IV. Environmental Impact Analysis

L.1 Utilities and Service Systems—Water

1. Introduction

This section analyzes the Project's potential impacts on water supply and water infrastructure. The analysis describes regional water supplies and the existing water infrastructure system 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. This analysis is based, in part, on the *Water System and Supply Study* prepared for the Project by Mollenhauer (March 2014) included as Appendix M of this Draft EIR.

2. Environmental Setting

a. Regulatory Framework

(1) State

(a) California Urban Water Management Plan Act

The California Urban Water Management Planning Act (California Water Code, Sections 10610–10656) addresses several State policies regarding water conservation and the development of water management plans to ensure the efficient use of available water supplies. The California Urban Water Management Planning 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, single-dry, and multiple-dry years. Specifically, municipal water suppliers that serve more than 3,000 customers or provide more than 3,000 acre-feet per year of water must adopt an Urban Water Management Plan.

(b) California Code of Regulations

Title 24, Part 5 of the California Code of Regulations (CCR), establishes the California Plumbing Code (last updated in 2013) which became effective January 1, 2014. 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 2.0 gallons per

minute (gpm) at 80 pounds per square inch (psi). The maximum flow rate for lavatory faucets is 1.5 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 0.5 gallon per flush. Further, Section 1605.3(h) establishes State efficiency standards for non-federally regulated plumbing fittings, including commercial pre-rinse spray valves.[1]

(2) Regional and County

(a) Metropolitan Water District of Southern California

Based on the water supply planning requirements imposed on its member agencies and ultimate customers, the Metropolitan Water District of Southern California (MWD) has adopted a series of official reports on the state of its water supplies. These plans are summarized below. As described, MWD has developed plans intended to provide solutions that, when combined with the rest of its supply portfolio, will ensure a reliable long-term water supply for its member agencies.

(i) MWD's 2010 Regional Urban Water Management Plan

MWD's 2010 Regional Urban Water Management Plan addresses the future of MWD's water supplies and demand through the year 2035.[2] Based on the 2010 Regional Urban Water Management Plan, MWD has plans for supply implementation and continued development of a diversified resource mix including programs in the Colorado River Aqueduct, State Water Project, Central Valley transfers, local resource projects, and in-region storage that enables the region to meet its water supply needs. In addition, MWD has comprehensive plans for stages of actions it would undertake to address up to 50 percent reduction in its water supplies. MWD has also developed an Emergency Storage Requirement to mitigate against potential interruption in water supplies resulting from catastrophic occurrences within the Southern California region as well as working with the State to implement a comprehensive improvement plan to address catastrophic occurrences that could occur outside of the Southern California region.

(ii) MWD's Integrated Resources Plan

MWD first adopted its Integrated Resources Plan in 1996. The Integrated Resources Plan is updated every five years. The most recent Integrated Resources Plan,

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[1] *California Building Standards Commission, 2013 California Plumbing Code, Appendix L, Section 402, www.iapmo.org/Pages/2013CaliforniaPlumbingCode.aspx, accessed March 12, 2014.*

[2] *Metropolitan Water District of Southern California, The Regional Urban Water Management Plan, November 2010, www.mwdh2o.com/mwdh2o/pages/yourwater/RUWMP/RUWMP_2010.pdf, accessed March 27, 2014.*

which was adopted in 2010, demonstrates how MWD plans to develop its water resource supply portfolio out to the year 2035, including planning for hydrologic, regulatory, and other types of uncertainties.[3] Under the strategy of the 2010 Integrated Resources Plan Update, MWD will continue to develop programs to meet its reliability within its traditional core supplies, collaborate with member agencies to develop a buffer to address uncertainty, and pursue foundational actions to address other future supply vulnerabilities and uncertainties. Overall, the strategies presented in the 2010 Integrated Resources Plan Update are projected to meet the future water supply needs of Southern California, and identify the "low-regret" actions that MWD can take in order to swiftly respond to the uncertainties that exist with all water resource programs.

(iii) MWD's 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 Plan. The overall objective of the Water Surplus and Drought Management Plan is to ensure that shortage allocation of MWD's imported water supplies is not required.[4] This plan provides policy guidance to manage MWD's supplies and achieve the goals laid out in the agency's Integrated Resources Plan. The Water Surplus and Drought Management Plan separates resource actions into two major categories: Surplus Actions and Shortage Actions. The Water Surplus and Drought Management 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 of the region. The Shortage Actions of the Water Surplus and Drought Management Plan are separated 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. Conservation and water efficiency programs are part of MWD's resource management strategy through all categories.

(iv) MWD's Water Supply Allocation Plan

While the Water Surplus and Drought Management 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,

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[3] *Metropolitan Water District of Southern California, Integrated Water Resources Plan: Report No. 1373, 2010 Update, www.mwdh2o.com/mwdh2o/pages/yourwater/irp/IRP2010Report.pdf, accessed April 4, 2014.*

[4] *Metropolitan Water District of Southern California, Water Surplus and Drought Management Plan: Report No. 1150, August 1999, www.mwdh2o.com/mwdh2o/pages/yourwater/WSDM_Report1150.pdf, accessed April, 4, 2014.*

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 shortages in MWD's service area conditions (i.e., drought conditions or unforeseen cuts in water supplies).

(v) MWD's 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, State Water Project transactions, groundwater recovery, and local resources.

(b) County of Los Angeles

In August 2008, the County Board of Supervisors adopted a Resolution declaring a countywide water supply and conservation alert, which: (a) urged the County residents, businesses, local water purveyors, and cities to intensify water conservation efforts to achieve an overall reduction in water demand of 15 to 20 percent; (b) directed all County departments to evaluate water usage and immediately implement conservation measures to reduce consumption by a target amount of 10 percent by December 31, 2008, and report back to the Board of Supervisors with recommended measures to reduce consumption by an additional 10 percent; (c) urged local water purveyors and cities to accelerate and intensify public outreach campaigns; (d) urged cities to update and adopt water wasting ordinances and prepare for enforcement of the ordinances, if necessary; and (e) encouraged County residents to follow 10 easy tips to reduce their water consumption.[5] In response to this directive, the County Board of Supervisors readopted such provisions in the Los Angeles County Code, imposing water conservation requirements for the Los Angeles County area, such as prohibiting the wash down of driveways and sidewalks, limiting the hours and duration of watering any lawn or landscaping, and prohibiting water runoff into adjoining streets.[6] In addition, the Los Angeles County Code includes

[5] *Resolution of the Board of Supervisors of the County of Los Angeles, California, Declaring a Countywide Water Supply and Conservation Alert, adopted August 5, 2008.*

[6] *Los Angeles County Code, Title 11, Chapter 11.38 Water and Sewers, Part 4 Water Conservation Requirements for the Unincorporated Los Angeles County Area, previously terminated on January 1, 1993 and readopted on October 7, 2008.*

regulations for designing, installing, and maintaining water-efficient landscapes in new projects.[7]

In November 2008, the County Board adopted a Green Building Program, in part, to improve the design and construction techniques that would promote water conservation. The Green Building Standards Ordinance[8] is a component of the Green Building Program, and requires the installation of smart irrigation controllers and high-efficiency toilets. In addition, the Drought-Tolerant Landscaping Ordinance[9] provides additional standards for the design and installation of landscaping using drought-tolerant plants that require minimal use of water and limitations on turf areas. The Low Impact Development Ordinance[10] encourages the preservation of watersheds, drainage paths, water supplies, and natural resources through compliance with additional development standards identified in the Low Impact Development Standards Manual and Green Building and Sustainability Guidelines for the County of Los Angeles. If a conflict exists between provisions of the Green Building Program and other ordinances, statutes, regulations, or requirements, the County requires the stricter provision to apply.[11]

(3) Local

(a) LADWP's 2010 Urban Water Management Plan

The Los Angeles Department of Water and Power's (LADWP) 2010 Urban Water Management Plan, adopted by the Board of Water and Power Commissioners in May 2011, details LADWP's efforts to promote the efficient use and management of its water resources and provides the basic policy principles that guide LADWP's decision-making process to secure a sustainable water supply for the City of Los Angeles in the next 25 years. LADWP's 2010 Urban Water Management Plan projects a 15 percent lower water demand trend than what was projected in the 2005 Urban Water Management Plan and lays out a detailed plan to develop a sustainable water supply portfolio that includes the increase of local water supplies and water conservation from the current 12 percent to 43 percent by 2035. Based on LADWP's 2010 Urban Water Management Plan, the focus on local supplies would increase flexibility and overall water supply reliability.

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[7] *Id. Title 26, Chapter 71, Water-Efficient Landscaping.*

[8] *Id. Title 22, Chapter 22.52, Part 20, Green Building.*

[9] *Id. Title 21, Chapter 22.52, Part 21, Drought-Tolerant Landscaping.*

[10] *Id. Title 12, Chapter 12.84, Low Impact Development Standards.*

[11] *Id. Title 22, section 22.52.2200(B).*

(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 among other things droughts, environmental restrictions, and climate change. In response to these uncertainties, the City prepared and released a Water Supply Action Plan entitled *Securing L.A.'s Water Supply* dated May 17, 2008.[12] The plan serves as a template for creating sustainable sources of water for the future of the City to reduce dependence on imported supplies. The 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.

b. Existing Conditions

(1) Water Supply

LADWP is responsible for providing water to properties within the City of Los Angeles limits, including the Project Site, and ensuring that the water quality meets applicable California health standards for drinking water. Water is supplied to the City from four primary sources: the Los Angeles Aqueducts, local groundwater, MWD, and recycled water. As shown in Table IV.L.1-1 on page IV.L.1-7, in 2011, the LADWP had an available water supply of 539,282 acre-feet, of which approximately 66 percent was from the Los Angeles Aqueducts, approximately 9 percent from local groundwater, approximately 23 percent from the MWD, and approximately 1.4 percent from recycled water. These water sources are described in further detail below.

(a) Los Angeles Aqueducts

Snowmelt runoff from the Eastern Sierra Nevada Mountains is collected and conveyed to the City via the Los Angeles Aqueducts. The Los Angeles Aqueducts' supplies come primarily from snowmelt and secondarily from groundwater pumping, and can fluctuate yearly due to the varying hydrological conditions.

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[12] *City of Los Angeles Department of Water and Power, Securing L.A.'s Water Supply, www.greencities california.org/assets/water/LA_Emergency-Water-Conservation-Plan_Water-Supply-Report-2008.pdf, accessed April 10, 2014.*

Table IV.L.1-1
Los Angeles Department of Water and Power 2002–2011 Water Supply

Year	Los Angeles Aqueducts	Local Groundwater	MWD	Recycled Water	Transfer, Spread, Spills, and Storage[a]	Total
2002	179,237	85,153	401,303	1,944	-1,405	**669,042**
2003	251,340	86,341	317,774	1,759	2,528	**654,687**
2004	203,190	75,696	392,603	1,774	-2,958	**676,221**
2005	376,394	57,623	185,002	1,401	3,140	**617,280**
2006	380,235	67,299	189,975	3,893	-1,336	**642,738**
2007	127,392	88,041	438,344	3,595	1,044	**656,327**
2008	148,407	64,604	430,959	7,048	1,664	**649,354**
2009	137,261	66,998	357,005	7,570	3,052	**565,782**
2010	251,126	68,346	208,264	6,900	-938	**535,574**
2011	357,752	48,772	124,913	7,692	-153	**539,282**

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.*

Source: Los Angeles Department of Water and Power, 2012.

The City holds water rights in the Eastern Sierra Nevada where the Los Angeles Aqueducts' water supplies originate. These supplies originate from both streams and from groundwater. As indicated in Table IV.L.1-1, approximately 357,752 acre-feet of LADWP's water supplies were from the Los Angeles Aqueduct in 2011. Average deliveries from the Los Angeles Aqueduct system from 2002 through 2011 were approximately 241,233 acre-feet of water annually. Based on modeling results, LADWP projects that the average annual long-term Los Angeles Aqueducts delivery over the next 25 years is expected to be approximately 254,000 acre-feet per year and gradually decline to 244,000 acre-feet per year due to climate change impacts.[13] In addition, in the last decade, environmental considerations have required that the City reallocate approximately one-half of the Los Angeles Aqueducts water supply to environmental mitigation and enhancement projects.

[13] *Los Angeles Department of Water and Power, 2010 Urban Water Management Plan.*

(b) Groundwater

LADWP traditionally extracts groundwater from wellfields throughout the Owens Valley and local groundwater basins. Groundwater from the Owens Valley is currently accounted for in the Los Angeles Aqueduct discussion and data above. LADWP has water rights in the San Fernando and Sylmar Basins as well as two other local groundwater basins, the Central and West Coast Basins. The San Fernando, Sylmar, and Central Basins are subject to court judgments. Accordingly, pumping in the San Fernando and Sylmar Basins must be reported to the court-appointed Upper Los Angeles River Area Watermaster and pumping in the Central Basin is reported to the California Department of Water Resources, which acts as Watermaster.

LADWP has accumulated nearly 486,759 acre-feet of stored water credits in the San Fernando Basin as of October 2011.[14] 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 acre-foot annual entitlement in the basin. LADWP currently has an annual entitlement of 3,405 acre-feet from the Sylmar Basin. In addition, LADWP's annual entitlement to the Central Basin is 15,000 acre-feet.

As shown in Table IV.L.1-2 on page IV.L.1-9, from the 2010–2011 water year (October through September), the LADWP extracted 43,951 acre-feet from the San Fernando Basin, 963 acre-feet from the Sylmar Basin, and 4,536 acre-feet from the Central Basin.[15] 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 the California Department of Water Resources have programs in place to monitor wells to prevent overdrafting. LADWP's groundwater pumping practice is based on a "safe yield" operation. The 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 imports a portion of its water supplies from Northern California through the State Water Project's California Aqueduct and from the Colorado River through MWD's own Colorado River Aqueduct. As one of the 26 member agencies of MWD, LADWP purchases water from MWD to supplement LADWP water supplies from the Los Angeles Aqueducts and local groundwater. As of June 30, 2010, LADWP had a preferential right to

[14] *Los Angeles Department of Water and Power, 2012.*

[15] *Los Angeles Department of Water and Power, 2012.*

Table IV.L.1-2
Local Groundwater Basin Supply (acre-feet)

Fiscal Year (Jul-Jun)	San Fernando	Sylmar	Central
2006–2007	76,251	3,919	13,609
2007–2008	50,009	2,997	10,754
2008–2009	52,896	868	11,817
2009–2010	59,958	2,544	11,135
2010–2011	43,951	963	4,536

Units are in acre-feet.
Source: Los Angeles Department of Water and Power, 2012.

purchase 20.51 percent of MWD's total water supply.[16] As indicated in Table IV.L.1-1 on page IV.L.1-7, in 2011, LADWP received approximately 124,913 acre-feet of water from MWD. LADWP will continue to rely on MWD to meet its current and future supplemental water needs. Summaries of MWD's individual supplies, along with the challenges facing each supply and specific actions that MWD is taking to meet each of the challenges facing its water supplies, are presented below.

(i) The Colorado River

The Colorado River was MWD's original source of water upon 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). California is apportioned the use of 4.4 million acre-feet 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. Since 2003, due to increased Colorado River water use by Arizona and Nevada and droughts in the Colorado River Basin, MWD's net diversions of Colorado River water have been limited to a low of nearly 633,000 acre-feet in 2006 and a high of approximately 1,105,232 acre-feet in 2009. Average annual net deliveries for 2003 through 2010 were approximately 849,500 acre-feet, with annual volumes dependent on availability of unused higher priority agricultural water and increasing transfer of conserved water. There are various agreements and guidelines that affect the management of Colorado River water supplies, and 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. Challenges facing MWD's Colorado River

[16] *Los Angeles Department of Water and Power, 2012.*

supply include risk of future droughts in the Colorado River Basin, pending litigation, and environmental considerations. Federal and state environmental laws protecting fish species and other wildlife species also have the potential to affect Colorado River operations.

(ii) State Water Project

The State Water Project is a water storage and delivery system of reservoirs, aqueducts, power plants, and pumping plants. The main purpose of the State Water Project is to divert and store surplus water during wet periods and distribute it to areas throughout the State. MWD is one of the 29 agencies that have long-term contracts for water service from the Department of Water Resources, and is the largest agency in terms of the number of people it serves (almost 19 million), the share of the State Water Project that it has contracted to receive (approximately 46 percent), and the percentage of total annual payments made to the Department of Water Resources by agencies with state water contracts (approximately 58 percent in 2011). 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.[17]

The availability of State Water Project water supply is analyzed by the Department of Water Resources in terms of "Table A" and Article 21 water deliveries.[18] Table A deliveries represent the schedule of the maximum amount of water that water contractors to the Department of Water Resources may receive annually from the State Water Project. 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 specified conditions. The State Water Project, under a 100 percent allocation, provides MWD with 1,911,500 acre-feet of water. For calendar year 2014, the Department of Water Resources' initial allocation estimate to State Water Project contractors was set at 5 percent of contracted amounts. On January 31, 2014, the Department of Water Resources announced that its 2014 State Water Project allocation would be decreased from 5 percent to 0 percent of total contracted water deliveries to the State Water Project contractors.[19] The allocation reflects the recent precipitation conditions, existing storage in

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[17] *Los Angeles Department of Water and Power, 2012.*

[18] *All water contracts signed in the 1960s included an estimate of the date that State Water Project water would first be delivered and a schedule of the amount of water the contractor could expect to be delivered annually. That amount of water, known as the contractor's annual Table A amount, was designed to increase gradually until the designated maximum for that State Water Project contractor was reached.*

[19] *Department of Water Resources. California State Water Project, Notice to State Water Project Contractors Number 12-09, www.dwr.water.ca.gov/swpao/deliveries.cfm, accessed April 10, 2014.*

State Water Project conservation reservoirs, and State Water Project operational constraints.

The listing of several fish species as threatened or endangered under the federal and/or California Endangered Species Acts have impacted State Water Project operations and limited the flexibility of the State Water Project. Other issues, such as the decline of some fisheries in the Bay-Delta and surrounding regions and certain operational actions in the Bay-Delta, may also substantially reduce MWD's water supply from the Bay-Delta. The State Water Project operational requirements may be further modified under new biological opinions for listed species under the federal Endangered Species Act or by the California Department of Fish and Game's issuance of incidental take authorizations under the California Endangered Species Act. 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. 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.

(d) 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. In addition, the City's *Securing L.A.'s Water Supply* Plan serves as a template for creating sustainable sources of water for the future of the City to reduce dependence on imported supplies. 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. More recently, LADWP's 2010 Urban Water Management Plan details the City's efforts to promote the efficient use and management of its water resources and provides the basic policy principles that guide LADWP's decision-making process to secure a sustainable water supply for the City of Los Angeles in the next 25 years. LADWP's 2010 Urban Water Management Plan projects a 15 percent lower water demand trend than what was projected in the 2005 Urban Water Management Plan and lays out a detailed plan to develop a sustainable water supply portfolio that includes the increase of local water supplies and water conservation from the current 12 percent to 43 percent by 2035.

(e) Precipitation Conditions

According to the Department of Water Resources, with rainfall precipitation far below normal during the winter season, California's 2014 water year has been one of the driest

years in decades and follows two consecutive dry years throughout the State.[20,21] In response to the drought conditions, California Governor Edmund G. Brown Jr. declared a State of Emergency on January 17, 2014 and directed State officials to take all necessary actions to prepare for water shortages. On January 31, 2014, the Department of Water Resources announced several actions to address water shortages, including reducing the anticipated allocation of water to customers of the State Water Project as described above, notifying long-time water rights holders in the Sacramento Valley that their water rights may be reduced to 50 percent, and asking the State Water Resources Control Board to adjust requirements that hinder conservation of currently stored water.[22] In addition, the Department of Water Resources expects to install temporary rock barriers across several Delta channels in order to protect water quality in the Delta and preserve water supplies stored in upstream reservoirs. A Drought Operations Plan and Operational Forecast, prepared by several agencies, was also released on April 8, 2014 that outlines proposed actions and a range of coordinated operations of the Central Valley Project and the State Water Project from April 1, 2014 through November 15, 2014. The purposes of this plan are to operate the Central Valley Project and the State Water Project to provide for, at a minimum, essential human health and safety needs; control saltwater intrusion in the Sacramento-San Joaquin Delta; preserve enough cold water in Shasta Lake and other reservoirs to maintain cool temperatures in the Sacramento River for Chinook salmon (these water supplies may be needed to provide critical needs in 2015 if conditions remain dry); and maintain minimum protections for endangered species.

(f) Global Warming and Climate Change

Climate change has also been a 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, and increased demand for irrigation; changes in precipitation patterns that could lead to floods, lowered groundwater table, a reduction in snowpack, and decreased hydroelectric power; and changes in sea levels that could increase pressure on Delta levees.[23] Based on ongoing environmental and policy planning efforts, 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.

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[20] *A water year extends from October 1 through September 30.*

[21] *California Department of Water Resources, Water Conditions, www.water.ca.gov/waterconditions/waterconditions.cfm, accessed April 10, 2014.*

[22] *California Department of Water Resources, Breaking Drought News, www.water.ca.gov/waterconditions/index.cfm, accessed April 10, 2014.*

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

(2) Water Demand

LADWP's 2010 Urban Water Management Plan provides water supply and demand projections in five-year increments to 2035, based on projected population estimates provided by the Southern California Association of Governments. Table IV.L.1-3 on page IV.L.1-14 shows the projected water demand from the year 2015 through 2035 for the City of Los Angeles.

As shown in Table IV.L.1-3, in 2035 during average year hydrological conditions, the City's water demand is forecasted to be approximately 710,800 acre-feet per year. Use of the current demand per capita within this demand forecast provides a conservative estimate of projected future water demand to ensure that water supplies are available to meet projected demands. LADWP's 2010 Urban Water Management Plan anticipates adequate water supplies would be available to the service areas under normal, single-dry, and multi-dry year conditions through 2035.[24]

Based on water demand factors from the 2010 California Plumbing Code and sewage generation factors established by the City of Los Angeles Bureau of Sanitation, which also serve to estimate water consumption, the existing average daily domestic water demand associated with the existing uses at the Project Site is approximately 6,529 gpd, as provided in Table IV.L.1-4 on page IV.L.1-15.

(3) Water Infrastructure

Domestic and fire water service to the Project Site is provided from a 4-inch water service lateral line that connects to an 8-inch LADWP water main located in Cahuenga Boulevard East. Based on a Service Advisory Report coordinated between LADWP and the County Fire Department, included in Appendix K of this Draft EIR, the water main has a fire flow of 1,750 gpm at a residual pressure of 72 psi. The Project Site is served by two existing public fire hydrants located along the public sidewalk of Cahuenga Boulevard, west of the Project Site. Currently, the Project Site does not have a dedicated separate fire service meter, supply line, or on-site fire hydrants.

b. Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, Project impacts with regard to water supply and water infrastructure would be significant if the Project would:

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[24] *Los Angeles Department of Water and Power, 2010 Urban Water Management Plan.*

Table IV.L.1-3
City of Los Angeles Water Demand Projections Based on Hydrological Conditions
(Thousand AFY)

Hydrological Conditions	Years				
	2015	**2020**	**2025**	**2030**	**2035**
Average Year	614.8	652	675.6	701.2	710.8
Single Dry Year	651.7	691.1	716.1	743.2	753.4
	2011	**2012**	**2013**	**2014**	**2015**
Multi-Dry Year (2011–2015)	590	608.2	626.5	602.9	627.1
	2016	**2017**	**2018**	**2019**	**2020**
Multi-Dry Year (2016–2020)	647.1	661.2	675.4	644.6	665.1
	2021	**2022**	**2023**	**2024**	**2025**
Multi-Dry Year (2021–2025)	683	694.5	706.1	670.9	689.1
	2026	**2027**	**2028**	**2029**	**2030**
Multi-Dry Year (2026–2030)	707.9	720.1	732.4	696.1	715.2
	2031	**2032**	**2033**	**2034**	**2035**
Multi-Dry Year (2031–2035)	731.2	740.3	749.3	708.8	725

AFY = acre-feet per year
Source: Los Angeles Department of Water and Power, 2010 Urban Water Management Plan.

- 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; or

- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.

c. Project Design Features

The following Project Design Features would be implemented as part of the Project:

Project Design Feature L.1-1: The Project shall install new on-site water connections, where necessary, to distribute water within the Project Site.

Table IV.L.1-4
Existing Project Site Water Demand

Use	Unit	Average Daily Consumption Rate (gpd/unit)	Average Daily Water Demand (gpd)
Amphitheatre	1,196 seats	5 gpd/seat[a]	5,980
[Inside] the Ford	87 seats	5 gpd/seat[a]	435
Box office	365 sf	50 gpd/1000 sf[b]	18
Concessions Area	320 sf	300 gpd/1000 sf[b]	96
Total			**6,529**

[a] *Generation Factors are based on the 2010 California Plumbing Code.*

[b] *Water demand was calculated using the City of Los Angeles Department of Public Works sewage generation factors, which also serve to estimate water consumption.*

Source: Mollenhauer; Matrix Environmental, 2014.

Project Design Feature L.1-2: The Project shall implement water conservation features, including, but not limited to: high-efficiency toilets and urinals, auto lavatory faucets, use of "tankless" or "on demand" water heaters, drought-tolerant planting, minimal irrigation system, use of permeable surfaces, weather-based irrigation controller with rain shutoff, use of a separate water meter (or sub meter), flow sensor, and master valve shutoff for irrigated landscape areas.

d. Analysis of Project Impacts

(1) Construction

Construction activities for the Project would result in a temporary increase in water demand. Demand for water would be associated with soil compaction and earthwork, dust control, mixing and placement of concrete, equipment and site cleanup, irrigation for plant and landscaping establishment, water line testing and flushing, and other short-term related activities. These activities would occur incrementally throughout construction of the Project (from the start of construction to Project buildout) and would be temporary in nature. The amount of water used during construction would vary depending on the conditions of soils, weather, size of the construction site, and site-specific operations. It is estimated that a total of approximately 650,000 to 800,000 gallons of water could be used throughout construction of the Project. It is noted however that this increase in water demand associated with Project construction would be temporary in nature and would occur intermittently throughout construction as needed. In addition, as concluded in LADWP's 2010 Urban Water Management Plan, projected water demand for the City would be met

by the available supplies during an average year, single-dry year, and multiple-dry year through the year 2035, as well as the intervening years.

The Project would require construction of new, on-site water distribution lines to serve the proposed uses. Construction impacts associated with the installation of water distribution lines are expected to be confined to trenching in order to place the lines below surface. As discussed in Section IV.J.1, Public Services—Fire Protection, of this Draft EIR, to accommodate the required fire flow for the Project, two new connections would be provided to the existing 8-inch high pressure water main in Cahuenga Boulevard East. Vehicular and pedestrian access within the Project Site and immediately surrounding the Project Site could be affected by construction activities associated with upgrading the existing water main. However, as discussed in Section IV.K, Traffic, Access, and Parking, of this Draft EIR, during construction of the Project, a Construction Management Plan would be implemented to ensure that adequate and safe access remains available within and near the Project Site during construction activities. As part of the Construction Management Plan, provisions for temporary traffic control (e.g., flag persons) would be provided during all construction activities adjacent to public rights-of-way to improve traffic flows. In addition, prior to ground disturbance, Project contractors would coordinate with LADWP to identify the locations and depth of all lines. LADWP would also be notified in advance of proposed ground disturbance activities to avoid water lines and disruption of water service.

Based on the above, sufficient water supplies would be available to accommodate Project construction activities and, while the Project would require the construction of upgraded infrastructure facilities, the construction of such infrastructure improvements would not cause significant environmental effects. As such, construction-related impacts to water supply and infrastructure would be less than significant.

(2) Operation

(a) Water Supply

The analysis of the Project's impacts relative to water supply is based on a calculation of the Project's water demand by applying water demand rates contained in the 2010 California Plumbing Code to the proposed uses, as provided in Table IV.L.1-5 on page IV.L.1-17. As shown therein, it is estimated that the Project would have an average daily domestic water demand of approximately 17,470 gpd. When accounting for the existing total Project Site water demand of approximately 6,529 gpd, the Project would result in a net increase in average daily water demand of approximately 10,941 gpd. However, as noted in the Water System and Supply Study included in

Table IV.L.1-5
Proposed Project Site Water Consumption

Use	Unit	Average Daily Consumption Rate[a] (gpd/unit)	Average Daily Water Demand (gpd)
Amphitheatre	1,196 seats	5 gpd/seat	5,980
New Theatre	299 seats	5 gpd/seat	1,495
Flex Space	99 seats	5 gpd/ person	495
Restaurant-employees	13 employees	20 gpd/employee	260
Restaurant-meals	500 meals	12 gpd/ meal	6,000
Office and Amenities-visitors	66 people	5 gpd/person	330
Office and Amenities-employees	120 employees	20 gpd/employee	2,400
Maintenance Area	27 employees	20 gpd/employee	540
Project Site Total Water Demand at Project Buildout			**17,470**
Existing Project Site Total Water Demand			**(6,529)**
Net Increase in Water Demand			**10,941**
Net Increase in Water Demand with Reduced Flow Fixtures			**5,471[b]**

[a] *Water consumption estimates based on 2010 California Plumbing Code*

[b] *This accounts for a 50-percent reduction due to high efficiency flow fixtures that have been developed since the 2010 Plumbing Code consumption factors were established.*

Source: Mollenhauer, Water System and Supply Study, 2014.

Appendix M of this Draft EIR, since development of the water demand rates from the California Plumbing Code used to calculate the Project's water demand, most water fixtures, including those that would be implemented as part of the Project, now have reduced flow rates by 50 percent. Therefore, when accounting for typical flow rates of existing water fixtures, the water demand of the Project is estimated to be approximately 5,471 gpd or approximately 6.13 acre-feet per year (assuming constant water use throughout the year).

It is noted that the Project's estimated water demand is likely conservative as it does not account for additional water conservation features that would be implemented by the Project, including those required by the County as part of the County's Green Building Program. These water saving features, which could include updated landscaping and modern irrigation, would reduce the Project's net increase in water demand accordingly.

Based on LADWP's 2010 Urban Water Management Plan water demand projections through 2035, as shown in Table IV.L.1-3 on page IV.L.1-14, the water demand for the City in 2020 (Project buildout) during average year hydrological conditions is expected to reach

approximately 652,000 acre-feet. During a single-dry year, water demand is estimated to reach approximately 691,100 acre-feet and during a multiple-dry year period, water demand is forecasted to reach approximately 665,100 acre-feet. As concluded in LADWP's 2010 Urban Water Management Plan, projected water demand for the City would be met by the available supplies during an average year, single-dry year, and multiple-dry year through the year 2035, as well as the intervening years (i.e., 2020). The Project's estimated net increase in water demand of approximately 6.13 acre-feet per year would comprise approximately 0.0009 percent of the water demand for the City in 2020 during an average year, single-dry year, and multiple-dry year period. Therefore, the Project would be well within the available and projected water supplies for normal, single-dry, and multiple-dry years through the year 2035 and, as such, LADWP would be able to meet the water demand for the Project as well as existing and planned water demands of its future service area.

It should be noted that the water demand projections in LADWP's 2010 Urban Water Management Plan are based on demographic growth projections in the 2008 Regional Transportation Plan prepared by the Southern California Association of Governments. Since preparation of the 2010 Urban Water Management Plan, new growth forecasts have become available in the 2012 Regional Transportation Plan/Sustainable Communities Strategy. According to the Southern California Association of Governments, the 2012 growth forecast is lower than the 2008 growth forecast in terms of current (2010) estimates and future (2035) projections.[25] Therefore, the 2010 Urban Water Management Plan is based on a more conservative overall growth scenario.

Based on the above, the estimated water demand for the Project would not exceed the available supplies projected by LADWP. Thus, 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. Therefore, the Project's operation-related impacts on water supply would be less than significant.

(b) Water Infrastructure

Water service to the Project Site would continue to be supplied by LADWP for domestic and fire protection uses. While domestic water demand is typically the main contributor to water consumption, fire flow demands have a much greater instantaneous impact on infrastructure, and therefore are the primary means for analyzing infrastructure capacity.

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[25] *Southern California Association of Governments, Regional Transportation Plan 2012-2035 and Sustainable Communities Strategy, Growth Forecast Appendix, pgs. 10 and 16, adopted April 2012.*

As provided in Appendix K of this Draft EIR, with implementation of an approved automatic fire sprinkler system within all of the buildings proposed, as set forth in Project Design Feature J.1-3 included in Section IV.J.1, Public Services—Fire Projection, of this Draft EIR, the required fire flow would be 4,000 gpm at a pressure of 20 psi. Based on pressure flow reports obtained from LADWP, the existing 8-inch LADWP water main in Cahuenga Boulevard East provides a flow of approximately 1,750 gpm at a residual pressure of 72 psi. As previously described, to accommodate the required fire flow of 4,000 gpm, the Project would include two new connections to the existing 8-inch high pressure water main in Cahuenga Boulevard East. The Project would also include the installation of four private fire hydrants on-site and provide booster for all proposed hydrants to meet the minimum flow rate and pressure requirements around the Project Site. The enhanced fire system would be a dedicated separate fire service system with no shared connections to the domestic supply lines. The Project would also provide new, on-site water distribution lines to serve the proposed uses.

With implementation of the proposed water infrastructure improvements described above, the Project would not exceed the available capacity within the distribution infrastructure that would serve the Project Site. Therefore, the Project would not result in operation-related impacts to water infrastructure and impacts would be less than significant.

4. Cumulative Impacts

The Project, related projects, and growth forecasted in the City through 2020 (i.e., the Project buildout year), would cumulatively increase the demand for water, thus potentially resulting in cumulative impacts on water supplies and water infrastructure. Cumulative growth in the greater Project area through 2020 includes specific known development projects, as described in Section III, Environmental Setting, of this Draft EIR, as well as general ambient growth projected to occur.

a. Water Supply

The geographic context for the cumulative impact analysis on water supply is the LADWP service area. As discussed above, LADWP, as a public water service provider, is required to prepare and periodically update an Urban Water Management Plan to plan and provide for water supplies to serve existing and projected demands. The 2010 Urban Water Management Plan prepared by LADWP accounts for existing development within the City, as well as projected growth through the year 2035 based on demographic growth projections in the Southern California Association of Governments' 2008 Regional

Transportation Plan.[26] Additionally, under the provisions of Senate Bill 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 that reaches certain thresholds. The types of projects that are subject to the requirements of SB 610 tend to be larger projects that may or may not have been included within the growth projections of the 2010 Urban Water Management Plan. 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, Senate Bill 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. Continued efforts by LADWP to secure the reliability of water supplies in the future, combined with project-specific requirements to conduct analyses to ensure the availability of sufficient water supply to meet demand are expected to continue through 2020 (the Project's buildout year) and beyond.

As previously stated, based on LADWP's 2010 Urban Water Management Plan water demand projections through 2035, as shown in Table IV.L.1-3 on page IV.L.1-14, and the service area reliability assessment conducted by the LADWP in its 2010 Urban Water Management Plan, LADWP determined that it would be able to reliably provide water to its customers through the year 2035. As such, LADWP would be able to meet the water demand for the Project and the related projects.

Compliance of the Project with regulatory requirements that promote water conservation such as the County's Green Building Program, as well as Assembly Bill 32 which is discussed in detail in Section IV.C, Greenhouse Gas Emissions, 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 Project, the related projects, and future growth through 2020 and beyond. Therefore, cumulative impacts on water supply would be less than significant.

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[26] *As discussed above, since preparation of the 2010 Urban Water Management Plan, new growth forecasts have become available in the 2012 Regional Transportation Plan/Sustainable Communities Strategy. According to the Southern California Association of Governments, the 2012 growth forecast is lower than the 2008 growth forecast in terms of current (2010) estimates and future (2035) projections. Therefore, the 2010 Urban Water Management Plan is based on a more conservative overall growth scenario.*

b. Water Infrastructure

The geographic context for the cumulative impact analysis on water infrastructure is the vicinity of the Project Site. Development of the Project and future new development in the vicinity of the Project Site would cumulatively increase demands on the existing water infrastructure system. However, new development projects would be subject to LADWP review (or applicable jurisdiction) to assure that the existing public utility facilities would be adequate to meet the domestic and fire water demands of each project, and individual projects would be subject to LADWP requirements regarding infrastructure improvements needed to meet respective water demands, flow and pressure requirements, etc. Furthermore, LADWP, Los Angeles Department of Public Works, and the 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.

5. Mitigation Measures

As the Project would have a less than significant impact on water supply and water infrastructure during construction and operation, mitigation measures are not required.

6. Conclusion

Project-level and cumulative impacts on water supply and water infrastructure would be less than significant.