IV. Environmental Impact Analysis

L.1 Utilities and Service Systems—Water Supply

1. Introduction

This section analyzes the proposed project's potential impacts on water supply and the water infrastructure system. The analysis describes regional water supplies and existing water infrastructure serving the project site, estimates the water demand associated with the project, and assesses whether there is sufficient water supply and infrastructure capacity to meet that demand. The analysis of water supply is based on the *Water Supply Assessment for The Boyle Heights Mixed-Use Community Project* prepared by the Los Angeles Department of Water and Power, Water Resources Division dated November 3, 2009 (see Appendix M.1 of this Draft EIR). The analysis of water infrastructure is based on the *Domestic Water System Study*, June 10, 2011, prepared by Stantec Consulting Inc., included as Appendix M.2 to this Draft EIR.

2. Environmental Setting

a. Existing Conditions

(1) Water Supply

The Los Angeles Department of Water and Power (LADWP) is responsible for providing water within the City of Los Angeles (City) limits and ensuring that the water quality meets applicable California health standards for drinking water. As the Project site is located within the City, LADWP is the water provider for the Project site. Water is supplied to the City from four primary sources: the Los Angeles Aqueducts (LAA), local groundwater, the Metropolitan Water District (MWD), and recycled water. Table IV.L-1 on page IV.L-2 shows LADWP water supplies for the last ten years provided by local groundwater, LAA, MWD, and recycled water. As shown in Table IV.L-1, in 2009, LADWP had an available water supply of 561,306 acre-feet (AF), of which approximately 24.4 percent of LADWP's water supply was from the LAA, approximately 11.6 percent from local groundwater, approximately 63.2 percent from the MWD, and approximately 1.3 percent from recycled water. Additionally, less than 1 percent was taken and stored in the reservoir system. These water sources are described in further detail below.

Table IV.L-1
LADWP Water Supply

Year	Los Angeles Aqueducts	Local Groundwater	MWD	Recycled Water	Transfer, Spread, Spills, and Storage[a]	Total
1998	466,836	80,003	56,510	1,326	7,769	596,906
1999	309,037	170,660	164,112	1,812	-3,507	649,128
2000	255,183	87,946	336,116	1,998	2,569	678,674
2001	266,923	79,073	309,234	1,675	-1,994	658,899
2002	179,338	92,376	410,329	1,945	-1,405	685,392
2003	251,942	90,835	322,329	1,759	2,528	664,338
2004	202,547	71,831	391,834	1,774	-2,958	670,944
2005	368,839	56,547	185,346	1,401	3,140	608,993
2006	378,922	63,270	188,781	4,890	-1,336	637,199
2007	129,400	89,018	439,436	3,639	1,044	660,449
2008	147,365	60,149	429,110	7,051	-1,664	642,011
2009	137,084	64,996	354,789	7,489	3,052	561,306

Units are in acre-feet.

[a] *A negative number does not represent a loss. Rather, the negative number indicates the amount of water that has been taken or stored into the reservoir system. A positive number indicates spills from the reservoir system. For example, in 1998 approximately 7,769 AF of water was spilled from the reservoir system, while in 1999 approximately 3,507 AF of water was taken or stored into the reservoir system.*

Source: Los Angeles Department of Water and Power, Water Supply Assessment—The Boyle Heights Mixed-Use Community Project, November 3, 2009 and LADWP, 2010.

(a) Los Angeles Aqueducts

Snowmelt runoff from the Eastern Sierra Nevada Mountains is collected and conveyed to the City via the LAA. LAA supplies come primarily from snowmelt and secondarily from groundwater pumping, and can fluctuate yearly due to the varying hydrological conditions. In recent years, LAA supplies have been less than historically normal due to environmental restoration obligations in Mono and Inyo Counties.[1]

[1] *Los Angeles Department of Water and Power, Water Supply Assessment—The Boyle Heights Mixed-Use Community Project, November 3, 2009.*

The City holds water rights in the Eastern Sierra Nevada where the LAA water supplies originate. These supplies originate from both streams and from groundwater. In 1905, the City approved a bond measures for the purchase of land and water rights in the Owens River Valley. By 1913, the first LAA began its deliveries of water to the City primarily from surface water diversions from the Owens River and its tributaries. Historically, these supplies were augmented from time to time by groundwater extractions from beneath the lands that the City had purchased in the Owens Valley. In 1940, the first LAA was extended north to deliver Mono Basin water to the City pursuant to water rights permits and licenses granted by the State Water Resources Control Board. In 1970, the second LAA was completed, increasing total delivery capacity of the LAA system to approximately 561,000 AF per year. The second LAA was to be filled by completing the Mono Basin diversions originally authorized in 1940, by a more effective use of water for agricultural purposes on City-owned lands in the Owens Valley and Mono Basin and by increased groundwater from pumping the City's lands in the Owens Valley.

In 1972, Inyo County filed a CEQA lawsuit challenging the City's groundwater pumping program for the Owens Valley. The lawsuit was ended in 1997, with the County of Inyo and the City entering into a long-term water agreement for the management of groundwater in the Owens Valley. That water agreement, entered as a judgment of the Superior Court in the County of Inyo outlines the management of the City's Owens Valley groundwater resources. As a result of this water agreement and the subsequent Memorandum of Understanding (MOU), LADWP has dedicated 37,000 AF of water annually for enhancement and mitigation projects throughout Owens Valley, which includes the rewatering of 62 miles of the Lower Owens River. LADWP also provides approximately 80,000 AF of water annually for other uses in the Owens Valley such as irrigation, town water supplies, stockwater, wildlife and recreational purposes.

In September 1994, the State Water Resources Control Board issued Decision 1631, which placed conditions on LADWP's water exports from the Mono Basin. LADWP currently exports approximately 16,000 AF of water annually from the Mono Basin. LADWP has implemented extensive restoration and monitoring programs in Mono Basin to increase the level of Mono Lake and to improve stream conditions, fisheries, and waterfowl habitats. With reduced diversions from the Mono Basin and favorable hydrologic conditions, Mono Lake's elevation has risen overtime. Once the elevation of Mono Basin reaches 6,391 feet above mean sea level, a moderate increase in water exports from the Mono Basin will be permitted pursuant to the Decision 1631. Currently, up to 74,000 of water annually is being utilized for environmental restoration in Mono Basin.

Additionally, in July 1998, LADWP and the Great Basin Unified Air Pollution Control District entered into a Memorandum of Agreement to mitigate dust emissions from Owens Lake. As of December 31, 2008, LADWP has mitigated dust from 29.8 square miles of

Owens Lake. LADWP is currently working on mitigating dust emissions from an additional 12.7 square miles of Owens Lake. LADWP was scheduled to complete its latest phase of dust mitigation by October 2010, but is behind schedule. Upon completion of the latest phase, LADWP would have mitigated dust emissions from 39 square miles of Owens Lake, requiring an estimated 95,000 AF of water per year annually to sustain the dust mitigation program.

As indicated in Table IV.L-1, approximately 137,084 AF of LADWP's water supplies were from the LAA in 2009. In addition, average deliveries from the LAA system have been approximately 239,100 AF of water annually over the last five fiscal years. LADWP projects that the average annual LAA delivery is expected to be between approximately 200,000 AF to 230,000 AF.[2]

(b) Groundwater

LADWP traditionally extracts groundwater from nine wellfields throughout the Owens Valley and four local groundwater basins. LADWP owns approximately 315,000 acres of property in the Owens Valley and appropriates groundwater from beneath its land for use in the Owens Valley and in Los Angeles in accordance with a long-term management plan. Additionally, LADWP currently exercise its adjudicated extraction rights in three groundwater basins: San Fernando, Sylmar and Central.

The Owens Valley, which is located on the eastern slope of the Sierra Nevada Mountains, encompasses approximately 3,300 square miles of drainage area. Table IV.L-2 on page IV.L-5 shows the latest extractions by LADWP from Owens Valley. As shown therein, LADWP extracted 68,149 AF of groundwater in the 2008–2009 runoff year (April 1 through March 31). Owens Valley is not identified as an overdrafted basin in the Department of Water Resources (DWR) California's Groundwater Bulletin 118 Update 2003. Furthermore, Bulletin 118 Update 2003 does not project the Owens Valley to become overdrafted if present groundwater management conditions continue. In addition, in 1990, as part of the long-term groundwater management agreement, the City and Inyo County have prepared the "Green Book for the Long Term Groundwater Management Plan for the Owens Valley and Inyo County. This document contains plans and procedures to prevent overdraft conditions from groundwater pumping and to manage vegetation in the Owens Valley.

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[2] *Los Angeles Department of Water and Power, Water Supply Assessment—The Boyle Heights Mixed-Use Community Project, November 3, 2009.*

Table IV.L-2
LADWP Local Groundwater Basin Supply
(in acre-feet)

Year	Owens Valley	San Fernando	Sylmar	Central
2001–2002	73,349	66,823	1,240	8,639
2002–2003	82,281	78,045	3,662	9,811
2003–2004	87,726	72,235	2,634	15,907
2004–2005	85,820	46,815	1,509	14,870
2005–2006	57,412	35,428	1,853	13,395
2006–2007	58,621	70,837	4,032	14,416
2007–2008	60,337	50,009	2,996	10,754
2008–2009	68,149	53,023	868	11,817

Groundwater extractions for all basins, except Owens Valley groundwater basin, represent extractions during water year (October through September). Owens Valley groundwater extractions are reported from April to March.

Source: Los Angeles Department of Water and Power, 2009 and 2010.

The San Fernando Basin, which consists of 112,000 acres of land is the largest of four basins within the Upper Los Angeles River Area (ULARA), comprising 91.2 percent of the ULARA. LADWP has accumulated nearly 406,313 AF of stored water credit in the San Fernando Basin as of October 2008 (120,560 AF of stored water credits that are available to be pumped now and 285,753 AF that are held in reserve). This water can be withdrawn from the basin during normal and dry years or in an emergency, in addition to LADWP's approximately 87,000 AF annual entitlement in the basin. Sylmar Basin, located in the northern part of the ULARA, consists of 5,600 acres of land and comprises 4.6 percent of the ULARA. LADWP currently has an annual entitlement of 3,405 AF from the Sylmar Basin. In addition, LADWP has adjudicated rights to extract groundwater from the Central Basin. Annual entitlement to the Central Basin is 15,000 AF.

As shown in Table IV.L-2, from the 2008 to 2009 water year (October through September), LADWP extracted 53,023 AF from the San Fernando Basin, 868 AF from the Sylmar Basin, and 11,817 AF from the Central Basin. LADWP plans to continue production from its groundwater basins in the coming years to offset reductions in imported water supplies. Extraction from the basins will, however, be limited by water quality and overdraft protection. Both LADWP and DWR have programs in place to monitor wells to prevent overdrafting. LADWP's groundwater pumping practice is based on a "safe yield" operation. The "safe-yield" objective, over a period of years, is to extract an amount of groundwater equal to the native and imported water that recharges the basin.

(c) Metropolitan Water District of Southern California

MWD is a metropolitan water district created in 1928 by vote of the electorates of eleven Southern California cities under authority of the Metropolitan Water District Act. MWD is the largest water wholesaler for domestic and municipal uses in southern California. MWD is comprised of 26 member public agencies, including 14 cities, 11 municipal water districts, and one county water authority which collectively serve the residents and businesses of more than 300 cities and numerous unincorporated communities. All 26-member agencies have preferential rights to purchase water from MWD. As one of the 26 member agencies of MWD, LADWP purchases water from MWD to supplement LADWP water supplies from the LAA and local groundwater. As of June 30, 2006, LADWP had a preferential right to purchase 21.6 percent of MWD's total water supply.

LADWP has worked with MWD in the development of the MWD Water Supply Allocation Plan, which was adopted by the MWD Board on February 12, 2008, and is described in more detail below. During a water supply shortage, LADWP is allocated a calculated amount of MWD water based on an allocation formula provided in this plan. LADWP supported the adoption of this plan and intends to work within the plan to acquire its drought supplies from MWD in the future. As indicated in Table IV.L-1, in 2009, LADWP received approximately 354,789 AF of water from MWD. LADWP will continue to rely on MWD to meet its current and future supplemental water needs.

MWD imports a portion of its water supplies from Northern California through the State Water Project (SWP)'s California Aqueduct and from the Colorado River through MWD's own Colorado River Aqueduct. Summaries of MWD's individual supplies, along with the challenges facing each supply, are presented below. Additionally, described below are specific actions that MWD is taking to meet each of the challenges facing its water supplies.

(i) MWD Water Supply

The Colorado River

The Colorado River was MWD's original source of water after MWD's establishment in 1928. MWD has a legal entitlement to receive water from the Colorado River under a permanent service contract with the Secretary of the Interior (Section 5 of the federal Boulder Canyon Project Act). Water from the Colorado River or its tributaries is also available to other users in California as well as users in the states of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming, resulting in both competition and the need for cooperation among these holders of Colorado River entitlements. In addition, under a 1944 agreement, Mexico has an allotment of 1.5 million AF of Colorado River water

annually except in the event of extraordinary drought or serious accident to the delivery system in the United States when the water allotted to Mexico would be curtailed. However, Mexico can schedule delivery of an additional 200,000 AF of Colorado River water per year, in addition to its 1.5 million AF allotment, if water is available in excess of the requirements in the United States.[3]

The Colorado River Aqueduct, which is owned and operated by MWD, transports water from the Colorado River approximately 242 miles to its terminus at Lake Mathews in Riverside County. From there, MWD pumps the water into its feeder pipeline distribution system for delivery to its member agencies throughout Southern California. After deducting for conveyance losses and considering maintenance requirements, up to 1.2 million AF of water a year may be conveyed through the Colorado River Aqueduct to MWD's member agencies, subject to availability of Colorado River water for delivery to MWD.

California is apportioned the use of 4.4 million AF of water from the Colorado River each year plus one-half of any surplus that may be available for use collectively in Arizona, California and Nevada. In addition, California has historically been allowed to use Colorado River water apportioned to but not used by Arizona and Nevada when such supplies have been requested for use in California. Under the 1931 priority system that has formed the basis for the distribution of Colorado River water made available to California, MWD was allotted 550,000 AF per year under a fourth priority right and 662,000 AF per year under a fifth priority right. Palo Verde Irrigation District (PVID), the Yuma Project, Imperial Irrigation District (IID) and the Coachella Valley Water District (CVWD) are the agricultural entities holding the first three priorities to the use of no more than 3.85 million AF under the water delivery contracts.

Until 2003, MWD had been able to take full advantage of its fifth priority right as a result of the availability of surplus water and apportioned but unused water. However, Arizona and Nevada increased their water use from the Colorado River, leaving no unused apportionment available for California since 2002. In addition, a severe drought in the Colorado River Basin reduced storage in system reservoirs, such that MWD stopped taking surplus deliveries in 2003 in an effort to mitigate the effects of the drought. Prior to 2003, MWD could divert over 1.2 million AF in any year, but since that time MWD's net diversions of Colorado River water have been limited to a low of nearly 633,000 AF in 2006 and a high of approximately 905,000 AF in 2008. Average annual net deliveries for 2003 through 2008

[3] *The Metropolitan Water District of Southern California, Revenue Bond Official Statement dated January 15, 2009, Water Revenue Bonds for $200,000,000, 2008 Authorization, Series A, Appendix A, Metropolitan Water District of Southern California.*

were approximately 762,000 AF, with annual volumes dependent primarily on availability of unused higher priority agricultural water and increasing transfer of conserved water.

As described in detail in the Water Supply Assessment provided in Appendix M.1 of this Draft EIR, MWD has taken steps to augment its share of Colorado River water supplies by entering into agreements with other agencies that have rights to use such water. A summary of several of these agreements is provided below:

- In 1988, MWD entered into a water conservation agreement with IID for water conservation projects that currently conserve 105,000 AF of water per year. In 2008, the conserved water augmented the amount of water available to MWD by 89,000 AF.

- In 1992, MWD entered into an agreement with the Central Arizona Water Conservation District to create 80,909 AF of long-term storage credits that may be recovered by Central Arizona Water Conservation District for MWD. In 2007 and 2008, 16,804 AF and 28,442 AF were recovered, respectively. MWD anticipated recovery of as much as 30,000 AF in 2009. Water recovered by the Central Arizona Water Conservation District under the terms of this agreement allows this district to reduce its use of Colorado River water, resulting in Arizona having an unused apportionment. The Secretary of the Interior is making this unused apportionment available to MWD under its Colorado River water delivery contract.

- In August 2004, MWD entered into an agreement with the Palo Verde Irrigation District for a Land Management, Crop Rotation and Water Supply Program that provides up to 133,000 AF of water available to MWD in certain years. Fallowing of approximately 20,000 acres of land began on January 1, 2005. In 2005, 2006, 2007 and 2008, approximately 108,700 AF, 105,500 AF, 72,300 AF and 94,300 AF of water, respectively, were saved and made available to MWD. The fallowing program was projected to save 132,500 AF of water in 2009. In March 2009, MWD and the Palo Verde Irrigation District entered into a one-year supplemental fallowing program that provides for the fallowing of additional acreage, with savings projected to be as much as another 61,200 AF.

- In May 2008, MWD provided $28.7 million to join the Central Arizona Water Conservation District and Southern Nevada Water Authority in funding a new reservoir near Drop 2 of the All-American Canal in Imperial County which could save up to 70,000 AF of water per year by capturing and storing water that otherwise would not be diverted for irrigation. The reservoir is expected to be completed in late 2010. In return for its funding, MWD received 100,000 AF of water stored in Lake Mead, with the ability to deliver up to 34,000 AF of water in any one year. The new reservoir will provide additional water supplies as well as add to the flexibility of Colorado River operations.

Management of Colorado River Supply

With Arizona's and Nevada's increasing use of their respective apportionments and the uncertainty of continued Colorado River surpluses, in 1997 the Colorado River Board of California, in consultation with MWD, LADWP, and other water agencies embarked on the development of a plan for reducing California's use of Colorado River water to its basic apportionment of 4.4 million AF when use of that basic allotment is necessary (California Plan). In 1999, the IID, Coachella Valley Water District, MWD, and the State agreed to a set of key terms aimed at managing California's Colorado River supply. These key terms were incorporated into the Colorado River Boards May 2000 California Plan. Agreements and guidelines that continue to affect the management of water supplies from the Colorado River are summarized below.

Quantification Settlement Agreement: Many of the core elements of the California Plan are being put into effect under the October 2003 Quantification Settlement Agreement (QSA) executed by the IID, Coachella Valley Water District, and MWD. The QSA establishes Colorado River water use limits for the Imperial Irrigation District, Coachella Valley Water District, and MWD; provides for specific acquisitions of conserved water and water supply arrangements for up to 75 years; and restores the opportunity for MWD to receive any special surplus water under the Interim Surplus Guidelines (described below). The QSA also allows MWD to enter into other cooperative Colorado River supply programs. Specific programs undertaken under the QSA include lining portions of the All-American and Coachella Canals, which are projected to conserve 96,000 AF annually. With full implementation of the programs identified in the QSA, MWD expects to be able to annually divert 850,000 AFY of Colorado River water plus any unused agricultural water that may be available. This is further augmented by the previously described Land Management, Crop Rotation and Water Supply Program executed between MWD and Palo Verde Irrigation District, which provides up to 129,800 AF of water per year.

Sale of Water by the Imperial Irrigation District to San Diego County Water Authority: On April 29, 1998, the San Diego County Water Authority and IID executed an agreement for SDCWA's purchase from IID of Colorado River water delivery to IID. An amended Transfer Agreement, executed as one of the QSA agreements, set the maximum transfer amount at 205,000 AF in 2021, with the transfer gradually increasing up to that amount over an approximately 20 year period, stabilizing at 200,000 AF per year beginning in 2023. Under the Transfer Agreement, conserved water from the IID is delivered to the San Diego County Water Authority through existing facilities owned by MWD. MWD and San Diego County Water Authority entered into an exchange contract that provides for conserved Colorado River water acquired by the San Diego County Water Authority from IID and water conserved from lining the All-American and Coachella Canals to be made available to MWD for diversion at Lake Havasu. By exchange from the sources of water available to

MWD, an equal volume of water is delivered to San Diego County Water Authority through MWD's distribution system.

Interim Surplus Guidelines: In January 2001, the Secretary of the Interior adopted the Interim Surplus Guidelines for use through 2016 in determining if there is surplus available for use in California, Arizona, and Nevada. The purpose of these guidelines is to provide a greater degree of predictability with respect to the availability and quantity of surplus water through 2016. The guidelines were later extended through 2026 and contain a series of benchmarks for reductions in agricultural use of Colorado River water within California by set dates.

Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead: In November, 2007, the Bureau of Reclamation issued a Final Environmental Impact Statement regarding new federal guidelines concerning the operation of the Colorado River system reservoirs. These guidelines provide water release criteria from Lake Powell and water storage and water release criteria from Lake Mead during shortage and surplus conditions in the Lower Basin; provide a mechanism for the storage and delivery of conserved system and non-system water in Lake Mead; and extend the Interim Surplus Guidelines through 2026.

Intentionally Created Surplus Program: To address the receding lake levels in Lake Mead, MWD and the Bureau of Reclamation executed an agreement on May 26, 2006, to create the Intentionally Created Surplus program that allowed MWD to leave conserved water in Lake Mead that MWD would otherwise have used in 2006 and 2007. Only "intentionally-created surplus" water (water that has been conserved through extraordinary conservation measures, such as land fallowing) was eligible for storage in Lake Mead under this program. The Secretary of the Interior will deliver intentionally created surplus water to MWD in accordance with the terms of a December 31, 2007, delivery agreement between the United States ("US") and MWD.

Challenges to Colorado River Supply

Challenges facing MWD's Colorado River supply include risk of continued drought in the Colorado River Basin, pending litigation, including litigation of the QSA, and environmental considerations. Specifically, the Colorado River Basin has experienced below-normal runoff in recent years. In 2009, Lake Mead was at its lowest level in more than 40 years.[4]

[4] *U.S. Department of Interior, Bureau of Reclamation, Lake Mead at Hoover Dam Elevation, www.usbr.gov/lc/region/g4000/hourly/mead-elv.html; accessed June 21, 2010.*

Litigation has been filed that also presents challenges regarding water supplies associated with the Colorado River. For example, on January 28, 2010, MWD was served with a complaint filed by the County of Imperial and the Imperial County Air Pollution Control District alleging that execution and implementation of the QSA violates the National Environmental Policy Act and federal Clean Air Act.

In addition, on November 5, 2003, IID filed a validation action in Imperial County Superior Court seeking judicial determination that 13 agreements associated with the IID/SDCWA water transfer and the QSA are valid, legal and binding. Other lawsuits also were filed challenging the execution, approval and subsequent implementation of the QSA on various grounds. MWD filed an answer in IID's validation proceeding and has been named as a defendant/respondent/cross defendant in certain cases as pertaining to the QSA and its related agreements. On December 10, 2009, the QSA trial judge issued a tentative ruling which held that the State's commitment to be responsible for any costs exceeding $163 million toward certain mitigation and restoration costs associated with implementation of the QSA and related agreements was unconditional in nature and, as such, violated the States' debt limitation under the California Constitution. Furthermore, the tentative ruling held that eleven other agreements, including the QSA, also were invalid. A final judgment was issued on February 11, 2010, which confirmed the tentative ruling and held that all other claims raised by the parties, including CEQA claims related to the QSA Programmatic EIR and the IID Transfer Project EIR, are moot. MWD, Coachella Valley Water District and San Diego County Water Authority have filed appeals of the court's decision, which will stay the ruling pending outcome of the appeal. If the ruling stands, it could delay the implementation of programs authorized under the QSA (described below).

Also, the Navajo Nation has filed litigation against the Department of the Interior (DOI), specifically the Bureau of Reclamation and the Bureau of Indian Affairs, alleging that the Bureau of Reclamation has failed to determine the extent and quantity of the water rights of the Navajo Nation in the Colorado River and that the Bureau of Indian Affairs has failed to otherwise protect the interest of the Navajo Nation. The complaint challenges the adequacy of the environmental review for the Interim Surplus Guidelines and seeks to prohibit the DOI from allocating any surplus water until a determination of the rights of the Navajo Nation is made. Negotiations are continuing. This litigation has not delayed implementation of the QSA. The adverse impact on MWD or its Colorado River supplies of the litigation described above cannot be adequately determined at this time.

Further, federal and state environmental laws protecting fish species and other wildlife species have the potential to affect Colorado River operations. A number of species that are either endangered or threatened are present in the Lower Colorado River. However, the Lower Colorado River Multi-Species Conservation Program (MSCP) allows MWD to obtain federal and state permits for any incidental take of protected species

resulting from current and future water and power operations of its Colorado River facilities and to minimize any uncertainty from additional listings of endangered species. The MSCP also covers operations of federal dams and power plants on the river that delivers water and hydroelectric power for use by MWD and other agencies.

Lastly, in December 2007, the Grand Canyon Trust filed litigation against the Bureau of Reclamation alleging that the operation of the Glen Canyon Dam on the Colorado River does not comply with environmental regulations. On May 27, 2009, the court ordered the Bureau of Reclamation to reconsider how the dam flows may harm the endangered fish and develop a new operating plan. Other environmental concerns that have been raised include the discovery of quagga mussels in Lake Mead. However, MWD has been implementing control strategies for mussels in MWD's lakes and reservoirs.

State Water Project

The State Water Project (SWP) is a water storage and delivery system of reservoirs, aqueducts, power plants, and pumping plants. The main purpose of the SWP is to divert and store surplus water during wet periods and distribute it to areas throughout the state. Other purposes of the SWP include flood control, power generation, recreation, fish and wildlife protection, and water quality management in the Sacramento-San Joaquin River Delta (Delta).

The SWP is owned by the State of California and operated by the DWR. SWP transports Feather River water stored in and released from Orville Dam and unregulated flows diverted directly from the San Francisco Bay/Sacramento-San Joaquin River Delta (Delta) south via the California Aqueduct to four delivery points near the northern and eastern boundaries of MWD's service area. The total length of the California Aqueduct is approximately 444 miles.

MWD signed a contract (the State Water Contract) with the DWR in 1960. MWD is one of the 29 agencies that have long-term contracts for water service from the DWR, and is the largest agency in terms of the number of people it serves (almost 19 million), the share of the SWP that has contracted to receive (approximately 46 percent), and the percentage of total annual payments made to the DWR by agencies with State water contracts. MWD's State Water Contract is set to expire in 2035 and MWD presently intends to exercise an option to continue service to at least 2052.[5]

[5] *The Metropolitan Water District of Southern California, Revenue Bond Official Statement dated January 15, 2009, Appendix A, Metropolitan Water District of Southern California updated to reflect Remarketing Statement, Water Revenue Refunding Bonds for $104,185,000, 2009 Series A-1 dated February 24, 2010.*

The availability of SWP water supply is analyzed by DWR in terms of Table A and Article 21 water deliveries. Table A water deliveries represent the schedule of the maximum amount of water that water contractors to the DWR may receive annually from the SWP. There are 29 water contractors who have signed long term contracts with the DWR. Table A deliveries are not guarantees of annual delivery amounts but are used to allocate individual contractors' portion of the delivery amounts available. Article 21 deliveries refer to Table A deliveries with additional water supplies received only under the following conditions: the water is available only if it does not interfere with Table A allocations and SWP operations; the water is available only when there is excess water in the Delta; the water is available only when conveyance capacity is not being used for SWP purposes or scheduled SWP deliveries; and the water must be stored by the contractor and not in the SWP system.[6]

The State Water Contract, under a 100 percent allocation, provides MWD 1,911,500 AF of water. Water received from the SWP by MWD from 2002 through 2009, including water from the water transfer, groundwater banking, and exchange programs varied from a low of 908,000 AF to a high of 1,800,000 AF. Below-normal precipitation in the northern Sierra Mountains in the winter of 2007 and spring of 2008, the season when most of the annual precipitation occurs, ended with record dry conditions during March and April of 2008. MWD's allocation from the SWP for calendar year 2008 was 35 percent of its contracted amount, or 669,000 AF. For 2009, MWD's approved allocation from the SWP was 40 percent or 765,000 AF.[7,8] For 2010, MWD's allocation would be 15 percent, or 286,725 AF.[9]

Challenges to SWP Supply

The listing of several fish species as threatened or endangered under the federal and/or California Endangered Species Act have impacted SWP operations and limited the flexibility of the SWP. The diversion of water by the SWP for storage and distribution

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[6] *State of California, The Resources Agency, Department of Water Resources, The State Water Project Delivery Reliability Report 2007.*

[7] *Department of Water Resources, 2009 State Water Project Allocation Increase, March 2009.*

[8] *Late winter storms in 2008–2009 increased snowpack to near 90 percent of normal, but water storage in the state's major reservoirs and runoff projections remain well below average. The precipitation allowed a 40 percent allocation of its contracted allowed SWP Table A deliveries. Department of Water Resources, 2009 State Water Project Allocation Increase to 40 Percent, May, 20, 2009. www.water.ca.gov/swpao/docs/notices/09-07.pdf; accessed August 3, 2010.*

[9] *Department of Water Resources, 2010 State Water Project Initial Allocation, November 2009; www.water.ca.gov/swpao/docs/notices/09-09.pdf; accessed August 3, 2010.*

throughout the State can further affect these endangered species. Currently, five species (the winter-run and spring run Chinook salmon, Delta smelt, North American green sturgeon and Central Valley steelhead) are listed under the Endangered Species Act. In addition, on June 25, 2009, the California Fish and Game Commission declared the longfin smelt a threatened species under the California Endangered Species Act. The United States Fish and Wildlife Service (USFWS) announced on April 9, 2009, that the Bay-Delta population of longfin smelt does not qualify as a distinct population segment and cannot be listed under the Federal Endangered Species Act.[10]

In 2004 and 2005, the USFWS and National Marine Fisheries Service (NMFS) issued biological opinions and incidental take statements that govern operations of the SWP and Central Valley Project with respect to the Delta smelt, the winter-run and spring-run Chinook salmon and the Central Valley steelhead. In July 2006, the Bureau of Reclamation reinitiated consultation with the USFWS and National Marine Fisheries Service with respect to the 2004 and 2005 biological opinions (with the addition of the North American green sturgeon, which was listed in April 2006) following the filing of legal challenges to those biological opinions and incidental take statements. In a separate action on May 21, 2009, the National Marine Fisheries Service proposed to adopt a rule under the Federal Endangered Species Act, applying Federal Endangered Species Act "take" prohibitions to the North American green sturgeon. Critical habitat has also been designated for each of the currently listed species including the North American green sturgeon. The National Marine Fisheries Service issued critical habitat designation for the North American green sturgeon on October 9, 2009. The habitat designation for the sturgeon includes the lower Feather River, which could have an impact on SWP operations.

Litigation filed by several environmental interest groups (*Natural Resources Defense Council (NRDC) v. Kempthorne*; and *Pacific Coast Federation of Fishermen's Association v. Gutierrez*) in the United States District Court for the Eastern District of California alleged that the 2004 and 2005 biological opinions and incidental take statements inadequately analyzed impacts on listed species under the Federal Endangered Species Act. On May 25, 2007, Federal District Judge Wanger issued a decision on summary judgment in *NRDC v. Kempthorne*, finding that USFWS biological opinion for Delta smelt to be invalid. On December 14, 2007, Judge Wanger issued his Interim Remedial Order and Findings of Fact and Conclusions of Law requiring that the State Water Project and Central Valley Project operate according to certain specified criteria until a new biological opinion for the

[10] *The Metropolitan Water District of Southern California, Revenue Bond Official Statement dated January 15, 2009, Appendix A, Metropolitan Water District of Southern California updated to reflect Remarketing Statement, Water Revenue Refunding Bonds for $104,185,000, 2009 Series A-1 dated February 24, 2010.*

Delta smelt is issued. Under the Interim Remedial Order, State Water Project operations were constrained in the winter and spring of 2007–2008 by prevailing conditions and the status of the Delta smelt. Export restrictions resulting from the Interim Remedial Order during the winter and spring of 2007–2008 reduced State Water Project deliveries to MWD by approximately 250,000 AF, as water that otherwise could have been diverted for delivery through the California Aqueduct bypassed the State Water Project pumps.[11]

The USFWS released a biological opinion on the impacts of the State Water Project and Central Valley Project on Delta smelt on December 15, 2008. Based on the Water Allocation Analysis released by DWR on January 25, 2010, which incorporated the biological opinion's effects on State Water Project operations, export restrictions could reduce deliveries to MWD by 200,000 AF to 450,000 AF for 2010 under median hydrologic conditions. MWD and several other agencies each filed separate lawsuits challenging the biological opinion. On May 29, 2009, the court ruled that the plaintiffs were likely to succeed on their claim that the USFWS failed to comply with the National Environmental Policy Act in its preparation of the Delta smelt biological opinion. The court issued a preliminary injunction requiring the USFWS to take into consideration various environmental impacts of reduced water exports to the federal Central Valley Project service area and provide more detailed explanations when the USFWS imposed certain biological opinion restrictions on exports. These requirements were effective until June 30, 2009. The spring 2009 export restrictions under the Delta smelt biological opinion expired on June 30, 2009.[12]

On June 4, 2009, the National Marine Fisheries Service released its new biological opinion for salmonid species. The salmonid species biological opinion contained additional restrictions on State Water Project and Central Valley Project operations. The National Marine Fisheries Service calculated that these restrictions would reduce the amount of water the State Water Project and Central Valley Project combined would be able to export from the Bay-Delta by 5 to 7 percent. DWR estimated a 10 percent average water loss, expected to begin in 2010, under this biological opinion. The impact on State Water Project deliveries attributable to the Delta smelt and salmonid species biological opinions combined is estimated to be 1,000,000 AF in an average year, reducing State Water Project deliveries from approximately 3.3 million AF to approximately 2.3 million AF. Six lawsuits were filed challenging the 2009 salmon biological opinion. After a hearing on February 2, 2010, the court issued a temporary restraining order enjoining implementation of the restriction in the salmon biological opinion that limited reverse flows of the Old and

[11] *Ibid.*

[12] *Ibid.*

Middle Rivers depending upon how many salmon were entrained at the Central Valley Project and State Water Project pumps. This temporary restraining order expired February 19, 2010.[13]

DWR has altered the operations of the SWP to accommodate species of fish listed under the ESAs. These changes in project operations have adversely affected SWP deliveries. Operational constraints likely will continue until a long-term solution to the problem in the Bay-Delta is identified and implemented.

Other environmental groups sued DWR on October 4, 2006 in the Superior Court of the State of California for Alameda County alleging that the DWR was "taking" listed species without authorization under the California Endangered Species Act (*Watershed Enforcers v. California Department of Water Resources*).[14] The litigation requests that the DWR be mandated to either cease operation of the SWP pumps in a manner that results in such "taking" of listed species or obtain authorization for such "taking" under the California Endangered Species Act. On April 18, 2007, the court determined that the DWR was illegally "taking" listed fish through operation of the SWP facilities and ordered the Department to "cease and desist from further operation" within 60 days until it obtained "take" authorization. DWR appealed on May 7, 2007, which stays the order pending the outcome of the appeal. The Court of Appeal stayed the appeal until July 31, 2009. This stay was intended to allow time for the DWR to obtain incidental take authorization under the California Endangered Species Act before the Court of Appeal decided the appeal. Based on having received Consistency Determinations that authorized incidental take under the California Endangered Species Act, appellants Department of Water Resources and State Water Contractors dismissed their appeals. A motion to dismiss the remaining appeals on grounds that the controversy is moot is also pending.

Other issues, such as the recent decline of some fisheries in the Delta and surrounding regions and certain operational actions in the Delta, may significantly reduce MWD's water supply from the Delta. SWP operational requirements may be further modified under new biological opinions for listed species under the Federal Endangered Species Act or by the CDFG's issuance of incidental take authorizations under the California Endangered Species Act. MWD cannot predict the ultimate outcome of any of the litigation or regulatory processes described above but believes they could have a

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[13] *Ibid.*

[14] *According to Section 9 of the Endangered Species Act, to "take" a species means to "harass, harm, pursue, hunt, shot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct."*

materially adverse impact on the operation of the SWP pumps, MWD's SWP supplies, and MWD's water reserves.

In addition, four SWP contractors filed ligation against DWR on July 17, 2008 alleging that since they are located in the "area of origin" of SWP water, they are entitled to receive their entire contract amount before any water is delivered to contractors south of the Delta. MWD and twelve other SWP contractors located south of the Delta filed motions to intervene in this litigation, which were granted on February 25, 2009. Refer to Appendix A of the Water Supply Assessment for a more detailed description of this and other litigation with the potential to affect operations within the SWP.

(ii) Programs Addressing Challenges within the Delta

To address the environmental concerns within the Delta, several programs have been proposed and/or recently completed. These programs include the CALFED Bay-Delta Program, the Delta Vision Process, and the Bay-Delta Conservation Plan.

The CALFED Bay-Delta Program is a collaboration among 23 state and federal agencies that came together with a mission to improve California's water supply and the ecological health of the Delta. The CALFED Bay-Delta Program includes various program plans on an annual basis which address four key Delta issues: water quality, levee system, water supply, and ecosystem restoration. Implementation of the CALFED Bay-Delta Program has resulted in an investment of $3 billion on a variety of projects and programs addressing the Bay-Delta's water supply, water quality, ecosystem, and levee stability problems.

To guide future development of the CALFED Bay-Delta Program and identify a strategy for managing the Delta as a sustainable resource, in September 2006, former Governor Schwarzenegger established by Executive Order the Delta Vision Process. The Delta Vision Process concluded at the end of 2008, with a suite of strategic recommendations for long-term, sustainable management of the Sacramento–San Joaquin Delta. The Delta Vision process built on work done through the CALFED Bay-Delta Program, but specifically broadened the focus of past efforts within the Delta to recommend actions that will address the full array of natural resource, infrastructure, land use and governance issues necessary to achieve a sustainable Delta.[15] The Delta Vision Process entailed the completion of three work products. The first work product was the Delta Vision Report, which was completed in January 2008 and includes long-term strategic solutions

[15] *Delta Vision, About Delta Vision, http://deltavision.ca.gov/AboutDeltaVision.shtml; accessed August 3, 2010.*

for the conflicts in the Delta as recommended by the Delta Vision task force established by former Governor Schwarzenegger. The second work product, the Delta Strategic Plan, was completed in October 2008 and assessed alternative implementing measures and management practices to implement the Delta Vision Report recommendations. Lastly, specific recommendations of the Delta Vision Committee, chaired by the State Secretary for Resources, were set forth as part of the Delta Vision Committee Implementation Report in December 2008. The Report included a list of recommended near-term actions and timelines necessary to achieve Delta sustainability.

Furthermore, the Bay-Delta Conservation Plan (BDCP) is being developed under the aegis of the California Resources Agency to provide for the recovery of endangered and sensitive species and their habitats in the Delta in a way that will also provide for the protection and restoration of water supplies. Completion of the BCDP is just one of the recommendations from the Delta Vision Committee discussed above. The BDCP is being developed under the Federal Endangered Species Act and the California Natural Community Conservation Planning Act (NCCPA). When completed, the BDCP would provide the basis for the issuance of endangered species permits for the operation of the state and federal water projects. The plan would be implemented over the next 50 years.[16]

The BDCP will identify and implement conservation strategies to improve the overall ecological health of the Delta; identify and implement ecologically friendly ways to move fresh water through and/or around the Delta; address toxic pollutants, invasive species, and impairments to water quality; and provide a framework to implement the plan over time. A draft Environmental Impact Report/Environmental Impact Statement evaluating the environmental impacts of the BDCP is currently being prepared and is expected to be released for public review at the end of 2011.[17] MWD is one of the parties drafting the BDCP to provide State and Federal Endangered Species Act coverage for its SWP operations.

At the request of Congress and the Departments of the Interior and Commerce, a committee of independent experts was recently formed in December 2009 to review the scientific basis of actions that have been and could be taken to simultaneously achieve both an environmentally sustainable Bay-Delta and a reliable water supply. In order to balance the need to inform near-term decisions with the need for an integrated view of water and environmental management challenges over the longer-term, the committee will

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[16] *Bay Delta Conservation Plan, About BDCP, http://baydeltaconservationplan.com/; accessed June 9, 2011.*

[17] *Ibid.*

undertake two main projects over a term of two years resulting in two reports.[18] The first project entails completion of a report in 2010, which will focus on scientific questions, assumptions, and conclusions underlying water-management alternatives in the USFWS Biological Opinion on Coordinated Operations of the Central Valley Project and SWP (December 15, 2008) and the National Marine Fisheries Service's (NMFS) Biological Opinion on the Long-Term Central Valley Project and State Water Project Operations Criteria and Plan (June 4, 2009). Additionally, in 2011, the committee will issue a second report on how to most effectively incorporate science and adaptive management concepts into holistic programs for management and restoration of the Bay-Delta.

(iii) Additional MWD Actions to Address Supply

Water Transfer, Storage and Exchange Programs

To improve water supply reliability for the entire southern California region, MWD has also been pursuing voluntary water transfer and exchange programs with State, federal, public and private water districts and individuals. Programs include the Arvin-Edison/Metropolitan Water Management Program; the Semitropic/MWD Groundwater Storage and Exchange Program; the California Aqueduct Dry-Year Transfer Program; purchase, storage and exchange programs in the Sacramento and San Joaquin Valleys; and MWD/Coachella Desert Water Agency Exchange and Advance Delivery Agreement, and other agreements. These programs are described further in the Water Supply Assessment provided in Appendix M.1 of this Draft EIR.

The amalgamation of the transfer and exchange programs has increased MWD's storage capacity to 5.62 million AF. Approximately 614,000 AF of stored water is emergency storage that is reserved for use in the event of supply interruptions from earthquakes or similar emergencies, as well as extended drought.

MWD's ability to replenish water storage, both in the local groundwater basins and in surface storage and banking programs has been limited by Bay-Delta pumping restrictions under the interim remedial order in the NRDC case discussed above. MWD replenishes its storage accounts when imported supplies exceed demands. Effective storage management is dependent on having sufficient years of excess supplies to store water so that it can be used during times of shortage. Historically, excess supplies have been available in about seven of every ten years. MWD forecasts that, with anticipated supply reductions from the SWP due to pumping restrictions, it will need to draw down on storage

[18] *The National Academies, www8.nationalacademies.org/cp/projectview.aspx?key=49175; accessed August 3, 2010.*

in about seven of ten years and will be able to replenish storage in about three years out of ten. This reduction in available supplies extends the time required for storage to recover from drawdowns and could require MWD to implement its water supply allocation plan during extended dry periods. Over the past two years, MWD has drawn down approximately half of its stored water to meet demands. At its highest in July 2006, MWD's storage was 2.74 million AF. As of January 1, 2010, MWD had approximately 1.65 million AF of water in storage.[19] Groundwater storage and other storage programs may have physical or contractual conditions that affect withdrawal capacity or limit the maximum amount that may be withdrawn each year.

MWD Plans and Programs

As discussed in the Regulatory Framework Section below, MWD has established several plans and programs to address water supplies. These plans include the Urban Water Management Plan, Integrated Resources Plan, the Water Surplus and Drought Management Plan, the Water Supply Allocation Plan, and the Five Year Supply Plan.

(d) Drought Conditions

In the past years, drought conditions have led to water supply shortages all across the State. Water years 2007-2009 represent the 12th driest three-year period in the State's hydrologic record.[20] Water year 2009 was notable in that January, normally the single wettest month, was extremely dry. As indicated in Table IV.L-3 on page IV.L-21, from 2007 to 2009, the City experienced below average precipitation.

In response to the drought conditions as well as the Delta Smelt issue for the SWP, former Governor Schwarzenegger declared a State of Emergency—Water Shortage on February 27, 2009. DWR's drought status update issued on January 29, 2010, stated that water year 2010 started off with below normal conditions in the fall season moving California into its fourth year of drought. However, on March 30, 2011, Governor Brown

[19] *The Metropolitan Water District of Southern California, Revenue Bond Official Statement dated January 15, 2009, Appendix A, Metropolitan Water District of Southern California updated to reflect Remarketing Statement, Water Revenue Refunding Bonds for $104,185,000, 2009 Series A-1 dated February 24, 2010.*

[20] *Agencies such as the California Department of Water Resources report hydraulic data on a water year basis. A water year extends from October 1 through September 30.*

Table IV.L-3
City of Los Angeles Precipitation

2007	2008	2009	Average
3.21 inches	10.29 inches	7.98 inches	13.00 inches

Source: California Department of Water Resources, California Drought—An Update, December 2009; www.water.ca.gov/drought/docs/dec09_drought_report.pdf.

proclaimed an end to California's drought, thereby rescinding the State of Emergency issued on February 27, 2009.[21]

(e) Global Warming and Climate Change

Climate change has also been a critical factor for California's water supply. Potential impacts of climate change on California's water resources include increases in temperature that could result in drought, stressed cold-water species in rivers, increased demand for irrigation; changes in precipitation patterns that could lead to floods, lowered groundwater table, a reduction in snowpack, decreased hydroelectric power, and changes in sea levels that could increase pressure on Delta levees.[22] The impact of climate change on California's water supply was examined in DWR's July 2006 report entitled Progress on Incorporating Climate Change into Management of California's Water Resources. This report examined the potential impacts of selected climate change scenarios on operations of the SWP and Central Valley Project, Delta water quality, flood management and evapotranspiration. The report concluded that climate change may have a significant effect on California's future water resources and demand.

While climate change is expected to continue through at least the end of this century, the exact magnitude and nature of future changes are uncertain. This uncertainty serves to complicate the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood (DWR report at pg. 2-54). However, the 2007 State Water Project Delivery Reliability

[21] *Office of Governor Jerry Brown, Governor Brown Ends State's Drought Status, Urges Californians to Continue to Conserve, http://gov.ca.gov/news.php?id=16959, accessed June 1, 2011.*

[22] *California Department of Water Resources, Managing an Uncertain Future, October 2008.*

Report prepared by DWR indicates that depending on the climate change conditions, average yearly SWP Table A deliveries in 2027 would be reduced by 31 to 34 percent.[23]

The effects and potential future effects of climate change are part of the uncertainties water managers face as they plan for the future. The draft California Water Plan 2009 prepared by DWR promotes ways to develop a common approach for addressing uncertainty and risk in the State's future water supplies. The new approach incorporates consideration of uncertainty, risk, and sustainability into planning for the future. Additionally, the DWR's report, the Climate Change Adaption Strategies for California's Water, prepared in October of 2008, identified 10 climate change adaption strategies for California's water as follows: (1) Provide sustainable funding for Statewide and Integrated Regional Water Management; (2) Fully develop the potential of integrated regional water management; (3) Aggressively increase water use efficiency; (4) Practice and promote integrated flood management; (5) Enhance and sustain ecosystems; (6) Expand water storage and conjunctive management of surface and groundwater resources; (7) Fix Delta water supply, quality, and ecosystem conditions; (8) Preserve, upgrade, and increase monitoring, data analysis, and management; (9) Plan for and adapt to sea level rise; and (10) Identify and fund focused climate change impacts and adaption research and analysis.

MWD also recognizes that climate change will require water suppliers to develop new, alternative water supplies and to focus on water use efficiency. In March 2002, MWD's Board of Directors adopted climate change policy principles that relate to water resources. These principles are reflected in MWD's water supply planning efforts, including the Integrated Resources Plan (IRP). Further, in response to climate change and uncertainty, MWD's 2005 Regional UWMP incorporated three basic elements to promote adaptability and flexibility, important in addressing impacts of climate change: conservation, groundwater recharge, and water recycling.

More recently, MWD approved criteria to further explain its position on the conveyance options that are currently being discussed to remedy the Delta, which include addressing projected sea level rise and change in inflows due to climate change. MWD's criteria provide that, "whatever option is chosen, it should provide water supply reliability, improve export water quality, allow flexible pumping operations in a dynamic fishery

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[23] *Table A water deliveries represent the schedule of the maximum amount of water that water contractors to the DWR may receive annually from the SWP. There are 29 water contractors who have signed long term contracts with the DWR for a total of 4.173 million AF per year. Table A deliveries are not guarantees of annual delivery amounts but are used to allocate individual contractors' portion of the delivery amounts available.*

environment, enhance the Delta ecosystem, reduce seismic risks, and reduce climate change risks." (Report for Metropolitan Water District of Southern California Board Meeting September 11, 2007 Agenda Item 8-4, emphasis added.) MWD has demonstrated a commitment to addressing climate change by evaluating the vulnerability of its water systems to global warming impacts and has developed appropriate response strategies and management tools that account for the impacts of climate change on future water supplies. For further discussion on the effects of global climate change, please refer to Section IV.B, Air Quality, of this Draft EIR.

(f) Water Conservation and Recycling

Water conservation and recycling will play an increasing role in meeting future water demands. LADWP has implemented water conservation and recycling programs with efforts underway to further promote and increase the level of these programs. LADWP is committed to supplying a higher percentage of the City's water demand through water conservation and recycling. As discussed further below, the Mayor and LADWP has prepared Securing L.A.'s Water Supply, which serves as a template for creating sustainable sources of water for the future of the City to reduce dependence on imported supplies. This plan is an aggressive multi-pronged approach that includes: investments in state-of-the-art technology; a combination of rebates and incentives; the installation of smart sprinklers, efficient washers and urinals; and long-term measures such as expansion of water recycling and investment in cleaning up the local groundwater supply. The premise of the plan is for the City to meet all new demand for water due to projected population growth through a combination of water conservation and water recycling. As discussed in further detail below, water demands have been reduced to 1991 conditions, when the City first implemented water rationing and associated financial penalties for overuse of water. As such, overall water usage was reduced by 14.5 percent in June 2009, 17.2 percent in July 2009, 22.6 percent in August 2009, and 18.5 percent in September 2009.

(2) Water Demand

LADWP's 2005 UWMP provides water supply and demand projections in five-year increments to 2030, based on projected population estimates provided by the Southern California Association of Governments (SCAG). Table IV.L-4 on page IV.L-24 shows the projected water demand from the year 2010 through 2030 for the City of Los Angeles. As shown in Table IV.L-4, in 2030 during average year hydrological conditions, the City's water demand is forecasted to be approximately 776,000 acre-feet per year (AFY). Utilizing the current demand per capita provides a conservative estimate of projected future water demand to ensure that water supplies are available to meet projected demands. The

Table IV.L-4
City of Los Angeles Water Demand Projections Based on Hydrological Conditions
(thousand AFY)

Hydrological Conditions	Year				
	2010	**2015**	**2020**	**2025**	**2030**
Average Year	683	705	731	755	776
Single-Dry Year	717	739	766	792	813
	2006	**2007**	**2008**	**2009**	**2010**
Multi-Dry Year (2006–2010)	698.7	702.2	706.6	711	717
	2011	**2012**	**2013**	**2014**	**2015**
Multi-Dry Year (2011–2015)	721.4	725.8	730.2	734.6	739
	2016	**2017**	**2018**	**2019**	**2020**
Multi-Dry Year (2016–2020)	744.4	749.8	755.2	760.6	766
	2021	**2022**	**2023**	**2024**	**2025**
Multi-Dry Year (2021–2025)	771.2	776.4	781.6	786.8	792
	2026	**2027**	**2028**	**2029**	**2030**
Multi-Dry Year (2025–2030)	796.2	800.4	804.6	808.8	813

Source: Los Angeles Department of Water and Power, 2005 Urban Water Management Plan.

2005 UWMP anticipates adequate water supplies would be available to the service areas under normal, single-dry, and multi-dry year conditions through 2030.[24]

Existing buildings on the project site provide approximately 1,187 residential units and approximately 9,969 square feet of leasing office/computer lab space for the residential buildings. In addition, the project site includes approximately 575,000 square feet of

[24] *Los Angeles Department of Water and Power, 2005 Urban Water Management Plan (UWMP). It should be noted that the 2010 UWMP is LADWP's most recent UWMP. However, the 2005 UWMP serves as the basis for the determination in the project's water supply assessment which was adopted by the LADWP Board of Water and Power Commissioners on November 3, 2009. Therefore, this section presents information from the 2005 UWMP. As an update to the 2005 UWMP, the 2010 UWMP accounts for the projections in the 2005 UWMP*

parking within surface lots and structures, and approximately 1,634,807 square feet of landscaped park areas/open space. As indicated in Table IV.L-5 on page IV.L-26, based on use of LADWP water use rates, these existing uses on the project site result in an existing water demand of approximately 300,500 gallons per day (gpd) or 337 AFY.

In addition, as discussed in the Water System Study prepared by Stantec Consulting, Inc., a parallel analysis of the existing project's LADWP billing records for 2006, 2007, and 2008 indicate that the current average day demand for the project site is 393,945 gallons per day (gpd), or 274 gallons per minute (gpm). This analysis suggests that actual domestic water consumption is 31 percent higher than what is estimated in Table IV.L-5 on page IV.L-26. The difference in the existing water use relative to the water use calculated using LADWP factors is likely attributable to a higher percentage of irrigated surfaces, irrigation techniques, leakage of the aging water pipes, antiquated toilets and faucets which use more water, and higher than average unit occupancy rates as evidenced by the Census data for the project site (see Section IV.I.3., Population, of this Draft EIR). Thus, to provide a conservative analysis of project impacts, the lower water use number set forth in the Water Supply Assessment has been used as this number is provided as a credit against future demand to determine the net increase in water demand associated with the project.

(3) Water Infrastructure

(a) Regional Water Distribution

The MWD owns and operates a large water transmission main known as the Palos Verdes Feeder. This transmission main runs north and south of the project site and is part of MWD's regional delivery system to provide a wholesale water supply to the southern California area. As a transmission main, this water line does not have direct connections to existing homes and structures in the project area.

In addition, MWD's regional transmission main traverses the site. In September 1938, Miriam Hostetter and Helen Griffith as executors of the estate of D. Herbert Hostetter, granted to the Metropolitan Water District ("MWD") a permanent and exclusive easement and right of way over a north south strip of land in the western area of the Project site (the "MWD Easement"). There is currently a 54-inch regional transmission main (the "Palos Verdes Feeder") within the MWD Easement Area that enters the property in the north of the site at the intersection of Orme Avenue and Eighth Avenue. This infrastructure does not serve the project site, but rather is part of the broad network of infrastructure that services the MWD service area. The rights granted to MWD in the MWD Easement include "the right to remove any improvements, trees, shrubs and other growth thereon, unless otherwise herein provided and at any time and from time to time, to locate, relocate, construct, reconstruct, maintain, operate, renew, enlarge, remove and replace a

Table IV.L-5
Existing Estimated Water Use

Existing Land Use	Size	Water Use Factor[a]	Water Use (gpd)	Acre-Feet per Year (AFY)
Residential				
Studio	22 du	80 gpd/du	1,760.00	1.97
1-bedroom apt/condo	451 du	120 gpd/du	54,120.00	60.62
2-bedroom apt/condo	638 du	160 gpd/du	102,080.00	114.34
3-bedroom apt/condo	76 du	200 gpd/du	15,200.00	17.03
Office	9,969 sf	0.15 gpd/du	1495.35	1.68
Parking—Surface	480,684 sf	0.02 gpd/sf	9,613.68	10.77
Landscaping	1,634,807 sf		116,230.89	130.20
Total			**300,500**[b]	**337**[b]

[a] *Based on City of Los Angeles Department of Public Works, Bureau of Sanitation Sewer Generation Rates table. Uses not listed are estimated by the closest type of use available in the table.*

[b.] *Totals are rounded.*

Source: Los Angeles Department of Water and Power, Water Supply Assessment—The Boyle Heights Mixed-Use Community Project, November 3, 2009.

line or lines of pipe of whatever nature, manholes, services and/or distribution system or systems or connections, with all and every appendages, structures and equipment necessary or convenient to be installed or used by [MWD] and of its assigns, in, under, upon, over and across" the MWD Easement Area. In addition, the MWD Easement prohibited the construction of any buildings or structures of any kind across the MWD Easement Area.

Several of the improvements constructed as part of the Wyvernwood development encroached on the MWD easement. In May of 1939, MWD granted an easement back to the Hostetters along with a right to construct and maintain one multiple dwelling building, three garage buildings and as many driveways and sidewalks as the Hostetters desired within the MWD Easement Area (the "Reverse Easement"). However, this right to construct the improvements was subject to the following right of MWD: "In the event it becomes necessary or desirable for [MWD] to excavate within its easement area at the locations …by said garage buildings and any pavement or sidewalks, the [Property owner] agrees to remove said garage buildings and any pavement or sidewalks temporarily from said easement area at its own expense immediately upon receiving written notice from [MWD]". It is not clear from the Reverse Easement whether MWD could also require the Property owner to demolish any residential buildings within the MWD Easement Area; however, the fact remains that certain of the improvements encroach on the MWD Easement Area and, such improvements may impede or prevent the repair and

maintenance of the MWD Main within the MWD Easement Area causing the MWD to require the removal of the improvement.

The MWD Main is an important part of the regional water distribution for the surrounding community and MWD intends to maintain it in its current location. MWD has confirmed it will not relinquish its right to the MWD Easement.

(b) Local Water Infrastructure

The project site is currently served by an existing public water distribution system that is owned by the LADWP. The pipe network for the distribution system is located within the public streets that surround and travel through the project site. Water meters are located at the street right-of-way. Individual buildings are connected to the water meters by private water services.

The existing off-site water distribution network varies from 8-inch to 12-inch pipes. To the north, an 8-inch pipe exists within Eight Street. To the east, an 8-inch and 12-inch pipe exists within Grande Vista Avenue and Dacotah Street, respectively. To the south, an 8-inch pipe is located with Olympic Boulevard and to the west, a 12-inch pipe is located within Soto Street.

Within the project site, the water distribution network varies from 6-inch to 12-inch pipes. The major on-site water main is a 12-inch pipe in Glenn Avenue which connects to the 8-inch pipe in Eighth Street and the 12-inch pipe in Dacotah Street. There is also a 6-inch pipe in Camulos Place, a 6-inch pipe in Rosalind Drive, an 8-inch pipe in Lydia Drive, a 6-inch pipe in Orme Avenue and an 8-inch pipe in Camulos Street. Existing building service laterals providing potable water to existing structures vary from 0.75- to 2-inch diameter pipes.

The existing irrigation system for the project site uses potable water supplied by the LADWP. Irrigation water is provided by the same distribution system that provides potable water to the existing structures. There is no separate metering for irrigation water.

Currently, there is no existing source or distribution system for reclaimed water within or nearby the project site. However, The Central Basin Municipal Water District (CBMWD), a water wholesaler that provides water and recycled water to local water providers such as LADWP, is planning the construction of the Southeast Water Reliability Project (SWRP). The SWRP includes a 42-inch pipeline that is planned to transfer recycled water between water treatment plants. The SWRP is organized in two construction phases, the first of which was recently completed. The second phase of the SWRP includes planned facilities easterly of the project site at Olympic Boulevard and

Lorena Street. The CBMWD has considered a lateral extension from its planned 42-inch pipeline that would provide recycled water directly to the project site.

Due to the economic feasibility of the second phase of planned construction, CBMWD has suspended its design and construction efforts required to complete the SWRP and has no certain date for the construction of the remaining planned facilities. CBMWD is currently revising its 2008 Master Plan and is reconsidering the limits and timing of its recycled water system (the anticipated completion of the Master Plan is scheduled for May 2012). According to CBMWD staff, economic feasibility of its second phase will require an additional customer demand of approximately 200 acre-feet to 300 acre-feet per year.

As shown in Table IV.L-6 on page IV.L-29, pressure tests conducted on June 1, 2006 by the LADWP indicate the system pressures surrounding the project site to be adequate.

Water for firefighting purposes is supplied to the project site via existing LADWP water mains and fire hydrants located within adjacent streets. There are a total of 19 fire hydrants currently located on the project site. All hydrants are located along the existing public streets with 11 on the perimeter streets and eight on interior streets. The fire flow requirement for the existing apartment complex on the project site is 4,000 gallons per minute at 20 pounds per square inch (psi) residual pressure. Please refer to Section IV.J.1, Fire Services, for additional information regarding the project's fire flow requirements as they relate to LAFD's fire suppression capabilities.

b. Regulatory Framework

(1) State

(a) Senate Bill 610 and Senate Bill 221

State legislation addressing water supply, Senate Bill (SB) 610 (Costa) and SB 221 (Kuehl), became effective January 1, 2002. SB 610, codified in the California Water Code (CWC), §10910 et seq., describes requirements for both water supply assessments and Urban Water Management Plans (UWMP) applicable to the CEQA process. SB 610 requires that for specified projects subject to CEQA, the urban water supplier must prepare a water supply assessment that determines whether the projected water demand associated with a proposed project is included as part of the most recently adopted UWMP. Specifically, a water supply assessment shall identify existing water supply entitlements, water rights, or water service contracts held by the public water system, and prior years' water deliveries received by the public water system. In addition, it must address water supplies over a 20-year period and consider average, single-dry, and multi-dry years. In

Table IV.L-6
Existing Water System Pressures

Pressure Test Location	Static Pressure (psi)
Eighth Street at Rosalind Avenue	73
Olympic Boulevard at Camulos Street	70
Grande Vista Avenue at Lydia Street	83
Soto Street at Hostetter Street	58
Eighth Street at Rosalind Avenue	73

Source: Stantec, 2010.

accordance with SB 610 and Section 10912 of the Water Code, projects subject to CEQA requiring submittal of a water supply assessment include the following:

- Residential developments of more than 500 dwelling units.
- Shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
- Commercial office buildings employing more than 1,000 persons or having more than 250,000 square feet of floor space.
- Hotels, motels, or both, having more than 500 rooms.
- Industrial, manufacturing, processing plants, or industrial parks planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
- Mixed-use projects that include one or more of the projects specified in this subdivision.
- A project that would demand an amount of water equivalent to or greater than the amount of water required by a 500 dwelling unit project.

The water supply assessment must be approved by the public water system at a regular or special meeting and must be incorporated into the CEQA document. The lead agency must then make certain findings related to water supply based on the water supply assessment.

In addition, under SB 610, an urban water supplier responsible for the preparation and periodic updating of an UWMP must describe the water supply projects and programs

that may be undertaken to meet the total project water use of the service area. If groundwater is identified as a source of water available to the supplier, the following additional information must be included in the UWMP: (1) a groundwater management plan; (2) a description of the groundwater basin(s) to be used and the water use adjudication rights, if any; (3) a description and analysis of groundwater use in the past five years; and (4) a discussion of the sufficiency of the groundwater that is projected to be pumped by the supplier.

SB 221 also addresses water supply in the land use planning process and focuses on new residential subdivisions in non-urban areas. SB 221 requires that written verification from the water service provider be submitted indicating sufficient water supply is available to serve a proposed subdivision, or the local agency shall make a specified finding that sufficient water supplies are or will be available prior to completion of a project. SB 221 specifically applies to residential subdivisions of 500 units or more. For legislative bodies approved tentative subdivision maps, Government Code Section 66473.7(i) exempts "…any residential project proposed for a site that is within an urbanized area and has been previously developed for urban uses, or where the immediate contiguous properties surrounding the residential project site are, or previously have been, developed for urban uses, or housing projects that are exclusively for very low and low-income households."

The project is subject to the requirements of SB 610 since the project includes more than 250,000 square feet of commercial floor area and would generate a demand for water that would be greater than the demand generated by 500 residential units. The project is located within an urbanized area. Therefore, the project is not subject to the requirements of SB 221.

(b) California Urban Water Management Plan Act

The California Urban Water Management Planning Act (CWC Division 6, Part 2.6, Sections 10610-10656) addresses several state policies regarding water conservation and the development of water management plans to ensure the efficient use of available supplies. The Act also requires water suppliers to develop water management plans every five years to identify short-term and long-term demand management measures to meet growing water demands during normal, dry, and multiple dry years. Specifically, municipal water suppliers that serve more than 3,000 customers or provide more than 3,000 AFY of water must adopt an Urban Water Management Plan.

(c) California Code of Regulations

Title 24, Part 5 of the California Code of Regulations (CCR), establishes the California Plumbing Code (last updated in 2007). The California Plumbing Code sets forth

efficiency standards (i.e., maximum flow rates) for all new federally-regulated plumbing fittings and fixtures, including showerheads and lavatory faucets. Accordingly, the maximum flow rate for showerheads is 2.5 gallons per minute (gpm) at 80 pounds per square inch (psi). The maximum flow rate for lavatory faucets, kitchen faucets, and replacement aerators is 2.2 gpm at 60 psi. In addition, all water closets (i.e., flush toilets) are limited to 1.6 gallons per flush and urinals are limited to 1 gallon per flush. After July 1, 2011, all water closets would be limited to 1.28 gallons per flush and urinals would be limited to 0.5 gallon per flush. In addition, Section 1605.3(h) establishes state efficiency standards for non-federally regulated plumbing fittings, including commercial pre-rinse spray valves.

(2) Regional

Based on the water supply planning requirements imposed on its member agencies and ultimate customers, such as the requirements to adopt urban water management plans, water supply assessments and written verifications, MWD has adopted a series of official reports on the state of its water supplies. As described further below, in response to recent developments in the Delta, MWD is engaged in identifying solutions that, when combined with the rest of its supply portfolio, will ensure a reliable long-term water supply for its member agencies. MWD will continue to rely on the plans and policies outlined in its *Regional Urban Water Management Plan, Water Surplus and Drought Management Plan*, *Water Supply Allocation Plan, Integrated Resources Plan, and Five Year Supply Plan* to address water supply shortages and interruptions (including potential shut downs of SWP pumps) to meet water demands. These plans are described in detail below.

(a) MWD 2010 Regional Urban Water Management Plan (RUWMP)

Pursuant to the Urban Water Management Planning Act, MWD prepared the 2010 Regional Urban Water Management Plan (RUWMP), which addresses the future of MWD's water supplies and demand through the year 2035. Campaigns for voluntary conservation, curtailment of replenishment water and agricultural water delivery are some of the actions outlined in the RUWMP to meet future water demand. If necessary, reduction in municipal and industrial water use and mandatory water allocation could be implemented. The RUWMP incorporates much of the actions and policies provided in MWD's *Water Surplus and Drought Management Plan* and *Integrated Resources Plan.*

(b) MWD Integrated Resources Plan

MWD its member agencies, sub-agencies and groundwater basin managers developed an Integrated Water Resources Plan (IRP) that was first adopted in 1996. The IRP is updated every five years. The 1996 IRP served as a long-term planning guideline for resources and capital investments. The purpose of the IRP was to provide for the development of a preferred resource mix (i.e., a balance of local and imported resources)

to meet the water supply reliability and water quality needs for the region in a cost-effective and environmentally sound manner. In its 1996 IRP, MWD established a water resource portfolio with real targets for each of the resources within the preferred mix. In 2004, a revised IRP was adopted that reviewed the goals and achievements of the original IRP, identified changed conditions for water resource development and updated the resource targets through 2025. A key component of the updated plan was the addition of a planning buffer, which provided for the identification of additional supplies, both imported and locally developed, to address uncertainty in future supplies and demands from factors such as the level of population and economic growth which directly drive water demands, water quality regulations, new chemicals found to be unhealthful, endangered species affecting sources of supplies and periodic and new changes in climate and hydrology.

On October 12, 2010, MWD updated the IRP, providing a roadmap for maintaining regional water supply reliability over the next 25 years. The 2010 IRP seeks to stabilize MWD's traditional imported water supplies and to continue developing additional local resources. The updated IRP also advances long-term planning for potential future contingency resources, such as storm water capture and large-scale seawater desalination. Through regular updates of the IRP and associated studies, MWD is continually updating its plans to meet ever-changing challenges to its water supplies.

(c) MWD Water Surplus and Drought Management Plan

In 1999, MWD incorporated the water shortage contingency analysis that is required as part of any urban water management plan into a separate, more detailed plan, called the Water Surplus and Drought Management (WSDM) Plan. That plan provides policy guidance to manage MWD's supplies and achieve the goals laid out in the agency's Integrated Resources Plan. The WSDM Plan splits resource actions into two major categories: Surplus Actions and Shortage Actions. The WSDM Plan considers the region to be in surplus only after MWD has met all demands for water, including replenishment deliveries. The Surplus Actions store surplus water, first inside then outside the region.

The shortage actions of the WSDM Plan are split into three subcategories: Shortage, Severe Shortage, and Extreme Shortage. Each category has associated actions that could be taken as a part of the response to prevailing shortage conditions. Each category has associated actions that could be taken as a part of the response to prevailing shortage conditions. Conservation and water efficiency programs are part of MWD's resource management strategy through all categories. Under Shortage conditions, MWD may make withdrawals from storage based on location and ability to access and interrupt t groundwater replenishment deliveries. Under Severe Shortage conditions, MWD will call for extraordinary drought conservation, reduce agricultural water deliveries, exercise available options for water transfers and seek other water purchases. Under Extreme Shortage conditions, MWD will allocate or reduce water deliveries to its member agencies

Additionally, the MWD announced a strategic approach in 2008 regarding its WSDM Plan. MWD's major strategies are as follows:

- Continue conservation campaign;
- Maximize recovery of water from Central Valley storage and banking programs;
- Purchase additional supplies to augment existing supplies; and
- Develop and implement a shortage allocation plan (discussed below).

(d) MWD Water Supply Allocation Plan.

While the WSDM Plan included a set of general actions and considerations for MWD staff to address during shortage conditions, it did not include a detailed water supply allocation plan or implementation approach. Therefore, MWD adopted a water supply plan called the Water Supply Allocation Plan in February 2008. This plan includes a formula for determining reductions of water deliveries to member agencies during extreme water shortage in MWD's service area conditions (i.e., drought conditions or unforeseen cuts in water supplies). The formula was derived for three scenarios of regional water shortage levels (10, 20, and 40 percent shortage) and is based on a methodology that cuts water allocations all across the board (i.e., to all member agencies) with adjustments for the member agency's dependency on MWD's water supplies and the agency's water conservation savings from programs and devices. The formula also calls for SWP water reductions of between 30 to 100 percent, depending on the severity of the shortage conditions. The allocation period covers 12 months from July of a given year through the following June. Member agency allocations would be enforced through a penalty rate structure.

On April 14, 2009, MWD's Board adopted its resolution declaring a regional water shortage and implementing the Water Supply Allocation Plan, effective July 1, 2009. The Board set the "Regional Shortage Level" at Water Supply Allocation Plan Level 2, which requires reduction of regional water use by approximately 10 percent and allows for the sale of approximately 1.98 million AF of MWD water in fiscal year 2009–2010. Delivery within a member agency of more than its allocated amount of MWD supplies will subject the member agency to a penalty of one to four times MWD's full service rate for untreated Tier 2 water depending on how much the member agency's water use for the twelve-month period beginning on July 1, 2009 exceeds its allocated amount. Any penalties collected may be rebated to the member agency that paid them to fund water management projects.

MWD has declared a regional water shortage and implemented the Water Supply Allocation Plan for a second consecutive year, effective July 1, 2010. [25, 26]

(e) MWD Five Year Supply Plan

In April 2008, MWD staff began working with MWD's member agencies on a Five Year Supply Plan (Supply Plan) to identify specific resource and conservation actions over the next five years to manage water deliveries under continued drought conditions and court ordered restrictions. The Supply Plan focuses on the following six categories of resource options to improve MWD's reliability over the next five years: water conservation, Colorado River Transactions, Near Term Delta Actions, SWP Transactions, Groundwater Recovery, and local resources. MWD's estimate of the dry year yield of the Supply Plan actions would be approximately 553,000 AF in 2009, increasing up to 703,000 AF in 2013.

(3) Local

(a) Los Angeles Municipal Code

The City of Los Angeles has adopted several ordinances in the LAMC in an effort to reduce water consumption. Specifically, the City of Los Angeles Plumbing Code (Chapter IX, Article 4, of the LAMC) incorporates by reference the California Plumbing Code. As previously described, maximum flow rates for water fixtures are established under the California Plumbing Code. Ordinance No. 180,822 was recently adopted and establishes water efficiency requirements for new development and renovation of existing buildings and mandates installation of high efficiency plumbing fixtures in residential and commercial buildings. In addition, City Ordinance No. 163,532 (Chapter XII, Article IV of the LAMC) requires a 10 percent reduction in irrigation for large turf areas (three acres of turf or greater), among other water-conserving measures.

The City's Water Rate Ordinance establishes water rates based on a two tier system to encourage water conservation. The motivation for the two-tier rate structure of LADWP is (1) to induce efficient water use, and (2) to confront future droughts without having to

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[25] *In April 2008, the Central Basin Municipal Water District filed a lawsuit to overturn the Water Supply Allocation Plan on the basis that it was unequitable and was not subject to environmental review. MWD has filed the administrative record, which Central Basin moved to strike and is preparing to file appropriate responses. The litigation is pending. Despite this litigation, the MWD intends to continue implementing the plan.*

[26] *The Metropolitan Water District of Southern California. Southern California Water Reserve Levels. Available at www.mwdh2o.com/mwdh2o/pages/yourwater/WaterAlert/levels.html. Accessed November 16, 2010.*

increase rates for those customers practicing conservation and thus remaining within the first tier usage block. Under the rate structure, LADWP customer class (e.g., single dwelling unit customer, multiple dwelling unit customer, commercial customer) are given a Tier 1 water allotment. If the customer's water consumption falls within that Tier 1 water allotment, the lower Tier 1 water rates apply. Customers who exceed their Tier 1 water allotment are charged the higher Tier 2 water rates. As of June 1, 2009, LADWP implemented Shortage Year Rates which are applied to all LADWP customers. Under Shortage Year Rates, the Tier 1 water allotments of all customers were reduced by 15 percent. The intent of the Shortage Year Rates is to provide an incentive for customers to save money by conserving water.[27]

Additionally, in response to recent water supply shortages, the City has recently begun enforcement of prohibited water uses as defined in the City's Emergency Water Conservation Plan Ordinance (Chapter XIII, Article I, of the LAMC). The ordinance, which was updated August 25, 2010, sets forth five different phases of water conservation, which shall be implemented based on water conditions. In determining which phase of water conservation shall be implemented, LADWP will monitor and evaluate the projected water supply and demand by its customers on a monthly basis, and will recommend to the Mayor and City Council the extent of the conservation required. The Mayor will, in turn, independently evaluate such recommendation and notify the Council of the Mayor's determination as to the particular phase of water conservation that should be implemented.

Phase I sets forth the following prohibitions for LADWP customers: [28]

- No use of water to wash down hard surfaces (e.g., sidewalks, walkways, driveways, or parking areas);
- No use of water to clean, fill, or maintain decorative fountains unless the water is part of a recycling system;
- No serving of water to customers in eating establishments, unless requested;
- Leaks from any pipe or fixture shall not go unattended;
- No washing/rinsing vehicles with a hose when the hose does not have a functioning self-closing nozzle attached or allowing the hose to run continuously;

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[27] *Los Angeles Department of Water and Power, Water Rates, www.ladwp.com/ladwp/cms/ladwp001155.jsp; accessed August 3, 2010.*

[28] *The prohibited uses set forth do not apply to Gray Water.*

- No irrigating during periods of rain;
- No watering or irrigating lawn, landscape, or other vegetated areas between the hours of 9:00 A.M. and 4:00 P.M.;
- No irrigating with potable water using stream rotator-type or gear-driven sprinklers for more than fifteen (15) minutes per cycle and up to two (2) cycles per watering day per station, or more than ten (10) minutes per watering day per station for all other types of sprinklers. Exempt from these landscape irrigation restrictions are irrigation systems using very low-flow drip-type irrigation when no emitter produces more than four (4) gallons of water per hour;
- No watering or irrigating of any lawn, landscape, or other vegetated area in a manner that causes or allows excess or continuous water flow or runoff onto an adjoining sidewalk, driveway, street, gutter or ditch;
- No installation of single pass cooling systems in buildings requesting new water service;
- No installation of non-recirculating systems in new conveyor car wash and new commercial laundry systems;
- Operators of hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily. The hotel or motel shall prominently display notice of this option in each bathroom using clear and easily understood language; and
- No large landscape areas, such as parks and open fields, shall have irrigation systems without rain sensors that shut off the irrigation systems.

Phase II includes the restrictions of Phase I and further prohibits landscape irrigation on any day other than Monday, Wednesday, or Friday for odd-numbered street addresses and Tuesday, Thursday, or Sunday for even-numbered street addresses.

Phase III includes the restrictions of Phases I and II and further prohibits landscape irrigation on any day other than Monday for odd-numbered street addresses and Tuesday for even-numbered street addresses. In addition, no washing of vehicles is allowed except at commercial car wash facilities and no filling of residential swimming pools and spas with potable water is allowed.

Phase IV includes the restrictions of Phases I, II, and III and further prohibits landscape irrigation on any day.

Phase V includes the restrictions of Phases I, II, III and IV. Additionally, the Board of Water and Power Commissioners is authorized to implement additional prohibited uses of water based on the water supply situation. Any additional prohibition would be published at least once in a daily newspaper of general circulation and would become effective immediately upon such publication and remain in effect until cancelled.

Shortage Year Rates and higher phases of the Emergency Water Conservation Plan Ordinance are expected to remain in effect until it is determined that the water supply currently available to the City is found sufficient for normal demands.

The imposition of Shortage Year Rates and Phase III conservation has reduced water demands to 1991 conditions, when the City first implemented water rationing and associated financial penalties for overuse of water.

(b) LADWP's Securing L.A.'s Water Supply

The City of Los Angeles is faced with various ongoing challenges in securing its future water supplies due to droughts, environmental restrictions, and climate change. In response to these uncertainties, including those impacting MWD, LADWP prepared and released a Water Supply Action Plan entitled Securing L.A.'s Water Supply dated May 17, 2008. The plan serves as a template for creating sustainable sources of water for the future of the City to reduce dependence on imported supplies. This plan incorporates an aggressive multi-pronged approach that includes: investments in state-of-the-art technology; a combination of rebates and incentives; the installation of smart sprinklers, efficient washers and urinals; and long-term measures such as expansion of water recycling and investment in cleaning up the local groundwater supply. This plan also takes into account the realities of climate change and the concerns of drought and dry weather.

The plan outlines short-term conservation strategies as well as long-term conservation and recycling measures. Short-term conservation strategies include enforcing prohibited uses of water, expanding the prohibited uses of water, extending outreach efforts, and encouraging regional conservation measures. Long-term conservation and recycling measures include increasing water conservation through reduction of outdoor water use and technology, maximizing water recycling, enhancing stormwater capture, accelerating clean-up of the San Fernando groundwater basin, and expanding groundwater storage.

In total, the City anticipates that the plan will conserve or recycle 32.6 billion gallons of water a year. By the year 2019, half of all new demand is estimated to be filled by a six-fold increase in recycled water supplies and by 2030 the other half will be met through ramped-up conservation efforts.

The plan also addresses current and future SWP supply shortages. The DWR estimates that the December 15, 2008 USFWS Biological Opinion on Delta Smelt will limit MWD exports of their anticipated SWP supply by up to 50 percent in a normal water year. However, the Action Plan concludes that MWD's actions in response to this threat will ensure continued reliability of its water deliveries.

(c) LADWP 2005 Urban Water Management Plan

In accordance with the California Urban Water Management Planning Act, the LADWP has prepared the 2005 UWMP. LADWP's 2005 UWMP details the LADWP's efforts to promote the efficient use and management of its water resources. LADWP's 2005 UWMP used a service area-wide method in developing its water demand projections. This methodology does not rely on individual development demands to determine area-wide growth. Rather, the growth in water use for the entire service area was considered in developing long-term water projections for the City of Los Angeles through the year 2030.

As previously stated, the UWMP is required to be updated every five years. LADWP has completed its 2010 Regional UWMP Update, which provides a revised demand forecast that factors in the water demand for which all water supply assessments have been prepared in addition to future demands. Water supply planning will be based on meeting these long-term demands. Because the 2005 UWMP serves as the basis for the determination in the project's water supply assessment, which was adopted by the LADWP Board of Water and Power Commissioners on November 3, 2009, this section presents information from the 2005 UWMP. As an update to the 2005 UWMP, the 2010 UWMP accounts for the projections in the 2005 UWMP.

3. Project Impacts

a. Methodology

The analysis of the project's impacts relative to water supply is based on the *Water Supply Assessment for the Boyle Heights Mixed-Use Community Project* prepared by LADWP (see Appendix M.1 of this Draft EIR) pursuant to SB 610. The Water Supply Assessment includes a calculation of the project's water demand based on the City's Bureau of Sanitation wastewater generation rates. The project's water conservation features were then incorporated to determine the project's net water demand. The project's net water demand is analyzed relative to LADWP's existing and planned future water supplies to determine if LADWP would be able to accommodate the project's water demands during an average, single-dry, and multi-dry years.

The analysis with regard to water infrastructure is based on the *Domestic Water System Study* prepared by Stantec (see Appendix M.2 of this Draft EIR). The Water System Study analyzes the adequacy of the existing water infrastructure system to accommodate the project's water demand.

b. Significance Thresholds

Appendix G of the CEQA Guidelines provides a set of sample questions that address impacts with regard to water. These questions are as follows:

Would the project:

- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects?
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

In the context of the questions above from Appendix G of the CEQA Guidelines, the *City of Los Angeles CEQA Thresholds Guide (2006)* states the impacts on Water Supply, shall be made on a case-by-case basis based on the following factors:

- The total estimated water demand for the project;
- Whether sufficient capacity exists in the water infrastructure that would serve the project, taking into consideration the anticipated conditions at project build-out;
- The amount by which the project would cause the projected growth in population, housing or employment for the Community Plan area to be exceeded in the year of project completion; and
- The degree to which scheduled water infrastructure or project design features would reduce or offset service impacts.

Based on these factors, the project would have a significant impact if the City's water supplies would not adequately serve the project or water distribution capacity would be inadequate to serve the proposed use after appropriate infrastructure improvements and project design features have been installed.

c. Project Design Features

Sustainability project features would be implemented by incorporation of the features into the conditions of approval for the project, mitigation measures, or pursuant to the regulations or design criteria required by the Specific Plan. Some of the key sustainability project features are highlighted below. A comprehensive matrix summarizing these and numerous other sustainable design features that would be implemented by the project is contained in Table II-3 in Section II, Project Description, of this Draft EIR.

(1) Water Conservation Features

As the proposed project would be designed to achieve the Silver Rating under the US Green Building Councils' Leadership in Energy and Environmental Design (LEED)® green building program, as well as compliance with the City's Green Building Ordinance, several project design features would be included to reduce the amount of water demand during operation of the project. Specific project design features relative to water supply are as follows:

Residential, Retail, Civic and Office Water Conservation Measures

- High-efficiency toilets (maximum 1.28 gallons per flush), including dual-flush water closets, and no-flush or waterless urinals in all non-residential restrooms as appropriate.
- Non-residential restroom faucets with a maximum flow rate of 0.5 gallon per minute.
- Non-residential kitchen faucets (except restaurant kitchens) with a maximum flow rate of 1.5 gallons per minute.
- Restaurant kitchen faucets with pre-rinse self-closing spray heads with a maximum flow rate of 1.6 gallons per minute.
- Non-residential restroom faucets of a self-closing design (i.e., that would automatically turn off when not in use).
- Residential bathroom and kitchen faucets with a maximum flow rate of 1.5 gallons per minute.
- No more than one showerhead per shower stall, with a flow rate no greater than 2 gallons per minute.
- High-efficiency clothes washers either within individual units (with water factor of 6.0 or less) and/or in common laundry rooms (commercial washers with water

factor of 7.5 or less). (If such an appliance is to be furnished by a tenant or owner, this requirement would be incorporated into the lease agreement or CC&Rs, respectively).

- Individual metering and billing for water use of all residential uses and exploration of such metering for commercial spaces.

- A leak detection system for any swimming pool, Jacuzzi, or other comparable spa equipment introduced on-site.

- Prohibit the use of single-passing cooling equipment. (Prohibitions of such equipment would be indicated on the building plans and incorporated into lease agreements or CC&Rs).

- Operate cooling towers at a minimum of 5.5 cycles of concentration.

Residential Water Conservation Measures

- Use of a demand (tankless or instantaneous) water heater system sufficient to serve the anticipated needs of the dwellings. (Such units would be located in close proximity to points of use, as feasible)

- High-efficiency Energy Star-rated dishwashers where applicable. If such an appliance is to be furnished by a tenant or owner, this requirement would be incorporated into the lease agreement or CC&Rs, as applicable.

Landscape Water Conservation Measures

- Weather-based irrigation controller with rain shutoff.

- Matched precipitation (flow) rates for sprinkler heads.

- Rotating sprinkler nozzles or comparable technology such as drip/microspray/ subsurface irrigation where appropriate.

- Minimum irrigation system distribution uniformity of 75 percent.

- A separate water meter (or submeter), flow sensor, and master valve shutoff for irrigated landscape areas totaling 5,000 square feet and greater.

- Proper hydro-zoning, turf minimization, and use of native/drought-tolerant plant materials, as feasible.

- Approximately 36 percent of all landscaping (approximately 6.7 acres) would consist of drought-tolerant plants with at least 4 percent (approximately 0.75 acre) consisting of native species.

- Use of landscape contouring to minimize precipitation runoff.
- A limited amount of permeable surfaces where possible would be used within commons site areas that are not located above subterranean parking.
- The site would be improved with a series of urban bioswales designed to collect surface water and provide first flush treatment prior to discharge to the local storm drain system.

Recycled Water Measures

- Specific actions to support the use of recycled water at the project site would be implemented as described below and listed under Project Design Feature L.1-5.

(2) Water Infrastructure Improvements

The local on-site water distribution system, including both the public and private systems would be removed and replaced to conform to the new street layout. (The existing regional line that traverses the site would remain). The existing 12 inch main in Glenn Avenue would remain in service to provide fire flow to the existing site as phased project construction occurs. The Glenn Avenue main, as well as other on-site water mains, would be modified and/or replaced in stages as phased construction of the project progresses so as to maintain consistent service to residential tenants continuing to live on the project site.

Planned improvements would incorporate 12-inch water mains located in the public streets throughout the project site providing and satisfying the needs for domestic service, irrigation, and fire protection of planned structures and improvements. The future water distribution system would be publicly owned and would be located in the planned public street rights of way within the project site. The proposed on-site water distribution system would consist of 12-inch mains to provide domestic and fire flow demands while keeping flow velocities under 10 feet per second during fire flow conditions.

The proposed 12-inch mains would maintain fire flow pressures required for the project. In isolated situations, pressure may need to be boosted on a building by building basis for the upper levels of some proposed mid rise and high rise buildings. Fire hydrants would be planned and located on every block of every street that has a water main to provide hose access to building Fire Department connections without hoses crossing intersections. All such improvements would meet Los Angeles Fire Department standards.

Actions to support the use of recycled water at the project site would be implemented as follows:

- Prior to the issuance of the project's Phase 1 demolition and grading permits, the applicant shall provide proof to the City of Los Angeles of submission of a written request for a determination from the Department of Water and Power (DWP) as to: (a) the status of the approval and construction schedule for recycled water delivery to the project site at the intersection of Olympic Boulevard and Evergreen Avenue; (b) the availability of a dedicated or identifiable source for financing the construction of the recycled water delivery (including, but not limited to, the Demand Side Management and Water Recycling Surcharge); and (c) in the event that DWP does not plan to deliver recycled water from its own city supply, an agreement between the DWP and a third party recycled water wholesaler to sell its recycled water to DWP. If prior to the issuance of Phase 1 demolition and grading permits: (1) DWP has completed and certified an EIR for the recycled water delivery (which could include, but is not limited to, an EIR for the Elysian Park Downtown Water Recycling Project); and (2) DWP has noted the availability of a dedicated or identifiable source for financing the construction of the recycled water delivery, then the project's Phase 1 improvements (and the improvements for subsequent Phases) shall include a purple pipe recycled water system to the satisfaction of the City Engineer and the Department of Water and Power. To the extent feasible, the purple pipe system shall be designed and constructed to accommodate all irrigation and cooling tower demands. In the event that DWP fails to deliver recycled water to the project within five years after the project's Phase 1 purple pipe recycled water system is constructed, then remaining project construction phases will not be required to incorporate a purple pipe recycled water system.

- If DWP's construction schedule does not indicate with certainty that their delivery of recycled water to the intersection of Olympic Boulevard and Evergreen Avenue will occur within 10 years of the issuance of the project's Phase 1 demolition and grading permits, then the project's Phase 1 improvements (and the improvements for subsequent Phases) will not be required to include a purple pipe recycled water system.

- Further, should the DWP fail to respond within 90 days of Applicant's written request for determination with a final written response regarding its approval and construction schedule and source of financing, then the project's improvements will not be required to include a purple pipe water system.

d. Analysis of Project Impacts

(1) Construction

(a) Water Supply and Infrastructure

A short-term demand for water may occur during project construction activities on-site. These activities would occur in phases throughout the project construction period

(from 2015 to 2030) and would be temporary in nature. Construction water will be available through LADWP through the existing distribution system. The existing 12-inch main in Glenn Avenue would remain in service to provide fire flow to the existing site as phased construction occurs. The Glenn Avenue main, as well as other on-site water mains, would be modified and/or replaced in stages as phased construction of the project progresses.

It is estimated that compaction and stabilization of graded earthwork during project construction could result in a water usage rate of 25 gallons of water per cubic yard of soil. Additional water will be required for erosion control and control of windblown dust during construction, which would vary greatly with weather conditions. However, an average of 1,200 gallons per acre per day could be expected for dust control. The water demand generated by project construction activities would be offset by the reduction in water consumption resulting from the phased demolition of existing uses. Overall, project construction activities would require minimal water demand and would not be expected to have any adverse impact on available water supplies or the existing water distribution system. Therefore, impacts associated with construction activities would be less than significant.

(2) Operation

(a) Water Supply

New development on the project site would result in an increase in long-term water demand for operational uses, maintenance, and other activities on the project site. Based on the Water Supply Assessment, the resulting potable water demand for the project is estimated at approximately 944,889 gpd or 1,058 AFY.[29] As discussed above, LADWP currently provides water service to existing uses located on the site, which has an existing potable water demand of approximately 300,500 gpd or 337 AFY as shown in Table IV.L-7 on page IV.L-45.[30] The project would incorporate water conservation features which would further reduce the project's potable water demand by 246,705 gpd or 276 AFY. Thus,

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[29] *Los Angeles Department of Water and Power, Water Supply Assessment—The Boyle Heights Mixed-Use Community Project, November 3, 2009.*

[30] *As discussed above, the existing water use number based on LADWP rates is lower than the existing water use number that is based on review of water billing records. This difference is likely attributable, in part, to the existing occupancy of the residential units, which is higher than average occupancies in the City of Los Angeles. Thus, to provide a conservative analysis of Project impacts, the lower water use number set forth in the Water Supply Assessment has been used as this number is provided as a credit against future demand to determine the net increase in water demand that would be generated by the Project.*

Table IV.L-7
Estimated Water Demand of the Project

Land Use	Size	Unit	Factor	Unit	Demand (gpd)	Demand (AFY)
Proposed						
Residential						
Studio/Single	72	du	80	gpd/du	5,760	6.45
1-bedroom apt/condo	1,712	du	120	gpd/du	205,440	230.12
2-bedroom apt/condo	1,720	du	160	gpd/du	275,200	308.26
3-bedroom apt/condo	896	du	200	gpd/du	179,200	200.73
Subtotal Residential					*665,600*	*745.57*
Office	125,000	sf	0.15	gpd/sf	18,750	21.00
Medical Office	25,000	sf	0.25	gpd/sf	6,250	7.00
Neighborhood Retail	60,000	sf	0.08	gpd/sf	4,800	5.38
Pharmacy/Grocery	25,000	sf	0.08	gpd/sf	2,000	2.24
Restaurant: Indoor full service[a]	455	seats	30	gpd/seat	13,636.36	15.27
Restaurant: Fast food[b]	946	seats	12	gpd/seat	11,352.89	12.72
Health Club/Fitness/Gym	25,000	sf	0.80	gpd/sf	20,000	22.40
Day Care[c]	273	child	8	gpd/child	2184	2.45
Civic Uses—banquet room	10,000	sf	0.80	gpd/sf	8,000	8.96
Civic Uses—library	15,000	sf	0.08	gpd/sf	1,200	1.34
Subtotal Commercial and Civic					*88,173*	*98.77*
Cooling Tower	11,200	ton	11.92		133,511.67	149.55
Parking Structure	3,936,000	sf	0.02	gpd/sf	78,720	88.18
Landscaping[d]	810,216	sf	—		57,604.10	64.52
Total Demand (Proposed Uses)					***944,889***	***1,058***
Existing						
Residential						
Studio/Single	22	du	80	gpd/du	1,760	1.97
1-bedroom apt/condo	451	du	120	gpd/du	54,120	60.62
2-bedroom apt/condo	638	du	160	gpd/du	102,080	114.34
3-bedroom apt/condo	76	du	200	gpd/du	15,200	17.03
Office	9,969	sf	0.15	gpd/sf	1,495.35	1.68
Parking—Structure	94,316	sf	0.00	gpd/sf	0	0
Parking—Surface	480,684	sf	0.02	gpd/sf	9,613.68	10.77
Landscaping[d]	1,634,807	sf	—		116,230.89	130.20
Total Demand (Existing Uses)					***-300,500***	***-337***
Water Conservation Features					**-246,705**	**-276**
NET INCREASE					**397,684**	**445**

[a] *Assumed 1 seat per 33 square feet as provided by the Applicant.*
[b] *Assumed 1 seat per 11 square feet as provided by the Applicant.*
[c] *The number of children is estimated by dividing the square footage of the day care by 55 as provided by the Applicant.*
[d] *Landscaping water use is estimated by Landscape Water Management Program v.1.4 developed by Irrigation Training and Research Center of California Polytechnic State University, Sa Luis Obispo.*

Source: Los Angeles Department of Water and Power, Water Supply Assessment—The Boyle Heights Mixed-Use Community Project, November 3, 2009.

when accounting for existing uses to be removed and the project's water conservation measures, the net potable water demand for the project is approximately 397,684 gpd or 445 AFY. Table IV.L-7 presents a breakdown of the existing and proposed land uses, and the corresponding water demand estimates.

As described above, LADWP's 2005 UWMP provides water demand projections in five-year increments through 2030, which are based on demographic data from SCAG Regional Transportation Plan, as well as billing data for each major customer class, weather, and conservation. Based on LADWP's 2005 UWMP, the water demand in 2030 during average year hydrological conditions is expected to reach 776,000 AF. During a single-dry year or multi-dry years, water demand could reach 813,000 AF in 2030. Thus, the project's estimated net water demand of 445 AFY would be within the available and projected water supplies for normal, single-dry and multi-dry years through the year 2030 and within the UWMP's 25 year water demand growth projection.[31] In addition, as stated within the Water Supply Assessment, it is LADWP staff's judgment that the City's current water shortage is a transitory event consistent with historical multi-dry year water cycles accounted for in LADWP's 2005 UWMP.[32] Given that LADWP would be able to meet the water demand of the project, as well as the existing and planned future water demands of its service area, impacts on water supply associated with long-term operation of the project would be less than significant.

As described in detail above, LADWP's water supplies are facing challenges due to existing drought conditions and environmental concerns and litigation associated with LADWP's sources of water supply. For example, in 2008, approximately 66 percent of the total water supplies for LADWP consisted of purchased water from the MWD. However, due to biological opinions and litigation, described above, MWD's water supplies from the SWP and the Colorado River have been threatened. Additionally, changes in hydrological conditions due to climate change could also have an impact on MWD's water supplies. In the *State Water Project Delivery Reliability Report 2007*, DWR described and analyzed the reliability of SWP supplies in the Delta through 2027 based on four climate change scenarios and two Delta target flow scenarios to account for the potential flow restrictions that could be imposed as a result of the federal Delta smelt case.[33] Based on the

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[31] *Ibid.*

[32] *Ibid.*

[33] *The four climate change scenarios are defined by the climate change model used and the assumed greenhouse gas emissions scenario. The climate change models used are the Geophysical Fluid Dynamic Lab Model (GFDL) and the Parallel Climate model (PCM). The emissions scenarios are referred to as A2 and B1. A2 assumes high growth in population, regional based economic growth, and slow technological changes, which results in significantly higher greenhouse gas emissions. B1 represents low*

(Footnote continued on next page)

hydrological models and accounting for the range of climate change scenarios and reductions associated with the Delta Smelt, average SWP deliveries from the Delta could be decreased between 66 to 69 percent of the maximum delivery amount of 4.133 million AF. The minimum annual delivery (during a single-dry year) would range from 6 to 7 percent of the maximum amount allocated for delivery.

Also discussed in detail above, restoring the Delta's water capacity has been a high priority for MWD and the California Legislature. Extensive plans are already underway for improving the operation of the Delta's water pumps while also protecting the Delta smelt and other endangered fish species. Former Governor Schwarzenegger made the Delta and statewide water policy a high priority by establishing the Delta Vision Process and the Bay-Delta Conservation Plan. In addition, through the implementation of the IRP, MWD would continue to develop programs to meet its reliability within its traditional core supplies, collaborate with member agencies to implement a water supply buffer to address uncertainty, and use an adaptive management approach to address other future supply vulnerabilities and uncertainties. As described above, MWD has also developed the Water Supply Allocation Plan, which includes a detailed water supply allocation plan or implementation approach during extreme water shortage in MWD's service area conditions (i.e., drought conditions or unforeseen cuts in water supplies). The Water Supply Allocation Plan allows for MWD to cut water allocations across the board (i.e., to all member agencies) with adjustments for the member agency's dependency on MWD's water supplies and the agency's water conservation savings from programs and devices. Through regular updates of the IRP and associated studies, MWD is continually updating its plans to meet ever-changing challenges to its water supplies. These plans were previously discussed in detail in the Regulatory Framework subsection above.

Along with MWD's water management and reliability initiatives, LADWP is committed to providing a reliable water supply for the City as provided in its plan *"Securing L.A.'s Water Supply"* which is described in the Regulatory Framework subsection above. This plan serves as a blueprint for creating sustainable sources of water for the City of Los Angeles to reduce dependence on imported supplies. This plan incorporates an aggressive multi-pronged approach that includes: investments in state-of-the-art technology; a combination of rebates and incentives; the installation of smart sprinklers, efficient washers and urinals; and long-term measures such as expansion of water recycling and investment in cleaning up the local groundwater supply. This plan also takes into account the realities of climate change and the dangers of drought and dry weather.

growth in population, global based economic growth, and sustainable development that results in a low increase in greenhouse gas emissions. Thus, the four scenarios are (A2 emissions with GFDL model; B1 emissions with GFDL model; A2 emissions with the PCM model; B1 emissions with the PCM model).

The primary premise of the plan is that the City will meet all new demand for water due to projected population growth through a combination of water conservation and water recycling. The plan also specifically addresses the current and future SWP supply shortages. The plan specifically concludes that MWD's actions in response to the threats to the SWP will ensure continued reliability of its water deliveries. The plan further states that "despite concerns about ongoing water shortages and higher costs, MWD has upheld its pledge to plan for emergencies and natural disasters throughout this region." MWD estimates its calendar year 2009 non-emergency storage to be 1,092,000 acre-feet in surface and groundwater storage accounts plus 670,000 acre-feet of storage reserved for emergencies. In total, this reserve of water supplies will be used to buffer the severity of a potential shortage. Furthermore, by focusing on demand reduction, implementation of the plan will ensure that long-term dependence on MWD supplies will not be exacerbated by potential future shortages. Therefore, impacts on water supply would be less than significant.

With regard to recycled water, as previously noted, the CBMWD is planning the construction of the SWRP which includes planned facilities easterly of the project site at Olympic Boulevard and Lorena Street. According to CBMWD staff, economic feasibility of its second phase, which could provide recycled water directly to the project site, will require an additional customer demand of approximately 200 acre-feet to 300 acre-feet per year. The project's irrigation demand would be approximately 64.5 acre-feet per year, representing between 21 to 32 percent of the overall customer demand necessary to create economic feasibility of CBMWD's second phase. Since the proposed project cannot on its own satisfy the customer demand threshold for economic feasibility, the proposed project is not assured of access to recycled water. Nonetheless, specific actions to support the use of recycled water at the project site would be implemented as described below and listed under Project Design Feature L.1-5.

Based on the above, and on the November 2009 LADWP Water Assessment, estimated water demand for the proposed project at buildout would not exceed available supplies projected by LADWP. Therefore, the proposed project's impacts on water supply would be less than significant.

(b) Water Infrastructure

Fire flow requirements typically dictate whether an existing water infrastructure system is adequate, as fire flow demands are higher than domestic water demands. As previously stated, the existing on-site water infrastructure system would be replaced with a new system. The proposed on-site water distribution system will consist of 12 inch mains to provide domestic and fire flow demands while keeping flow velocities under 10 feet per second during fire flow conditions. The LADWP was provided with the proposed tract layout, the location and sizes of proposed on-site water mains, and the location of blocks

which will have fire department requirements for 4,000 gpm and 6,000 gpm. The LADWP conducted hydraulic modeling to evaluate the impact on the regional system under the following conditions: Hydraulic model under static conditions (normal conditions); Fire flow of 4,000 gpm total from four fire hydrants simultaneously; and fire flow of 6,000 gpm total from four to six hydrants simultaneously.[34]

Based on the analysis, LADWP determined that the proposed infrastructure would be adequate to serve the project site and that additional upgrades beyond the project boundary would not be necessary.[35] In addition, the LAFD also indicated that the water mains serving the project site would be adequate to support the project. Thus, potential impacts associated with the ability of existing and proposed infrastructure to accommodate the project would be less than significant.

4. Cumulative Impacts

Cumulative growth in the greater project area through 2030 includes specific known development projects as well as general ambient growth projected to occur, as described in Section III, Environmental Setting, of this EIR. Such growth and development would cumulatively contribute, in conjunction with the proposed project, to water demand needs in the area.

Public agencies within the City typically use official growth projections established by SCAG in its 2008 Regional Transportation Plan for systems planning. As indicated in Section III, Environmental Setting, of this Draft EIR, the growth associated with 11 of the 37 identified related projects are within SCAG's 2030 growth forecasts. However, growth associated with 26 of the related projects was not within the SCAG forecasts, and therefore, has been added to the forecasts for this cumulative analysis.

a. Water Supply

The geographic context for the cumulative impact analysis on water supply is the LADWP service area (i.e., the City). As discussed above, LADWP, as a public water service provider, is required to prepare and update every five years its UWMP to plan and

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[34] *The fire flow requirements for low rise buildings (below 75 feet high) are 4,000 gpm at 20 psi residual pressure from four hydrants running at the same time. The fire flow requirements for high rise buildings (above 75 feet high) are 6,000 gpm at 20 psi residual pressure from four hydrants running at the same time.*

[35] *Stantec, 2010 based on an e-mail from Ms. Fernandez of LADWP dated June 2, 2010, the LADWP stated: "Based on the analysis, additional upgrades beyond the project boundary are not necessary."*

provide for water supplies to serve existing and projected demands. The 2005 UWMP prepared by LADWP accounts for existing development within the City, as well as projected growth through the year 2030.[36]

Additionally, under the provisions of SB 610, LADWP is required to prepare a comprehensive water supply assessment for every new development "project" (as defined by Section 10912 of the Water Code) within its service area. The types of projects that are subject to the requirements of SB 610 tend to be larger projects (e.g., residential projects with at least 500 dwelling units, shopping centers employing more than 1,000 persons or having more than 500,000 square feet of floor space, commercial office buildings employing more than 1,000 persons or having more than 250,000 square feet of floor space, etc.) that may or may not have been included within the 2030 growth projections of the 2005 UWMP. The water supply assessment for such projects would evaluate the quality and reliability of existing and projected water supplies, as well as alternative sources of water supply and measures to secure alternative sources if needed. In addition, as described above, SB 221 requires that for residential subdivisions with 500 units or more that are in non-urban areas, written verification from the service provider (e.g., LADWP) be submitted indicating sufficient water supply is available to serve the proposed subdivision, or the local agency shall make a specified finding that sufficient water supplies are or will be available prior to completion of the project.

As shown in Table IV.L-8 on page IV.L-51, the related projects would generate a total average water demand of approximately 957,667 gpd or 1,073 AF per year. The proposed project in conjunction with related projects would yield a cumulative average water demand of approximately 1,518 AFY. As stated above, LADWP's 2005 UWMP projects yearly water demand during an average hydrological year to reach 776,000 AF by 2030, which is an increase of 17 percent from 2005 water demand. The anticipated cumulative water demand increase of 1,518 AFY from the development of the proposed project and related projects would fall within the available and projected water demand of LADWP. In addition, as described above, larger new development projects pursuant to the provisions of the Water Code are required to demonstrate that adequate water supplies are available to meet the needs of each individual project. Through this process, projects that may not have been accounted for in the 2005 Urban Water Management Plan are assured that sufficient water supplies are available.

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[36] *The 2005 UWMP estimated water demand through the year 2030, based on SCAG forecasted growth in the 2004 Regional Transportation Plan (RTP). Since preparation of the 2005 UWMP, new growth forecasts have become available in the 2008 Regional Transportation Plan. A comparison of the two sets of growth forecasts indicates that the forecasts of 2004 RTP are more conservative.*

Table IV.L-8
Cumulative Water Demand for Related Projects Not Within SCAG Growth Forecasts for 2030

ID	Related Project	SF Units	MF Units	Total Res Units	Total Res Generation[a,b] (gpd)	Rest SF	Total Rest Generation[a] (gpd)	Retail and Services SF	Total Retail Generation[a] (gpd)	Office SF	Total Office Generation[a] (gpd)	Indust/ Manuf/ Warehs SF	Total Industrial Generation[c] (gpd)	School Students	Total School Generation[d] (gpd)	Combined Total Generation (gpd)
2	LAUSD ELA High School #1	0	0	0	0	0	0	0	0	0	0	0	0	1,026	8,208	**8,208**
3	Fast food restaurant with drive thru	0	0	0	0	2,510	753	0	0	0	0	0	0	0	0	**753**
4	Oscar de La Hoya Charter School	0	0	0	0	0	0	0	0	0	0	0	0	120	960	**960**
5	Prop Q & F Public Safety Civic Center Facility Plan (EOC)[e]	0	0	0	0	0	0	0	0	112,000	22,400	0	0	0	0	**22,400**
6	Bar/Lounge	0	0	0	0	8,770	2,631	0	0	0	0	0	0	0	0	**2,631**
8	LAUSD—Central Reg Middle School #7	0	0	0	0	0	0	0	0	0	0	0	0	1,350	10,800	**10,800**
9	Police HQ Facility Plan (Aiso Street Parking Facility)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10	Sears Project (Mixed-Use)	0	764	764	152,800	0	0	572,620	57,262	165,300	33,060	0	0	0	0	**243,122**
11	Mixed-Use Project	0	182	182	36,400	0	0	3,000	300	0	0	0	0	0	0	**36,700**
12	Bus Maintenance & Inspection Facility[f]	0	0	0	0	0	0	0	0	0	0	87,120	6,970	0	0	**6,970**
13	Wholesale Mart	0	0	0	0	0	0	78,970	7,897	0	0	0	0	0	0	**7,897**
14	One Santa Fe Project (Mixed-Use)	0	459	459	91,800	0	0	25,000	2,500	0	0	0	0	0	0	**94,300**
15	Mixed-Use Project	0	320	320	64,000	0	0	18,720	1,872	0	0	0	0	0	0	**65,872**
17	Industrial Park	0	0	0	0	0	0	0	0	0	0	94,850	7,588	0	0	**7,588**
18	Warehouse/Office/Manufacturing	0	0	0	0	0	0	0	0	77,000	15,400	361,000	28,880	0	0	**44,280**
19	East 27th Street Charter School	0	0	0	0	0	0	0	0	0	0	0	0	1,120	8,960	**8,960**
20	Industrial Park Tract Map	0	0	0	0	0	0	0	0	0	0	643,000	51,440	0	0	**51,440**
21	Lorena Apartments	0	112	112	22,400	0	0	0	0	0	0	0	0	0	0	**22,400**
22	Commercial (Light Manufacturing) Condos	0	0	0	0	0	0	0	0	0	0	320,500	25,640	0	0	**25,640**
23	Little Tokyo Block 8 Mixed Use	0	750	750	150,000	0	0	50,000	5,000	0	0	0	0	0	0	**155,000**
24	Affordable Housing	0	115	115	23,000	0	0	0	0	0	0	0	0	0	0	**23,000**
27	Middle School	0	0	0	0	0	0	0	0	0	0	0	0	360	2,880	**2,880**
28	Live/Work Lofts	0	18	18	3,600	0	0	0	0	0	0	0	0	0	0	**3,600**

Table IV.L-8
Cumulative Water Demand for Related Projects Not Within SCAG Growth Forecasts for 2030

ID	Related Project	SF Units	MF Units	Total Res Units	Total Res Generation[a,b] (gpd)	Rest SF	Total Rest Generation[a] (gpd)	Retail and Services SF	Total Retail Generation[a] (gpd)	Office SF	Total Office Generation[a] (gpd)	Indust/ Manuf/ Warehs SF	Total Industrial Generation[c] (gpd)	School Students	Total School Generation[d] (gpd)	Combined Total Generation (gpd)
29	Mixed-Use Project	0	78	78	15,600	0	0	0	0	0	0	0	0	0	0	**15,600**
30	Mixed Use/Senior Housing	0	125	125	25,000	0	0	19,700	1,970	0	0	0	0	0	0	**26,970**
34	Pechiney Site (Power Plant)[f]	0	0	0	0	0	0	0	0	0	0	871,200	69,696	0	0	**69,696**
	Related Projects Total				**584,600**		**3,384**		**76,801**		**70,860**		**190,214**		**31,808**	**957,667**

SF=Single Family Units
MF = Multifamily Units
Res = Residential
SF = Square Feet
Rest = Restaurant
Indust/Manuf/Warehs = Industrial/Manufacturing/Warehouse
[a] *Generation factor source: City of Los Angeles Department of Public Works, Bureau of Engineering Sewer Design Manual, Section F200.*
[b] *Assumes average size of two bedrooms per unit for multifamily units*
[c] *Generation factor source: Los Angeles CEQA Thresholds Guide, 2006.*
[d] *Generation factor source: Assumes LADWP water demand rate of 8 gpd/student.*
[e] *Assumes office generation rate for public facility uses.*
[f] *Assumes a floor area based on the total site acreage.*
Source: Matrix Environmental, 2011.

The above identified related projects as well as future growth in the City of Los Angeles would cumulatively increase the Citywide demand for water. The City of Los Angeles is faced with various ongoing challenges in securing its future water supplies due to among other things droughts, environmental restrictions, and climate change. However, as discussed above, in response to uncertainties regarding water supply, LADWP released a Water Supply Action Plan entitled Securing L.A.'s Water Supply dated May 2008. The plan will serve as a blueprint for creating sustainable sources of water for the City of Los Angeles to reduce dependence on imported supplies. The primary premise of the plan is that the City of Los Angeles will meet all new demand for water due to projected population growth through a combination of water conservation and water recycling. LADWP is planning to achieve these goals by expanding its water conservation efforts through public education, installing high efficiency water fixtures, providing incentives, and expanding the City's outdoor water conservation program. To increase recycled water use, LADWP is expanding the recycled water distribution system to provide water for irrigation, industrial use, and groundwater recharge. Furthermore, the UWMP plans and provides for water supplies to serve existing and projected needs, including those of future growth and development as may occur through related projects. More recently, LADWP's Securing L.A's Water Supply offers a framework that would allow the City to generate enough reduction in water use to be able to meet all new future demand. In addition, the requirements of SB 610 and SB 221 provide means to ensure that the water supply needs of large development projects are carefully considered relative to LADWP's ability to adequately meet future needs. Thus, it is anticipated that LADWP would be able to supply the demands of the proposed project and related projects through the foreseeable future. Compliance of the proposed Project and future development projects with regulatory requirements that promote water conservation such as the LAMC, including the City's Green Building Ordinance, as well as AB 32 which is discussed in detail in Section IV.B, Air Quality, of this Draft EIR would also assist in assuring that adequate water supply is available on a cumulative basis.

Based on the above, it is anticipated that LADWP would be able to supply the demands of the proposed Project and future growth through 2030. Therefore, cumulative impacts on water supply would be less than significant.

b. Water Infrastructure

The geographic context for the cumulative impact analysis on water infrastructure is the project vicinity. Development of the project and future new development in the project vicinity (including the 37 related projects) would cumulatively increase water demand on the existing water infrastructure system. However, new development projects would be subject to discretionary review to assure that the existing public utility facilities would be adequate to meet the domestic and fire water demands of each project. Furthermore,

LADWP, Los Angeles Department of Public Works, and the City of Los Angeles Fire Department would conduct ongoing evaluations to ensure facilities are adequate. Therefore, cumulative impacts on the water infrastructure system would be less than significant.

c. Global Warming and Water Supply

As indicated above, there are complex physical, chemical, and atmospheric mechanisms involved in global climate change that make it difficult to predict what the effects of global climate change will be, particularly at a State or local level. Due to this unpredictability, the secondary effects that global climate change may have on water supplies for a given region are even more difficult to predict.[37] While the DWR does provide estimates of the impacts of global climate change an SWP supplies, the science on global warming is still evolving. Furthermore, policy recommendations on how to incorporate potential changes to water supply due to climate change into water resource planning and management are still being developed. As discussed above LADWP's Securing LA's Water Supply plan takes into account the realities of climate change. However, consistent with studies prepared by DWR, it is considered premature to make an assessment of how climate change will specifically affect water availability for the proposed Project. Refer to the discussion above regarding DWR's estimates of how SWP Table A water deliveries may be affected by global climate change.

5. Project Design Features and Mitigation Measures

a. Project Design Features

Based on the analysis above, and incorporation of the following project design features, the proposed project would not result in significant impacts related to domestic water supply or water infrastructure. Therefore, no mitigation measures would be required.

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[37] *The Los Angeles Superior Court issued a statement of decision (Case No. BS 084677) on August 15, 2007 which upheld a local agency's Return to a Writ of Mandate and Final Additional Analysis to an EIR for a local development project (California Oak Foundation v. City of Santa Clarita (2005) 133 Cal.App.4th) and struck down certification of the EIR for the Gate King project because it did not address legal uncertainties surrounding a water transfer. Among other issues, the statement of decision dealt with the analysis of the potential impact of global warming on water supplies and concluded that it was proper that no quantification of the impact of climate change on the reliability of SWP water was prepared because DWR has indicated in its reports that quantification is premature. The statement of decision indicates that DWR, with the most expertise on water supply in California, has determined that the science on global warming has not reached a point where it can be quantified and incorporated into delivery projections of the SWP. Accordingly, the statement of decision also concludes that the City is in no better position to quantify the effects of global warming on the reliability of SWP water and that it is not required to do so under CEQA.*

Project Design Feature L.1-1: Water Infrastructure Improvements. The following water infrastructure improvements shall be implemented and phased as part of the Specific Plan build out. The local on-site water distribution system, including both the public and private systems shall be removed and replaced to conform to the new street layout. (The existing regional line that traverses the site shall remain). The existing 12 inch main in Glenn Avenue shall remain in service to provide fire flow to the existing site as phased project construction occurs. The Glenn Avenue main, as well as other on-site water mains, shall be modified and/or replaced in stages as phased construction of the project progresses so as to maintain consistent service to residential tenants continuing to live on the project site.

Planned improvements shall incorporate 12-inch water mains located in the public streets throughout the project site providing and satisfying the needs for domestic service, irrigation, and fire protection of planned structures and improvements. The future water distribution system shall be publicly owned and shall be located in the planned public street rights of way within the project site. The proposed on-site water distribution system shall consist of 12-inch mains to provide domestic and fire flow demands while keeping flow velocities under 10 feet per second during fire flow conditions.

The proposed 12-inch mains shall maintain fire flow pressures required for the project. In isolated situations, pressure may need to be boosted on a building by building basis for the upper levels of some proposed mid rise and high rise buildings. Fire hydrants shall be planned and located on every block of every street that has a water main to provide hose access to building Fire Department connections without hoses crossing intersections. All such improvements shall meet Los Angeles Fire Department standards.

Project Design Feature L.1-2: Residential, Retail, Civic and Office Water Conservation Measures. Water conservation features shall be included as follows:

- High-efficiency toilets (maximum 1.28 gallons per flush), including dual-flush water closets, and no-flush or waterless urinals in all non-residential restrooms as appropriate.
- Non-residential restroom faucets with a maximum flow rate of 0.5 gallon per minute.
- Non-residential kitchen faucets (except restaurant kitchens) with a maximum flow rate of 1.5 gallons per minute.
- Restaurant kitchen faucets with pre-rinse self-closing spray heads with a maximum flow rate of 1.6 gallons per minute.

- Non-residential restroom faucets of a self-closing design (i.e., that would automatically turn off when not in use).
- Residential bathroom and kitchen faucets with a maximum flow rate of 1.5 gallons per minute.
- No more than one showerhead per shower stall, with a flow rate no greater than 2 gallons per minute.
- High-efficiency clothes washers either within individual units (with water factor of 6.0 or less) and/or in common laundry rooms (commercial washers with water factor of 7.5 or less). (If such an appliance is to be furnished by a tenant or owner, this requirement would be incorporated into the lease agreement or CC&Rs, respectively).
- All residential uses shall be individually metered and billed for water use. Such metering shall be explored for commercial spaces and implemented if feasible.
- The project shall incorporate a leak detection system for any swimming pool, Jacuzzi, or other comparable spa equipment introduced on-site.
- The project shall prohibit the use of single-passing cooling equipment. (Prohibitions of such equipment would be indicated on the building plans and incorporated into lease agreements or CC&Rs).
- The project shall operate cooling towers at a minimum of 5.5 cycles of concentration.

Project Design Feature L.1-3: Residential Water Conservation Measures. Water conservation features shall be included as follows:

- The project shall incorporate the use of a demand (tankless or instantaneous) water heater system sufficient to serve the anticipated needs of the dwellings. (Such units shall be located in close proximity to points of use, as feasible)
- High-efficiency Energy Star-rated dishwashers shall be required where applicable. If such an appliance is to be furnished by a tenant or owner, this requirement shall be incorporated into the lease agreement or CC&Rs, as applicable.

Project Design Feature L.1-4: Landscape Water Conservation Measures. Water conservation features shall be included as follows:

- Weather-based irrigation controller with rain shutoff.
- Matched precipitation (flow) rates for sprinkler heads.

- Rotating sprinkler nozzles or comparable technology such as drip/microspray/subsurface irrigation where appropriate.
- The project shall install an irrigation system with minimum distribution uniformity of 75 percent.
- The project shall install a separate water meter (or submeter), flow sensor, and master valve shutoff for irrigated landscape areas totaling 5,000 square feet and greater.
- The Specific Plan's landscape shall utilize proper hydro-zoning, turf minimization, and use of native/drought-tolerant plant materials to the maximum extent feasible.
- A minimum of 36 percent of all landscaping (approximately 6.7 acres) in the Specific Plan shall consist of drought-tolerant plants with at least 4 percent (approximately 0.75 acres) consisting of native species.
- The Specific Plan shall use landscape contouring to minimize precipitation runoff.
- The Specific Plan shall maximize the amount of permeable surfaces where possible within commons site areas that are not located above subterranean parking.
- The Specific Plan shall be improved with a series of urban bioswales designed to collect surface water and provide first flush treatment prior to discharge to the local storm drain system.

Project Design Feature L.1-5: Recycled Water Measures. Actions to support the use of recycled water at the project site shall be implemented as follows:

Prior to the issuance of the project's Phase 1 demolition and grading permits, the applicant shall provide proof to the City of Los Angeles of submission of a written request for a determination from the Department of Water and Power (DWP) as to: (a) the status of the approval and construction schedule for recycled water delivery to the project site at the intersection of Olympic Boulevard and Evergreen Avenue; (b) the availability of a dedicated or identifiable source for financing the construction of the recycled water delivery (including, but not limited to, the Demand Side Management and Water Recycling Surcharge); and (c) in the event that DWP does not plan to deliver recycled water from its own city supply, an agreement between the DWP and a third party recycled water wholesaler to sell its recycled water to DWP. If prior to the issuance of Phase 1 demolition and grading permits: (1) DWP has completed and certified an EIR for the recycled water delivery (which could include, but is not limited to, an EIR for the Elysian Park Downtown Water Recycling Project); and (2) DWP has noted the availability of a

dedicated or identifiable source for financing the construction of the recycled water delivery, then the project's Phase 1 improvements (and the improvements for subsequent Phases) shall include a purple pipe recycled water system to the satisfaction of the City Engineer and the Department of Water and Power. To the extent feasible, the purple pipe system shall be designed and constructed to accommodate all irrigation and cooling tower demands. In the event that DWP fails to deliver recycled water to the project within five years after the project's Phase 1 purple pipe recycled water system is constructed, then remaining project construction phases will not be required to incorporate a purple pipe recycled water system.

If DWP's construction schedule does not indicate with certainty that their delivery of recycled water to the intersection of Olympic Boulevard and Evergreen Avenue will occur within 10 years of the issuance of the project's Phase 1 demolition and grading permits, then the project's Phase 1 improvements (and the improvements for subsequent Phases) will not be required to include a purple pipe recycled water system.

Further, should the DWP fail to respond within 90 days of Applicant's written request for determination with a final written response regarding its approval and construction schedule and source of financing, then the project's improvements will not be required to include a purple pipe water system.

Project Design Feature L.1-6: In the event that the project does not include the purple pipe system as described in Project Design Feature L.1-5, the project shall be required to off-set all increased irrigation demand to be applied to green roof plant material with a 1:1 proportionate reduction in potable water demand that would otherwise be applied to the project landscaping. A reduction of water demand may include non-potable sources such as on-site generated greywater.

b. Mitigation Measures

No mitigation measures are proposed with regard to water supply and water infrastructure.

6. Level of Significance After Mitigation

With implementation of the stated project design features, impacts on water supply and water infrastructure would be less than significant and thus, no mitigation measures would be required.