailed shortage contingency analysis. This plan includes a series of actions to minimize impacts of shortages and ensure equitable allocation of supplies.

The amount of water delivered to OWD is based on projected demand estimates prepared by the Water Authority and MWD, which takes into consideration several variables, including regional growth forecasts prepared by SANDAG and land use criteria (i.e., types of land use). Data on

projected population and growth rate projections from SANDAG regional growth forecasts are used in projected demand estimates to provide for consistency between retail and wholesale agencies' water demand projections. As shown in the WSA (Otay Water District 2007), potable water supply and demand within the OWD can be balanced under normal year conditions, single dry year conditions, and multiple dry year conditions.

Recycled water resources to meet projected demands are planned to be supplied from local wastewater treatment plants. Specifically, recycled water within the OWD is produced by the Ralph W. Chapman Water Recycling Facility (RWCWRF) and the City of San Diego's South Bay Water Reclamation Plant (SBWRP). Since the year 2000 through mid May 2007 (prior to the SBWRP providing recycled water to the OWD), recycled water demand has exceeded the supply and therefore potable water was used.

As stated above, OWD obtains 100 percent of its potable water supply from the Water Authority. It currently has no local supply of potable water or groundwater resources; however, it does have a Water Conservation Program and a Recycled Water Program. The main goals of the Water Conservation Program are to reduce the demand for more expensive/imported water, demonstrate continued commitment to BMPs, and ensure a reliable water supply. In compliance with these programs, California Urban Water Conservation Council (CUWCC) BMPs, and the County's development requirements, water conservation measures would be incorporated into the proposed project. Specifically, the proposed project includes installation of ultra low flow toilets, development of a water conversation plan, and beneficial use of recycled water in compliance with the CUWCC BMPs. The proposed project would also comply with 7 of the 14 Otay Water District Conservation Program BMPs (the other 7 BMPs are not applicable to the proposed project), as follows:

- Water Audits, Leak Detection and Repair (BMP03)
- Metering with Commodity Rates for all New Connections and Retrofit of Existing (BMP04)
- Large Landscape Conservation Programs and Incentives (BMP05)
- Public Information Programs (BMP07)
- Conservation Programs for CII Accounts (BMP09)
- Conservation Pricing (BMP11)
- Water Waste Prohibition (BMP13)

Integration of the water conservation measures would satisfy the requirements of Mitigation Measure 11B from the EOMSP Final EIR, which requires the integration of water conservation measures identified by MWD and the Water Authority.

The Conceptual Water Study and Water Supply Assessment Report state that based on the current land use planning, the ultimate average potable water demand for eventual industrial development of the entire project site is estimated to be approximately 0.264 mgd of potable water and 0.034 mgd of recycled water (see Table 4.1-2); this projection is included in the OWD's 2005 UWMP analysis. Based on the information provided in the Water Supply Assessment Report, it is concluded that MWD would provide the Water Authority with an adequate supply for the next 20 years during average-year, dry-year, and multiple-dry-year conditions, and, in turn, the Water Authority would provide OWD with an adequate supply for the next 20 years. It is also concluded that the OWD has adequate water supply systems to service the proposed project (PBS&J 2007). Subsequent to the preparation of the Water Supply Assessment Report, the project was revised which would reduce

potable and recycled water demands to 0.23 mgd and 0.031 mgd, respectively (PBS&J 2008a). As such, less than significant impacts to water supply are expected.

Water System Infrastructure (Guideline 2)

Potable Water. The project site is within OWD's 871 Pressure Zone, which is currently supplied by an 11-million gallon storage tank and a 13,400-gallon per minute (gpm) pump station. There are numerous existing facilities in the 871 Pressure Zone, from which the proposed project would install connections and potable and recycled water mains. The existing 12- and 24-inch transmission mains along Alta Road contain adequate water storage and would provide potable water to the project. In addition, the 12- and 24-inch transmission mains along Alta Road would serve as an emergency interconnect with Mexico to supply emergency water to the City of Tijuana at a rate of 12.9-mgd, if needed. This interconnect will be evaluated as part of the Sub-Area Water Master Plan (SAMP) analysis. The proposed project would not require the addition of any off-site improvements and would not be responsible for the construction of any off-site facilities. Based on the projected demands and system looping, on-site potable water distribution facilities are proposed to be 12-inches in diameter (see Figure 1-6 in Chapter 1.0, *Project Description*), pending final land use and fire flow requirements. The required fire flow for the project is anticipated to range from 3,500 to 4,000 gpm (PBS&J 2008a).

OWD will serve the development of East Otay Mesa in conformance with the EOMSP. Major capital improvements such as transmissions lines and storage facilities, would be constructed by the OWD as necessary, using revenue generated from property owners. Based on the preliminary land use information available for the project site, discussions with OWD engineering staff, and the OWD Water Master Plan, construction of off-site water storage or distribution piping would not be required to serve the Otay Crossings Commerce Park project. While OWD's Capital Improvements Program (CIP) includes the construction of an 8-MG reservoir and 11,000-gpm pump station for 2017 and 2011, respectively, these facilities would not be triggered by the proposed project and are programmed in the District's CIP (PBS&J 2008a). Recently, the District entered into an agreement with the City Water Department for 10-mgd of water supply from the City's Otay Filtration Plan to provide additional water supply reliability for the Central and Otay Mesa service areas. The City's obligation to supply water under this agreement is contingent upon there being a surplus of water at the plant, until such time when the plant is expanded. Therefore, adequate water service infrastructure exists or will be built to service the proposed project, and impacts would be less than significant.

Recycled Water. OWD policy requires the use of recycled water for parks and landscaping irrigation needs and has in effect an Incremental Interruption and Conservation Program (which would be triggered by regional water shortages and other consumption-reducing circumstances). While OWD currently requires construction of separate recycled water distribution systems to serve everyday irrigation demands, recycled water is not yet available within the Otay Mesa Service Area; under such circumstances, existing recycled water systems are charged with potable water until recycled water service becomes available.

The project site is within the OWD's planned 860 Recycled Water Pressure Zone which, when completed, will primarily serve the newly developed areas in the unincorporated areas in the County of San Diego between the Otay River and the U.S./Mexico International border (PBS&J 2008a). Although OWD ultimately plans to provide recycled water service for the proposed project, there are no facilities currently available for recycled water connections to the project site. Sections of recycled water pipeline have been constructed; however, they are either dry or temporarily charged with

potable water. A CIP-planned 24-inch recycled water main would be constructed in Alta Road as part of the proposed project, as would 8- and 6-inch mains in various other roadways in the project area. Additionally, there will be a 16-inch recycled water main in Airway Road west of Alta Road that is not part of the proposed project (see Figure 1-7 in Chapter 1.0). Current land use planning for the proposed project estimates an average daily recycled water demand of approximately 30,859.6 gpd, which is equivalent to the OWD planned usage, but is approximately 3,000 gpd less than the 0.034 mgd estimated in the 2005 UWMP (PBS&J 2006 & 2007). A 4-million gallon recycled water storage tank planned for the 860 Pressure Zone as part of the CIP will be constructed by others east of the G.F. Bailey Detention Facility (as shown in Figure 5 of Appendix H) within the next several years; the proposed project would not be responsible for construction of the tank. Additionally, a new 20-inch pipeline will be constructed in Wueste Road that will supply recycled water to the 860 Otay Mesa system via a future 944/860 Pressure Reducing Station (PRS). This 20-inch pipeline, along with plans to route flows through the existing 680-1 and 944-1 pump stations, which are planned to be upsized, will accommodate additional flows (PBS&J 2008a).

At this time, there are no facilities available for connection that contain recycled water, although sections of the recycled water pipeline have been constructed and are charged temporarily with potable water. The proposed project would construct the 24-inch recycled water transmission main proposed by OWD in Alta Road (between Otay Mesa Road and Airway Road). Several 8-inch distribution pipelines are proposed in Otay Mesa Road, Loop Road and Airway Road, consistent with the OWD 2002 Master Plan.

In conclusion, the increase in demand on potable and recycled water systems in the area associated with the proposed project would be less than significant, and no mitigation would be necessary.

Analysis of Cumulative Impacts

Cumulative public services and utilities impacts from implementing the EOMSP were discussed in Section 7.11 of the EOMSP Final EIR. That prior analysis determined that the cumulative development proposed for the East Otay Mesa area is generally planned to occur in conjunction with the expansion or extension of the necessary services and infrastructure, so that in most cases, significant cumulative impacts would not occur. It was noted that exceptions to this statement would be related to the provision of school facilities, regional water demand and solid waste disposal. As discussed in Subchapter 4.2.6, *Public Services and Utilities*, the issues of provision of school facilities and solid waste disposal are not applicable to the proposed project; however, cumulative impacts to water demand would be applicable and are addressed below.

The EOMSP Final EIR noted that cumulative impacts to regional demand for potable and recycled water are potentially significant because of the region's reliance on imported water and future uncertainties regarding the reliability of imported water supplies and infrastructure. This potentially significant cumulative impact was considered mitigable to less than significant levels by the implementation of mitigation measures at an individual project level involving BMP water conservation measures, and preparation of a Water Conservation Plan for the EOMSP area as a condition of tentative map approvals. As noted in the project-level analysis for the Otay Crossings Commerce Park, the OWD prepared and approved a Water Supply Assessment Report on December 5, 2007 in compliance with SB 610 and, by doing so, indicated sufficient water supplies exist or are planned to be available during normal, single dray year and multiple dry years during a 20-year planning horizon. Nonetheless, the proposed project would be required to comply with the OWD

Water Conservation Program and would implement the BMP water conservation measures[4]. Similarly, all other cumulative development in the project vicinity would also be required to comply with the OWD Water Conservation Program and implement the BMP measures. In light of the discussion above, cumulative impacts to water demand would be considered less than significant.

In conclusion, cumulative impacts to water services are anticipated to be less than significant.

[4] The following seven Water Conservation BMPs have been identified as applicable to the proposed project and future site plans on site:
BMP03 - Water Audits, Leak Detection and Repair; BMP04 - Metering with Commodity Rates for all New Connections and Retrofit of Existing; BMP05 - Large Landscape Conservation Programs and Incentives; BMP07 - Public Information Programs; BMP09 -Conservation Programs for CII Accounts; BMP11 - Conservation Pricing; BMP13 - Water Waste Prohibition

Table 4.1-1
AESTHETICS POLICY CONSISTENCY EVALUATION

Policy Language	Consistency Evaluation
EOMSP Subarea 2 Policies	
Policy COS-1: Protect and conserve steep slopes and biologically sensitive areas in the Specific Plan area.	**Consistent** – No steep slopes or biologically sensitive areas identified as "G" Designatory areas would be impacted by the proposed project.
Policy COS-2: Avoid any agricultural or predevelopment clearing and grading on steep slope areas.	**Consistent** – No clearing or grading of steep slope areas is proposed.
Policy UD-1: Encourage the preservation and enhancement of visually prominent landforms and areas of special scenic beauty, particularly the San Ysidro Mountain foothills and the valley walls of Johnson and O'Neal Canyons.	**Consistent** – No visually prominent landforms or areas of special scenic beauty occur on site.
EOMSP Design Guidelines	
Policy UD-2: Implement a Streetscape Plan that enhances the identity and image of the East Otay Mesa Specific Plan Area. Coordinate the Streetscape Plan for roads that are within the jurisdiction of both the City and County.	**Consistent** – The proposed grading plan and landscape concept plan were developed consistent with the County Grading Ordinance and EOMSP Design Guidelines (see Figures 1-4 and 1-8). The plans enhance the identity of the Specific Plan area through consistent road sections and landscape placement.
Policy UD- 5: Promote high quality design of buildings and landscaping on private property throughout East Otay Mesa to create a strong identity and image of high quality urban design for the area.	**Consistent** – The landscape concept plan would create a high-quality urban setting for the project site. Site plans to be submitted for individual lots would also have to comply with this policy.
Policy UD-6: On-site landscaping along public streets should be compatible and complementary with the streetscape design of the public right-of-way.	**Consistent** – The proposed landscape concept plan was developed consistent with the EOMSP Design Guidelines. The plans enhance the identity of the Specific Plan area through consistent landscape placement along major roads.
Policy UD-7: All utility lines shall be underground. Traffic signal vaults, electrical transformers, telephone switchboards and other such structures shall be located underground or appropriately screened with landscaping or architectural treatment acceptable to the County.	**Consistent** – All utility lines would be placed underground and/or screened with landscaping during project implementation.

Table 4.1-1 (cont.)
AESTHETICS POLICY CONSISTENCY EVALUATION

Policy Language	Consistency Evaluation
EOMSP Design Guidelines (cont.)	
Minimize the amount of site grading by terracing building pads.	**Consistent** – As shown in the grading plan, building pads would be terraced.
Elevation differences between adjacent building pads should not exceed 15 feet.	**Consistent** – As shown in the grading plan, elevation differences between building pads would not exceed 15 feet.
Contour grading should be used to blend with natural topography.	**Consistent** – As shown in the grading plan, contour grading would be implemented on site.
Unpaved areas between street curbs and setback lines should be landscaped.	**Consistent** – Project proposes landscaping along roadways and temporary landscaping beyond the streetscape. Future site plans would be responsible for installing permanent landscaping.
Required setback areas bordering and paralleling streets should be reserved for landscaping.	**Consistent** – Setback areas would be reserved for landscaping, to be installed by future site plans.
Landscaping in setback areas or parkways paralleling streets should be contoured and mounded.	**Consistent** – Landscaping would be installed along the streetscapes, while setback areas would be reserved for future landscaping to be installed by future site plans.
Maximum slope ratios should not exceed 3:1 and the average mound height should be 30 inches.	**Consistent** – Slope ratios would not exceed 3:1 and mound heights, if constructed, would be about 30 inches as shown on the project grading plan.
Maximum slope ratios should not exceed 5:1 where turf is planned.	**Consistent** – Slope ratios on turfed areas constructed would not exceed 5:1.
Tree planting in the landscape setback zone should be coordinated with public right-of-way street tree planning (pursuant to Figures 2-14 through 2-19 in the EOMSP).	**Consistent** – Tree planting along the public right-of-way would be consistent with the figures in the plan.
Fences and walls should not exceed 72 inches above grade and be made of durable materials (not wood or chain link) if abutting a public road.	**Consistent** – Fences and walls would not exceed 72 inches and would be made of durable materials where they are permanent; future site plans would be allowed to use temporary chain link fencing with slats and landscaping to screen interim uses. Most of the interim use areas would not abut public roads.
Hedges or dense landscaping may be used to screen fencing.	**Consistent** – Hedges and fences are proposed along all permanent and temporary fencing to screen them from view.
Lighting must comply with the County's Light Pollution Control Dark Sky Ordinance.	**Consistent** – The proposed project would comply with the County's Ordinance.
Utility structures should be screened by landscaping.	**Consistent** - Above-grade utility structures constructed by the project applicant would be screened by landscaping.

Table 4.1-2
MEASURES IDENTIFIED TO AVOID OR MINIMIZE EROSION AND SEDIMENTATION IMPACTS IN THE PROJECT STORM WATER MANAGEMENT PLAN

- Implementation of erosion control measures such as stockpile/solid waste management, stabilized construction entrances/exits, and slope protection (e.g., with tarps or appropriately timed vegetative cover).
- Implementation of sediment control measures including the use of silt fence, fiber rolls, temporary desilting basins, gravel bags, berms, street sweeping/vacuuming, and storm drain inlet protection.
- Control of construction-related contaminants through measures such as proper vehicle/equipment maintenance procedures (e.g., appropriately located and contained maintenance areas), control of material delivery and storage areas (e.g., proper containment and recording keeping), concrete waste management (e.g., use of washouts), spill prevention and control, water conservation, control of dewatering operations (e.g., appropriate discharge locations and methods), and proper management of paving and grinding operations.

Table 4.1-3
POTENTIAL SWPPP MEASURES TO AVOID OR MINIMIZE IMPACTS RELATED TO EROSION AND SEDIMENTATION

Typical drainage, erosion and sediment control measures that would likely be implemented as part of the Project NPDES Industrial Permit SWPPP at ultimate development include the following:

- Using positive grading techniques and appropriate drainage facilities (e.g., swales or brow ditches) to direct surface flows away from unstable areas such as manufactured slopes and material stockpiles, and into drainage facilities and/or outlets.
- Restricting grading operations during the rainy season (October 1 to April 30) for applicable locations and conditions.
- Preparing and implementing a "weather triggered" action plan for grading/excavation activities conducted during the rainy season, to provide enhanced erosion and sediment control measures within 24 hours of (prior to) predicted storm events (i.e., 40 percent or greater chance of rain).
- Using phased grading schedules to limit the area subject to erosion at any given time.
- Using erosion control/stabilizing measures such as geotextiles, mats, fiber rolls, soil binders, or temporary hydroseeding (or other plantings) established prior to October 1, in appropriate locations including cleared areas and graded slopes.
- Using sediment controls to protect the perimeter of the impact footprint and/or active excavation areas, and prevent off-site sediment transport. Specific measures for sediment control may include efforts/devices such as the use of temporary inlet filters, silt fences, fiber rolls, gravel bags, temporary sediment basins, check dams, street sweeping, energy dissipators, stabilized construction access points (e.g., with "shaker plates") and soil stockpiles (e.g., with fiber roll berms and/or silt fence), and use of properly fitted covers for material transport vehicles (e.g., soil or aggregate trucks).
- Storing BMP materials in applicable on-site areas to provide "standby" capacity adequate to provide complete protection of exposed areas and prevent off-site sediment transport.
- Providing appropriate training for personnel responsible for the installation and maintenance of BMPs.
- Using solid waste management efforts such as proper containment and disposal of construction debris.
- Complying with local dust control requirements through measures such as regular watering and/or use of chemical palliatives.
- Installing permanent landscaping, with emphasis on native and/or drought-tolerant varieties, as soon as feasible during or after Project grading/excavation.
- Implementing appropriate monitoring and maintenance efforts (e.g., prior to and after storm events) to ensure proper BMP function and efficiency.
- Implementing sampling/analysis, monitoring/reporting and post-construction management programs per NPDES requirements.
- Using additional BMPs as necessary based on monitoring/reporting efforts to ensure adequate erosion and sediment control.

Table 4.1-4
POTENTIAL MEASURES TO AVOID OR MINIMIZE IMPACTS RELATED TO THE USE AND DISCHARGE OF CONSTRUCTION-RELATED HAZARDOUS MATERIALS

- Use raised (e.g., on pallets), covered, and/or enclosed storage facilities for all hazardous materials.
- Use mobile fueling/maintenance units for construction equipment whenever feasible to avoid/reduce on-site fuel/lubricant storage.
- Maintain accurate and up-to-date written inventories and labels for all stored hazardous materials.
- Use berms, ditches, and/or impervious liners (or other applicable methods) in material storage and vehicle/equipment maintenance and fueling areas to provide a containment volume of 1.5 times the volume of stored/used materials and prevent discharge in the event of a spill.
- Place warning signs in areas of hazardous material use or storage and along drainages and storm drains (or other appropriate locations) to avoid inadvertent hazardous material disposal.
- Properly maintain all construction equipment and vehicles.
- Properly contain and dispose of paving wastes and slurry (e.g., by using properly designed and contained concrete washout areas).
- Minimize the amount of hazardous materials used and stored on site, and restrict storage/use locations to areas at least 50 feet from storm drains and surface waters.
- Provide training for applicable employees in the proper use, handling and disposal of hazardous materials, as well as appropriate action to take in the event of a spill.
- Store absorbent and clean-up materials in appropriate on-site locations where they are readily accessible.
- Properly locate and maintain wastewater facilities.
- Use recycled or less hazardous materials wherever feasible.
- Post regulatory agency telephone numbers and a summary guide of clean-up procedures in a conspicuous location at or near the job site trailer.
- Regularly (at least weekly) monitor and maintain hazardous material use/storage facilities and operations to ensure proper working order.
- Implement a SWSAS program pursuant to regulatory guidelines.
- Restrict construction debris storage areas to appropriate locations at least 50 feet from storm drain inlets and water courses.
- Use appropriate storage facilities for construction debris, including adequately sized watertight dumpsters, covers to preclude rain from contacting waste materials, impervious liners, and surface containment features such as berms, dikes or ditches to prevent runon and runoff.
- Employ a licensed waste disposal operator to regularly (at least once a week) remove and dispose of construction debris at an authorized off-site location.

Table 4.1-5
SUMMARY OF TYPICAL/PROPOSED BMP MONITORING AND MAINTENANCE EFFORTS

- Desiltation Basins, On-lot Water Quality Devices, and Detention Basins – According to the project SWMP, desiltation basins, on-lot water quality devices, and detention basins fall under the second category of maintenance assurance requirements. A Storm Water Facilities Maintenance Agreement, with Easement and Covenants, shall be entered into between the property owner/developer and the County of San Diego, obliging the owner/developer to maintain the category two BMPs in perpetuity. The owner/developer would be obligated to provide security to the County to back up the agreement. Specific maintenance efforts for the proposed infiltration basin would include: (1) regular inspections conducted prior to and after the rainy season (with additional inspections to be conducted after larger storm events) to ensure proper function and conduct scheduled maintenance such as removal of trash and accumulated sediment, vegetation management (e.g., trimming and replacement), removal of standing water, and implementing repairs as necessary (e.g., for eroded areas); and (2) observations/documentation of drainage times after installation of the basin, and after larger storm events, to verify that appropriate drainage times are being maintained (i.e., complete infiltration with 72 hours or less), and to preclude formation of mosquito and other vector habitats.
- Curb Inlet Filters and Hydrodynamic Separators – According to the project SWMP, curb inlet filters and hydrodynamic separators fall under the third category of maintenance assurance requirements. A Storm Water Maintenance Zone would be established to ensure proper maintenance of the BMPs in perpetuity, with initiation of the maintenance zone to occur during the final engineering stage of ultimate development. The primary funding mechanism for the maintenance zone will be a special assessment under the authority of the Flood Control District, to be collected with property taxes. Prior to establishment of the maintenance zone, developer fees would cover monitoring and maintenance of all BMPs, regardless of category, for the first 24 months. Monitoring and maintenance requirements for other proposed drainage and water quality facilities would include: (1) regular inspection, with inspection frequencies based on pollutant accumulation and specific maintenance needs and (2) conducting as-needed preventative and corrective maintenance and repairs to ensure proper working order and function.

Table 4.1-6
OTAY CROSSINGS COMMERCE PARK PROJECTED AVERAGE ANNUAL WATER DEMANDS

Land Use	Potable Water		Recycled Water	
	Net Acres	Demand (gpd)	Irrigated Area	Demand (gpd)
Mixed Industrial	212.0	195,924	212.0	195,924
Border Crossing	73.9	68,312	73.9	68,312
Right-of-Way	25.6	0.0	25.6	0.0
Total	311.5	264,236*	311.5	264,236

* Subsequent to the preparation of the Water Supply Assessment Report, the project was revised which would reduce potable and recycled water demands to 0.23 mgd and 0.031 mgd, respectively(PBS&J 2008a).
Source: Otay Water District 2007.

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