



# **WATER SUPPLY ASSESSMENT FOR THE CROSSROADS HOLLYWOOD PROJECT**

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Water Resources Section

August 2, 2016

# Table of Contents

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Table of Contents .....	2
Introduction .....	4
Findings .....	4
Proposed Project Description .....	6
Proposed Project Water Demand Estimate .....	7
Water Demand Forecast .....	11
Los Angeles Department of Water and Power (LADWP) 2015 Urban Water Management Plan .....	12
Near-Term Conservation Strategies .....	13
Long-Term Local Supply Strategies .....	16
Water Supplies .....	27
Los Angeles Aqueducts .....	28
Groundwater .....	30
Metropolitan Water District of Southern California (MWD) .....	31
Secondary Sources and Other Considerations .....	40
Summary of Water Demand and Supply Projections for 20 Years.....	41
Rates .....	43
Findings.....	43
References	

California Department of Water Resources California’s Groundwater Bulletin  
118 Update 2003

Upper Los Angeles River Area Watermaster Report, Dated December 2014

LADWP 2015 UWMP

MWD Integrated Water Resources Plan 2015 Update

MWD’s 2015 Urban Water Management Plan

California Code of Regulations Title 23. Waters, Division 2. Department of  
Water Resources, Chapter 2.7. Model Water Efficient Landscape Ordinance

City of Los Angeles Department of Public Works Bureau of Sanitation (LASAN)  
Sewer Generation Rates Table

## Appendices

- A. The City of Los Angeles Department of City Planning letter, Request for Water Supply Assessment, received on March 31, 2016, and Scope Confirmation e-mail received on June 9, 2016
- B. Water Conservation Commitment Letter
- C. Project Location Maps
- D. Adjudicated Groundwater Basin Judgments
- E. Water Supply Assessment Provisions – California Water Code Section 10910-10915
- F. MWD of Southern California (Appendix A)
- G. Water Supply Assessment Checklist

## Introduction

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Proposed major projects subject to certain requirements in the California Water Code Sections 10910-10915 require that a city or county identify any public water system that may supply water to the Crossroads Hollywood Project (Proposed Project) and request the public water system provide a Water Supply Assessment (WSA). The WSA is a determination by the water supplier that the demands associated with Proposed Project were included in its most recently adopted 2015 Urban Water Management Plan (UWMP) showing that there is an adequate 20-year water supply.

The City of Los Angeles (City) Department of City Planning (Planning Department), serving as the lead agency as prescribed by the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.), for Proposed Project, has identified the Los Angeles Department of Water and Power (LADWP) as the public water system that will supply water. In response to Planning Department's request for a WSA, LADWP has performed the assessment contained herein.

LADWP has supplied the City with a safe and reliable water supply for over a century. Over time, the City's water supplies have evolved from primarily local groundwater to predominantly imported supplies. Today, the City relies on over 85 percent of its water from imported sources. As such, LADWP has taken an active role in regional and statewide water management. The sustainability of Los Angeles' local water supplies are dependent on the City's ability to maximize water conservation, increase recycled water use, expand stormwater capture, and accomplish other local water resource goals.

WSA is prepared to meet the applicable requirements of state law as set forth in California State Water Code Sections 10910-10915. Significant references and data for WSA are from the City's 25-year water resource plan, entitled City of Los Angeles Department of Water and Power 2015 UWMP, adopted by the Board of Water and Power Commissioners (Board) on June 7, 2016. 2015 UWMP is incorporated by reference and is available for review through LADWP's Web site, [www.ladwp.com/uwmp](http://www.ladwp.com/uwmp).

## Findings

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Proposed Project is estimated to increase the total net water demand within the site by 440 acre-feet (AF) annually based on review of information submitted by Planning Department. CRE-HAR Crossroads SPV, LLC (Applicant) has committed to implement additional water use efficiency measures that are beyond those required by current law.

LADWP's WSA finds adequate water supplies will be available to meet the total additional water demand of 440 AF annually for Proposed Project. LADWP anticipates the projected water demand from Proposed Project can be met during normal, single-dry, and multiple-dry water years, in addition to the existing and planned future demands on LADWP.

WSA approval addresses the City's long-term water supply and demand forecasts to accommodate Proposed Project, and is not an approval for water service connection. A separate request shall be made to LADWP requesting an evaluation of water service connection for Proposed Project.

The basis for approving WSAs for developments is LADWP's most recently adopted UWMP. LADWP's water demand forecast, as contained in UWMP, uses long-term demographic projections for population, housing, and employment. The California Urban Water Management Planning Act requires water suppliers to develop a UWMP every five years to identify short-term and long-term water resources management measures to meet growing water demands during normal, single-dry, and multiple-dry years. If the projected water demand associated with Proposed Project was not accounted for in the most recently adopted UWMP, WSA must include a discussion with regard to whether LADWP's total projected water supplies available during normal, single-dry, and multiple-dry water years during a 20-year projection will meet the projected water demand associated with Proposed Project, in addition to LADWP's existing and planned future uses.

The City's water demand projection in 2015 UWMP was developed based on the 2012 Regional Transportation Plan (RTP) demographic projection by the Southern California Association of Governments (SCAG) using the 2010 United States (U.S.) Census for the City. 2015 UWMP concluded there are adequate water supplies to meet projected water demands through 2040. Therefore, the City's water supply projections in the 2015 UWMP are sufficient to meet the City's water demand projections based on the 2012 RTP.

Planning Department has determined that Proposed Project conforms with the use and intensity of development permitted by the City's General Plan, and that it is consistent with the demographic projection for the City from the 2012 RTP. Therefore, anticipated water demand for Proposed Project falls within UWMP's projected water supplies for normal, single-dry, and multiple-dry years through the year 2040 and is within the UWMP's 25-year water demand growth projection. This WSA can be approved based on the fact that Proposed Project's water demand falls within UWMP's projected increase in citywide water demands, while anticipating multi-dry year water supply conditions occurring at the same time.

Additionally, UWMP contains a water shortage contingency plan for multi-year dry hydrological periods. This water shortage contingency plan was implemented on June 1, 2009, when the Board adopted Shortage Year Rates, and the City Council implemented the landscape irrigation and prohibited use restrictions contained in the City's Water Conservation Ordinance (Ordinance).

The City's Water Rate Ordinance, adopted in June 1995, was last amended by the Board, effective April 15, 2016. The revised rate ordinance restructured the rates to help further promote conservation. For example, single family rates switched to a four-tier system that sends a strong price signal to deter against wasteful water use. The Board finds that the price signals contained in the Water Rate Ordinance encourage conservation and support further reduction in City-wide demand. Past and current implementation of water rate price signals and higher ordinance phases have resulted in reducing the total customer water usage, on average, by approximately 18.4 percent over the time period from June 2009 to May 2016.

## Proposed Project Description

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The following project information was obtained from Planning Department's WSA Request Letter and the scope confirmation e-mail (Appendix A):

Project Name:	Crossroads Hollywood Project
Lead Agency:	Planning Department
Planning Community:	Hollywood Community Plan

Proposed Project will redevelop an approximate 8.0-acre site of residential and commercial land uses within the Hollywood Community Plan area of the City for residential and commercial land uses. Proposed Project is generally bounded by Selma Avenue to the north, the Blessed Sacrament Catholic Church and School to the east, Sunset Boulevard to the south, and Highland Avenue to the west.

Proposed Project's site currently consists of approximately 172,573 square feet (sq ft) residential, office, commercial/retail, restaurant, surface parking, and landscape. All existing uses will be removed except for 50,000 sq ft Crossroads of the World, which will be retained and converted from office, retail, and recording studio uses to retail and restaurant uses. The existing water demand is approximately 13 acre-feet per year (AFY).

Proposed Project would develop approximately 950 new apartment and condominium units, an 308 room hotel, 11,800 sq ft of residential fitness and recreation spaces, 30,600 sq ft of hotel meeting facilities, 5,580 sq ft of hotel fitness space, 20,880 sq ft of pool/spa, 95,000 sq ft of office space, 61,800 sq ft of retail spaces, 40,000 sq ft of supermarket space, 83,200 sq ft of food service space, and various deck and terrace spaces. Proposed Project would also include approximately 1,191,339 sq ft of new subterranean parking, 31,507 sq ft of new landscaping, and a cooling tower. This scope includes 50,000 sq ft of Crossroads of the World to be retained and converted to retail and restaurant uses.

LADWP staff performed the water demand analysis and determined the net increase in water demand for Proposed Project is 440 AFY.

A subsequent revised WSA may be required if one or more of the following occurs: (1) changes in Proposed Project result in a substantial increase in water demand for Proposed Project; (2) changes in the circumstances or conditions substantially affecting the ability of LADWP to provide a sufficient supply of water for Proposed Project; or (3) significant new information becomes available which was not known and could not have been known at the time when WSA was prepared. If deemed necessary, Applicant may request a revised WSA through lead agency.

## **Proposed Project Water Demand Estimate**

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Projected total net water demand increase for Proposed Project is estimated to be 440 AF annually which includes annual water conservation. Savings due to water conservation ordinances are approximately 116 AFY, and savings due to additional voluntary conservation measures are approximately 10 AFY.

In evaluating Proposed Project's water demand, the Sewer Generation Factors (SGF), published by City of Los Angeles Department of Public Works Bureau of Sanitation (LASAN) in 2012, are applied to Proposed Project scope for calculating indoor water use. SGFs are factors of how much wastewater is generated (gallons per day) per unit (per sq ft, per dwelling unit, per seat, etc.). LASAN publishes a list of SGFs for approximately 175 different building use types in the City, and updates factors to make adjustments necessary due to water conservation efforts and increased efficiencies in new appliances and plumbing fixtures. Outdoor landscape water demand is estimated per California Code of Regulations Title 23 Division 2 Chapter 2.7 Model Water Efficient Landscape Ordinance. Historical billing records are used to establish existing baseline water demand on the property. LADWP also encouraged Proposed Project to implement additional water conservation measures above and beyond the current water conservation ordinance requirements.

The net increase in water demand, which is the projected additional water demand of Proposed Project, is calculated by subtracting the existing baseline water demand and water saving amount from the total proposed water demand.

Table I shows a breakdown of the existing and proposed new types of uses for Proposed Project, and the corresponding estimated volume of water usage with the implementation of the conservation measures for Proposed Project.

Types of use were derived from WSA request letter and the scope confirmation e-mail in Appendix A.

Table II estimates the total volume of water conservation based on conservation measures the Applicant has committed to for Proposed Project (Appendix B).

**TABLE I**  
**Crossroads Hollywood Project**  
**Calculated Total Additional Water Demand**

Existing Use <sup>1</sup>	Quantity	Unit	Existing Water Use to be Removed				
			(gpd)	(af/y)			
Residential - multi-family	80	du					
Residential - duplex	4	du					
Office	79,107	sf					
Commercial / Retail	26,690	sf					
Restaurant	475	sf					
<b>Existing to be Removed Total<sup>2</sup></b>	<b>172,573</b>	<b>sf</b>	<b>11,891</b>	<b>13.32</b>			
Proposed Use <sup>1</sup>	Quantity	Unit	Water Use Factor <sup>3</sup> (gpd/unit)	Base Demand (gpd)	Required Ordinances Water Savings <sup>4</sup> (gpd)	Proposed Water Demand	
						(gpd)	(af/y)
Residential: Apt./Condo Studio	323	du	75.00	24,225			
Residential: Apt./Condo 1 bd	146	du	110.00	16,060			
Residential: Apt./Condo 2 bd	291	du	150.00	43,650			
Residential: Apt./Condo 3 bd	190	du	190.00	36,100			
Base Demand Adjustment (Residential) <sup>5</sup>				18,710			
<b>Residential Units Total</b>	<b>950</b>	<b>du</b>		<b>138,745</b>	<b>35,933</b>	<b>102,812</b>	<b>115.17</b>
Residential Interior Amenities <sup>6</sup>	11,800	sf	0.65	7,670			
Residential Deck <sup>7</sup>	75,123	sf	0.05	3,756			
Pool	5,170	sf		486			
<b>Residential Common Total</b>				<b>11,912</b>	<b>1,286</b>	<b>10,626</b>	<b>11.90</b>
Hotel Room	<b>308</b>	<b>room</b>	120.00	36,960			
Base Demand Adjustment (Hotel) <sup>5</sup>				3,390			
<b>Hotel Room Total</b>				<b>40,350</b>	<b>4,639</b>	<b>35,711</b>	<b>40.00</b>
Hotel Meeting Facilities	30,600	sf	0.12	3,672			
Hotel Spa	8,620	sf	0.65	5,603			
Hotel Fitness Room	5,580	sf	0.65	3,627			
Pool	7,090	sf		666			
<b>Hotel Common Total</b>				<b>13,568</b>	<b>3,256</b>	<b>10,312</b>	<b>11.55</b>
Office	95,000	sf	0.12	11,400			
Retail	11,800	sf	0.025	295			
Retail <sup>8</sup>	50,000	sf	0.08	4,000			
Supermarket	40,000	sf	0.10	4,000			
Coffee Shop (Serves Prepared Food)	416	seat	25	10,400			
Restaurant: High Quality	1,123	seat	30	33,690			
Restaurant: High Turnover	1,498	seat	25	37,450			
Commercial Deck and Terrace <sup>7</sup>	3,769	sf	0.05	188			
Base Demand Adjustment (Commercial) <sup>5</sup>				1,380			
<b>Commercial Total</b>				<b>102,803</b>	<b>15,599</b>	<b>87,204</b>	<b>97.69</b>
<b>Landscaping<sup>9</sup></b>	<b>31,507</b>	<b>sf</b>		<b>2,943</b>	<b>1,378</b>	<b>1,565</b>	<b>1.75</b>
<b>Subterranean Parking<sup>10</sup></b>	<b>1,191,339</b>	<b>sf</b>	0.02	<b>783</b>		<b>783</b>	<b>0.88</b>
<b>Cooling Tower</b>	<b>5,760</b>	<b>ton</b>	36	<b>205,286</b>	<b>41,057</b>	<b>164,229</b>	<b>183.97</b>
<b>Proposed Sub Total</b>				<b>516,390</b>	<b>103,148</b>	<b>413,242</b>	<b>462.91</b>
Less Existing to be Removed Total						-11,891	-13.32
Less Additional Conservation <sup>11</sup>						-8,897	-9.97
<b>Net Additional Water Demand</b>						<b>392,454</b>	<b>gpd 439.62 af/y</b>

- <sup>1</sup> Provided by City of Los Angeles Department of City Planning in the Request for Water Supply Assessment letter and Scope Confirmation e-mail. See Appendix A.
- <sup>2</sup> The existing water demand is based on the LADWP billing data (average of approximately August 2013 - May 2016), and includes water use for the surrounding parking lots and landscape, and 50,000 sf of Crossroads of the World to be retained and converted to Retail/Restaurant uses.
- <sup>3</sup> Proposed indoor water uses are based on 2012 City of Los Angeles Department of Public Works, Bureau of Sanitation Sewer Generation Rates table available at <http://www.lacitysan.org/fmd/pdf/sfcfeerates.pdf>.
- <sup>4</sup> The proposed development land uses will conform to City of Los Angeles Ordinance No. 184248, 2013 California Plumbing Code, 2013 California Green Building Code (CALGreen), 2014 Los Angeles Plumbing Code, and 2014 Los Angeles Green Building Code.
- <sup>5</sup> Base Demand Adjustment is the estimated ordinance savings already accounted for in the current version of Bureau of Sanitation Sewer Generation Rates.
- <sup>6</sup> Interior amenities includes fitness center and recreating rooms. Square footage breakdown is not available at this time, and all interior amenities are considered to be fitness center use for a conservative water demand estimate.
- <sup>7</sup> Deck and terrace are assumed to have water use similar to lobby waiting area.
- <sup>8</sup> Water demand for the 50,000 sf of Crossroads of the World to be retained and converted to Retail/Restaurant are assumed to be all Retail for a more conservative estimate, and is based on 1996 City of Los Angeles Department of Public Works, Bureau of Sanitation Sewer Generation Rates table available in Exhibit M.2-12 at <http://www.environmentla.org/programs/Thresholds/M-Public%20Utilities.pdf>.
- <sup>9</sup> Landscaping water use is estimated per California Code of Regulations Title 23. Division 2. Chapter 2.7. Model Water Efficient Landscape Ordinance.
- <sup>10</sup> Auto parking water uses are based on City of Los Angeles Department of Public Works, Bureau of Sanitation Sewer Generation Rates table, and 12 times/year cleaning assumption.
- <sup>11</sup> Water conservation due to additional conservation commitments agreed by the Applicant. See Table II.

Abbreviations: Apt. - apartment    bd - bedroom    du - dwelling unit    sf- square feet    gpd - gallons per day    af/y - acre feet per year

<b>TABLE II</b>					
<b>Crossroads Hollywood Project</b>					
<b>Estimated Additional Water Conservation</b>					
Conservation Measures <sup>1</sup>	Quantity	Units	Water Saving Factor <sup>2</sup> (gpd/unit)	Water Saved	
				(gpd)	(af/y)
Toilet - Residential: Studio	323	du	1.21	391	0.44
Toilet - Residential: 1 Bd	146	du	1.21	177	0.20
Toilet - Residential: 2 Bd	291	du	3.03	880	0.99
Toilet - Residential: 3 Bd	190	du	4.84	920	1.03
Showerhead - Residential: Studio	323	du	1.59	514	0.58
Showerhead - Residential: 1 Bd	146	du	1.59	232	0.26
Showerhead - Residential: 2 Bd	291	du	3.98	1,157	1.30
Showerhead - Residential: 3 Bd	190	du	6.36	1,208	1.35
<b>Residential Unit Conservation Total</b>				<b>5,479</b>	<b>6.14</b>
Toilet	38	ea	4.79	182	0.20
Urinal	10	ea	3.44	34	0.04
Showerheads	11	ea	7.50	83	0.09
<b>Residential Common Conservation Total</b>				<b>299</b>	<b>0.33</b>
Toilet	308	room	1.82	559	0.63
Showerhead	308	room	2.39	735	0.82
<b>Hotel Rooms Conservation Total</b>				<b>1,294</b>	<b>1.45</b>
Toilet	45	ea	4.79	215	0.24
Urinal	13	ea	3.44	45	0.05
Showerheads	27	ea	7.50	203	0.23
<b>Hotel Common Conservation Total</b>				<b>463</b>	<b>0.52</b>
Toilet	24	ea	4.79	115	0.13
Urinal	5	ea	3.44	17	0.02
<b>Office Conservation Total</b>				<b>132</b>	<b>0.15</b>
Toilet	88	ea	4.79	421	0.47
Urinal	20	ea	3.44	69	0.08
<b>Restaurant / Bar Conservation Total</b>				<b>490</b>	<b>0.55</b>
Toilet	27	ea	4.79	129	0.14
Urinal	1	ea	3.44	3	0.00
<b>Retail / Commercial Conservation Total<sup>3</sup></b>				<b>132</b>	<b>0.15</b>
<b>Landscaping Total Conservation<sup>4</sup></b>				<b>608</b>	<b>0.68</b>
<b>Total Additional Water Conserved =</b>				<b>8,897</b>	<b>9.97</b>

<sup>1</sup> Water conservation measures agreed to by the Applicant. See Appendix B.

<sup>2</sup> Based on LADWP estimates.

<sup>3</sup> Plumbing fixture count in new Retail is estimated by applying the square footage proportions of the new Retail and total buildout Retail to the total buildout Retail plumbing fixture count.

<sup>4</sup> Landscaping water conservation is estimated per California Code of Regulations Title 23, Division 2, Chapter 2.7, Model Water Efficient Landscape Ordinance.

Abbreviations: du - dwelling unit gpd - gallons per day af/y - acre feet per year ea – each

## Water Demand Forecast

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2015 UWMP projects yearly water demand to reach 675,700 acre-feet (AF) by fiscal-year-ending (FYE) 2040 with passive water conservation, or an increase of 31.6 percent from FYE 2015 actual water demand. Water demand projections in five-year increments through FYE 2040 are available in 2015 UWMP for each of the major customer classes: single-family, multifamily, commercial/governmental, and industrial. Demographic data from the Southern California Association of Government's 2012 RTP, as well as billing data for each major customer class, weather, conservation, price of water, personal income, family size, economy, and drought conservation effect were factors used in forecasting future water demand growth.

2015 UWMP used a modified-unit-use approach to develop its service area-wide water demand projections. This methodology does not rely on individual development demands to determine area-wide growth, because such an inventory in LADWP service area in the next 25 years is only a subset of the total development potential. Therefore, the growth or decline in population, housing units, and employment for the entire service area was considered in developing long-term water projections for the City through FYE 2040. The historical water demand for a unit of customer class, such as gallons-per-day per single family, is modified to account for future changes, including water conservation, and applied to the 2012 RTP demographic projections by SCAG. This modified-unit-use-approach has proven to be a reliable forecast historically, when compared with actual consumption, excluding the effects of conservation.

UWMP is updated every five years as required by California law. This process entails, among other requirements, an update of water supply and water demand projections for water agencies.

Collaboration between LADWP and Metropolitan Water District of Southern California (MWD) is critical in ensuring that the City's anticipated water demands are incorporated into the development of MWD's long-term Integrated Water Resources Plan (IRP). MWD's IRP directs a continuous regional effort to develop regional water resources involving all of MWD's member agencies including the City. Successful implementation of MWD's IRP has resulted in reliable supplemental water supplies for the City from MWD.

State law further regulates distribution of water in extreme dry weather conditions. Section 350-354 of the California Water Code states that when a governing body of a distributor of a public water supply declares a water shortage emergency within its service area, water will be allocated to meet needs for domestic use, sanitation, fire protection, and other priorities. This will be done equitably and without discrimination between customers using water for the same purpose(s).

## LADWP – 2015 UWMP

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The California Urban Water Management Planning Act (first effective on January 1, 1984) requires every urban water supplier prepare and adopt a UWMP every five years. The main goal of UWMP is to forecast future water demands and water supplies under average and dry year conditions, identify future water supply projects such as recycled water, provide a summary of water conservation Best Management Practices (BMP), and provide a single and multi-dry year management strategy.<sup>1</sup>

LADWP's 2015 UWMP, available for reference through [www.ladwp.com/uwmp](http://www.ladwp.com/uwmp), serves two purposes: (1) achieve full compliance with requirements of California's Urban Water Management Planning Act; and (2) serve as a master plan for water supply and resources management consistent with the City's goals and policy objectives.<sup>2</sup>

A number of important changes have occurred since LADWP prepared its 2010 UWMP. The year 2012 marked the start of the current multi-year drought in California. In January 2014, Governor Jerry Brown proclaimed a drought state of emergency. In July 2014, the State Water Resources Control Board (SWRCB) implemented its Emergency Water Conservation Regulation (Emergency Regulation), as directed by Governor Jerry Brown, to take actions to reduce water use by 20 percent Statewide, which was later increased to 25 percent statewide, with adjustments to account for different climates, expected growth, investment made to create drought-resilient water supplies by different cities through October 2016. In October 2014, Mayor Eric Garcetti issued Executive Directive No. 5 (ED5) Emergency Drought Response which set goals to reduce per capita water use, reduce purchases of imported potable water by 50 percent, and create an integrated water strategy to increase local supplies and improve water security considering climate change and seismic vulnerability. Lastly, in April 2015, the Mayor's Sustainable City pLAn (pLAn) was released establishing targets for the City over the next 20 years to strengthen and promote sustainability. The pLAn included a number of water resources goals, including reduce average per capita potable water use by 20 percent from Fiscal Year (FY) 2013/14 by 2017, reduce average per capita potable water use by 22.5 percent from FY 2013/14 by 2025, reduce imported water purchases from MWD by 50 percent from 2013/14 by 2025, reduce per capita potable water use by 25 percent from 2013/14 by 2035, and expand all local sources of water so that they account for at least 50 percent of the total supply by 2035. The pLAn included a multi-faceted approach to developing a locally sustainable water supply to reduce reliance on imported water, reducing per capita water use through conservation, and increasing local water supply availability.

A number of new requirements have been added to the Urban Water Management Planning Act since completion of the 2010 UWMP, including: an extension of the submittal deadline from December 31, 2015, to July 1, 2016, a narrative description of water demand measures implemented over the past five years and future measures planned to meet 20 percent demand reduction targets by 2020, implementation of a standard methodology for calculating system water loss, a mandatory electronic filing of UWMPs, a voluntary reporting of passive conservation savings, energy intensity, and climate change, and a requirement to analyze and define water features that are artificially supplied with water.

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<sup>1</sup> *City of Los Angeles Department of Water and Power 2015 Urban Water Management Plan*, at ES-2.

<sup>2</sup> *Id.* at ES-2.

2015 UWMP projects a seven percent lower water demand trend than what was projected in the previous 2010 UWMP. It outlines plans, as described below, to provide a highly reliable water supply by FYE 2040, by implementing cost-effective conservation, recycled water, and stormwater capture programs, ultimately meeting the targets established in ED5 and pLAN, including reducing imported water purchases from MWD.

## **Near-Term Conservation Strategies**

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***Enforcing prohibited uses of water.*** Prohibited uses of water are intended to eliminate waste and increase awareness of the need to conserve water. In effect at all times, prohibited uses have been in place since the early 1990s. Under enforcement, failure to comply would be subject to penalties, which can range from a written warning for a first violation to monetary fines and water service shutoff for continued non-compliance.

***Expanding the prohibited uses of water.*** In August 2009, and again in August 2010, the City updated the Emergency Water Conservation Plan Ordinance (No. 181288) by clarifying prohibited uses of water, modifying certain water conservation requirements, and developing new phases of conservation depending on the severity of water shortages. In June 2015, the City amended Ordinance No. 181288 with the new Ordinance No. 183608. Ordinance No. 183608 clarified prohibited uses and added an additional phase to allow for outdoor watering two days a week. In April 2016, the City once again amended Ordinance No. 183608 with the Ordinance No. 184250, which defined and added fines for unreasonable uses of water. The Ordinance is expected to improve the City's ability to comply with current regulations and respond to the ongoing drought conditions. Prohibited uses in effect at all times (Phase I) include<sup>3</sup>:

- Water leaks allowed to go unattended
- Outdoor irrigation between the hours of 9:00 a.m. to 4:00 p.m.
- Outdoor irrigation that results in excess water flow leaving the property
- Outdoor irrigation during and 48 hours after rain events
- Outdoor irrigation with spray head sprinklers and bubblers for more than ten minutes per watering day per station
- Outdoor irrigation with standard rotors and multi-stream rotary heads for more than 15 minutes per cycle and up to two cycles per watering day per station
- Large landscape irrigation systems without automatic shutoff rain sensors
- Washing paved surfaces (sidewalks, walkways, driveways, or parking areas) unless using a LADWP-approved water conserving spray cleaning device
- Water for decorative fountains, ponds, or lakes unless the water is part of a recirculating system
- Installation of single-pass cooling systems in buildings requesting new water service
- Installation of non-recirculating systems in new commercial laundry facilities
- Installation of non-recirculating systems in new conveyor car washes
- Car washing with a hose, unless an automatic shut-off device is attached
- Water served to customers in eating establishments, unless requested
- Daily towel and linen service option must be offered to hotel and motel guests

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<sup>3</sup> *Id.* at 3-11.

Phase II of the Water Conservation Ordinance is currently in effect. In addition to the restrictions in Phase I, Phase II also limits landscape irrigation to three (3) days per week, Monday, Wednesday, and Friday for odd-numbered street addresses and Tuesday, Thursday, and Sunday for even-numbered street addresses. Watering times for non-conserving nozzles (spray head sprinklers and bubblers) are limited to eight minutes per watering day per station.

On January 17, 2014, with California facing water shortfalls in the driest year in recorded state history, Governor Jerry Brown proclaimed a Drought State of Emergency. Local urban water suppliers and municipalities were called upon to implement their local water shortage contingency plans immediately, and Californians were encouraged to reduce their water usage by 20 percent. For the City, Phase II restrictions of the Water Conservation Ordinance were implemented in August 2010, and remain in effect today.

SWRCB, through Resolution No. 2014-0038, adopted an emergency regulation for statewide urban water conservation. This SWRCB emergency regulation is intended to reduce outdoor urban water use by prohibiting and imposing fines on certain wasteful uses, such as: washing down sidewalks and driveways; using hoses without shut-off nozzles to wash motor vehicles; and using potable water in fountains and water features that do not include recirculation systems. The regulation also requires large water agencies to activate Water Shortage Contingency Plans to a level where outdoor irrigation restrictions are mandatory. SWRCB resolution was adopted on July 15, 2014, and the emergency regulation went into effect on July 28, 2014.

On April 1, 2015, with California's depleted water supplies and record low snowpack in the Sierra Nevada Mountains, Governor Jerry Brown through Executive Order B-29-15 directed SWRCB to impose further restrictions to achieve a statewide reduction in potable urban water usage of 25 percent through February 28, 2016, compared to water used in 2013. On May 5, 2015, SWRCB adopted a revised mandatory emergency regulation that went into effect on May 15, 2015. The 2014 adopted emergency regulation will continue and include new prohibitions, such as: irrigating turf or ornamental landscapes during and 48 hours following measurable precipitation, restaurants and other food service establishments can only serve water to customers on request, and operators of hotels and motels must provide guests with the option of choosing not to have towels and linens laundered daily and prominently display notice of this option. In addition to the aforementioned water use prohibitions, urban water suppliers are required to limit customers' outdoor irrigation and notify customers about detected leaks that are within the customers control so necessary repairs can take place. It also required urban water suppliers to achieve a specific water conservation goal based on their previous water usage, ranging from four percent to 36 percent, and LADWP was required to reduce its water use by 16 percent compared its 2013 usage level. From June 2015 to May 2016, LADWP met the state mandated reduction goal and saved 16.1 percent cumulatively compared to the 2013 usage level. On February 2, 2016, SWRCB extended the emergency regulations through October 2016, but allowed urban water suppliers to adjust their conservation standard based on hotter climates and other factors. LADWP's new conservation standard is 14 percent. On May 18, 2016, SWRCB further revised the emergency conservation regulations in consideration of improved hydrologic conditions. The prior percentage reduction-based water conservation standard was replaced by a localized "stress test" approach, which requires local water agencies to ensure a three-year supply under three more dry years like the state experienced from 2012 to 2015. Water agencies

that would face shortages under three additional dry years are required to meet a conservation standard equal to the amount of shortage. SWRCB will, by late summer 2016, re-consider conservation standards for each water supplier, including LADWP, that submits an assessment of its water supply projection for the next three years.

On October 14, 2014, Mayor Eric Garcetti issued ED5, which directed that the City achieve the following water resources related goals: a 20 percent reduction in per capita potable water consumption by 2017, a reduction in LADWP purchase of imported potable water by 50 percent by 2024, and creation of an integrated strategy that increases local water supplies and improves water security in the context of climate change and seismic vulnerability. 2015 UWMP includes existing plans by LADWP to develop local water supplies to reduce reliance on purchased water in the future. These goals include increased stormwater capture, groundwater clean-up, recycled water, and conservation. Most significant among them is an increased goal for conservation. As of the end of May 2016, City's per capita potable water consumption has been reduced to 104 gallons per capita per day, which equates to a 20 percent reduction compared to the baseline of fiscal year ending 2014 and is on track to meet ED5 goal of a 20 percent reduction in per capita potable water consumption by 2017. Continued water conservation is critical to maintaining this savings up to the Mayor's January 1, 2017 target date. Achieving ED5 goals of reduction in per capita potable water use will reduce City's reliance on imported water while providing drought-proof resource that is not subject to weather conditions.

Among the actions required by ED5 that have been implemented are the following:

- Increase rebates for rain barrels, including interconnection piping and control systems, to \$100 per barrel.
- Increase LADWP's California Friendly Landscape Incentive rebate funding to \$1.75 per square foot.

In addition to mandatory action items including those listed above, ED5 also calls for residents to:

- Voluntarily reduce their outdoor watering from three to two days.
- Replace turf lawns with native and climate-appropriate landscaping during the optimal Fall/Winter planting season, utilizing LADWP rebates for turf removal.
- Replace any remaining high water use plumbing fixtures and appliances with low-flow fixtures and appliances using consumer rebates provided by LADWP.
- Ensure swimming pools have covers to reduce water evaporation.

ED5 goals were later enhanced/modified by the Mayor's pLAn in April 2015. Strategies under pLAn sought to execute key conservation steps outlined in ED5 as well as expand the scope and financing for conservation programs and incentives.

***Extending outreach efforts.*** Over the last several years, LADWP has expanded conservation outreach and education. Some activities to promote conservation include: increased communication with ratepayers through Twitter, Facebook, newspapers, radio, television, bus benches/shelters, and movie theaters, among other types of media; outreach to Homeowner Associations and Neighborhood Councils; distribution of hotel towel door

hangers and restaurant table tent cards; and ramping up marketing of expanded water conservation incentive and rebate programs.

On April 9, 2015, the new “Save the Drop” Water Conservation Outreach Campaign was launched. This campaign is a partnership between LADWP and the Mayor’s Office. Outreach materials include new public service announcements, radio spots, event handouts, and signage on the sides of LASAN trucks. The campaign has partnered with celebrities such as Steve Carrell, Jaime Camil, and Moby for public service announcements airing on TV, cinema and radio.

**Encouraging regional conservation measures.** LADWP has worked with MWD to encourage all water agencies in the region to promote water conservation and adopt water conservation ordinances which include prohibited uses and enforcement.

## **Long-Term Local Supply Strategies**

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In April 2015, the Mayor released the City’s first ever Sustainable City pLAN that focuses on sustainability, with special focus on the environment, the economy, and equity. The pLAN enhances ED5 goals, and incorporates water savings goals of reduction in per capita potable water by 20 percent by 2017, by 22.5 percent by 2025, and by 25 percent by 2035. The pLAN goals also include a reduction in imported water purchases from MWD by 50 percent from 2013/14 levels by 2025 and expansion of all local sources of water so that they account for at least 50 percent of the total supply by 2035. The pLAN includes specific strategies and desired outcomes for conservation, recycled water, and stormwater capture. Some of the strategies to meet these goals include investments in state-of-the art technology, rebates and incentives promoting water-efficient appliances, tiered water pricing, Technical Assistance Program for business and industry, and large landscape irrigation and efficiency programs.

### **1.0 Increase Water Conservation Through Reduction of Outdoor Water Use and New Technology**

#### Goal

Increase water conservation savings to achieve ED5 and pLAN water conservation goals by cutting back on outdoor water use, expanding rebates and incentives, improving water efficiency at public facilities, and enhancing savings through review of new developments. LADWP plans to achieve additional water conservation savings of 108,100 AFY during average years and 143,500 AFY during single/multi-dry years by year 2040<sup>4</sup>.

#### Action Plan

**Conservation Rebates and Incentives.** LADWP is continuing to expand rebates and incentives for homeowners and business owners to encourage them to purchase water-saving technology. Rebate and incentive programs include the following: Commercial Rebate Program, Residential Rebate Program, Direct Install Partnership Program, and Technical Assistance Program. In addition, as part of the City’s ongoing effort to encourage customers to adopt active water conservation measures (i.e., measures that can help customers

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<sup>4</sup> *Id.* at 11-11 to 11-13.

conserve water on a daily basis without thinking about it) in their homes and businesses, LADWP continues to distribute water-saving bathroom and kitchen faucet aerators and shower heads free-of-charge. In an effort to reduce outdoor water use, LADWP launched the California Friendly Landscape Incentive Program (Program) in 2009. Between November 1, 2014, and July 9, 2015, this Program provided rebates for turf removal to residential customers of \$3.75 per sq ft for the first 1,500 sq ft and \$2.00 per sq ft with no cap thereafter, and to commercial customers of up to \$3.75 per sq ft. MWD is no longer offering turf removal incentives to new applicants, effective July 9, 2015, because available funding has been fully allocated.

LADWP has relaunched the Program to continue a utility-sponsored rebate program for its customers. Effective July 15, 2015, residential customers are eligible to receive a rebate of \$1.75 per sq ft for 1,500 sq ft maximum, while commercial customers are eligible for a rebate of \$1.00 per sq ft for the first 10,000 sq ft and \$0.50 per sq ft thereafter up to 43,560 sq ft maximum.

Some highlights from the list of LADWP's numerous water conservation accomplishments are:

- LADWP's Water Conservation Program has achieved a total cumulative hardware water savings of over 118,000 AFY, mainly through installation of conservation devices subsidized by rebates and incentives, since the inception of the program in FYE 1991 to FYE 2015 .
- Water conservation achievements have resulted in Los Angeles using just as much as it did 45 years ago despite a population increase of over one million people.
- California Friendly Landscape Incentive Program – In total (Residential and Commercial Turf removal), LADWP has removed over 31 million sq ft of turf, saving over one billion gallons of water per year.
- LADWP's 100-percent volumetric tiered rate structure has been providing financial incentives to all customers for efficient water use since 1993.
- Water Meter Replacement Program started in 2006 and is ongoing. The current program goal is to replace 25,000 meters per year out of approximately 698,000 existing small meters. This program provides customers with greater accuracy in metering water use and a higher degree of accountability for water that is delivered by the City's distribution system.
- Technical Assistance Programs (TAP) for business and industry have been created to provide incentives for retrofitting water-intensive industrial equipment with high efficiency devices. A large effort is currently being expended using TAP to increase water-efficiency of commercial cooling towers and expand the program for small business participation.

**Action by Public Agencies.** LADWP assists City Departments and other public agencies in leveraging incentive funds to retrofit their facilities with water-efficient hardware. Significant accomplishments include the following highlights:

- In an effort to reduce water waste and identify areas of potential water conservation, LADWP provided on-site water audit training for the City's Department of General Services (GSD) plumbers, Department of Recreation and

Parks (RAP) landscapers and Port of Los Angeles (POLA) staff, and conducted nearly 500 facility audits.

- In January 2009, a Memorandum of Understanding (MOU) was signed between LADWP and GSD to install 875 water-efficient urinals and 325 high-efficiency toilets in City facilities.
- Ten high-use City facilities have been retrofitted with water-efficient toilets, urinals, and faucets saving approximately 23 AFY. Locations include City Hall, City Hall East, Pershing Square, and LADWP headquarters.
- Utilizing a \$3 million per year grant from LADWP, RAP has retrofitted 23 parks with California Friendly landscape and water-efficient irrigation. Through this MOU, RAP completed the Los Feliz Golf Course project in July 2014. Golf course improvements include a fully automated recycled water system, and six acres of grass have been replaced with California Friendly landscaping. Annually 5.5 million gallons of water will be saved due to the changes.

***Enhancing Conservation through New Developments.*** LADWP continues to work with the City's Green Building Team to pursue desired changes in local codes and standards to promote water efficiency in new construction projects and major building renovations. One of the significant accomplishments was the approval of the Water-Efficiency Requirements Ordinance No. 180822 by the City Council, which modifies City Municipal Code to establish new requirements for water conservation in construction of new buildings, and the installation of new plumbing fixtures in existing buildings to minimize the effects of any water shortages on the customers of the City, effective December 1, 2009. Additional conservation measures are also required through the following regulations which were effective January 1, 2014: 2013 California Plumbing Code, 2013 California Green Building Code (CALGreen), 2014 Los Angeles Plumbing Code, and 2014 Los Angeles Green Building Code. On April 8, 2015, the California Energy Commission adopted new efficiency standards for toilets, faucets and other appliances effective January 1, 2016. Also, on July 15, 2015, in response to Governor Jerry Brown's Executive Order B-29-15, the California Water Commission approved the revised Model Water Efficient Landscape Ordinance, which reduces the maximum amount of water allowed from the 2009 version of the ordinance. The California Department of Water Resources (DWR) estimates that a new home will use 20 percent less landscape water than allowed by the 2009 ordinance, and commercial landscape will cut water use by 35 percent. Also, Ordinance No. 184248, *Green Building Codes Revision, Use of Greywater Systems, Water Conservation Measures*, became effective June 6, 2016, and mandates a number of new fixture requirements and methods of construction for plumbing and irrigation systems. California Plumbing Code, Los Angeles City Plumbing Code and amending ordinances apply to all newly constructed buildings, additions and alterations whenever new fixtures are installed in existing buildings. CALGreen, the LA Green Building Code and the amending ordinances also apply to new construction projects, but are limited to additions and alterations to existing buildings that either increase the building's conditioned volume or have a valuation of \$200,000 or more. For this development, all requirements above resulted in savings of approximately 116 AFY.

In addition, the City adopted Ordinance No. 181899, also known as the "Low Impact Development" Ordinance, and Ordinance No. 183833, entitled "Stormwater and Urban Runoff Pollution Control." The purpose of these Ordinances includes rainwater harvesting and stormwater runoff management, water conservation, and recycled water reuse and gray

water use. Ordinance No. 181899 was effective as of November 14, 2011, and Ordinance No. 183833 was effective October 3, 2015.

**Future Programs<sup>5</sup>.** In December 2014, LADWP started its Home Water Use Report Pilot Study, which provides 72,000 single family customers bi-monthly home water use reports on their water usage, statistics on how they compare to similar households with average and efficient water use, and customized water saving tips and rebate recommendations. The pilot study group also has access to online on historical water use, estimated breakdown of how the customer is using their water, and additional information on how to save water in their homes. Upon completion of the pilot study by the end of 2017, LADWP will analyze results to determine the savings potential and cost-effectiveness of the program, which will assist LADWP in planning a long-term program that targets the entire single family customer sector.

Also, LADWP is currently working on pilot projects to test installation of Advanced Metering Infrastructure, which is the use of radio-based technology that would provide for two-way communication between water meters and LADWP's system. The Advanced Metering Infrastructure would provide real-time water meter data to both the end user and LADWP, which would allow LADWP to find leaks at an earlier stage and reduce non-revenue water losses. It would also allow customers to determine their water use more often than a traditional bi-monthly or monthly bill, and motivate them to proactively increase conservation sooner rather than after they receive their bill. Customers can also receive instant alerts if their usage is abnormally high.

**LADWP Water Conservation Potential Study<sup>6</sup>.** In fall of 2014, LADWP initiated the Water Conservation Potential Study, the largest and most comprehensive conservation study in the U.S. The study will provide a better understanding of how historical water conservation investment efforts have impacted existing water use efficiency and device saturation levels and help LADWP prioritize future water conservation investments in the City by identifying remaining water conservation opportunities to increase City's water use efficiency into the future. Phase 1 of the study estimated conservation potential, and data from extensive and comprehensive residential surveys were used to determine the current saturation of conserving devices and practices. For example, preliminary study results show that 80 percent of single family homes in LADWP have high efficiency toilets, indicating that toilet rebate programs are reaching a saturation threshold. For non-residential sectors, a combination of previous studies conducted by both LADWP and MWD were used, as well as expert judgement from water conservation professionals with substantial experience in commercial and industrial water use and efficiency. Phase 2, currently ongoing, will incorporate results from a comprehensive water survey of 100 City-owned facilities. City-owned facility water surveys are still being fully analyzed and will be incorporated into a revised conservation potential that will be presented in the final report.

Initial results of LADWP Water Conservation Potential Study show that the additional, naturally occurring water conservation potential, post FYE 2015, will reach approximately 71,000 AFY by FYE 2040. Naturally occurring savings represent conservation from natural replacement, new development adhering to building/plumbing codes, and ordinances for landscape water use. With increased LADWP funding for conservation programs, possibly requiring a level double of current program levels, conservation potential may increase to a

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<sup>5</sup> *Id.* at 3-33.

<sup>6</sup> *Id.* at 3-34.

cost-effective maximum potential of approximately 120,000 AFY by FYE 2040, inclusive of the 71,000 AFY of naturally occurring conservation. The maximum achievable conservation level for FYE 2040, inclusive of and beyond cost-effective maximum potential, is projected to be 218,000 AFY.

## 2.0 Water Recycling

LADWP 2015 UWMP identifies the goal of delivering 75,400 AFY by 2040 to off-set imported water.<sup>7</sup> This will increase recycled water use in the City more than six-fold as a percentage of supply, from the current two percent to 13 percent by 2040. Some of the examples of the steps the City is taking in order to achieve this goal are listed below. Other projects not listed below will also contribute to recycled water use in City's service area.

**Recycled Water Master Planning (RWMP).** In 2012, LADWP completed a three-year RWMP. RWMP documents guide near-term recycled water planning through 2035, as well as long-term recycled water planning for up to 50 years beyond the 2035 horizon. RWMP documents include an evaluation of recycling alternatives that integrate two strategies to increase recycling: Groundwater Replenishment (GWR), and non-potable reuse (NPR). GWR project will replenish San Fernando Basin (SFB) with up to 30,000 AFY of recycled water. NPR projects will increase NPR recycled water use to 45,400 AFY by 2040 by increasing deliveries to irrigation and industrial customers throughout the City.

**pLAN.** The Mayor's Sustainable City pLAN established goals to increase recycled water use by expanding recycled water by an additional 6 million gallons per day by 2017 at Terminal Island Water Reclamation Plant, converting 85 percent of public golf courses to recycled water, developing a strategy to convert the City's lakes to recycled water and implement a pilot project, and expanding recycled water production, treatment, and distribution to incorporate indirect potable reuse and direct potable reuse.<sup>8</sup>

**GWR Environmental Documentation.** In September 2013, City launched the environmental review process for the GWR project by issuing a notice of preparation of a Draft Environmental Impact Report (EIR) and releasing an Initial Study for public review. City released the Draft EIR for public review on May 12, 2016. This project would replenish SFB with up to 30,000 AFY of purified recycled water from the Donald C. Tillman Water Reclamation Plant (DCTWRP). Achieving this replenishment goal would entail operating DCTWRP at the plant's full existing capacity to treat up to 80 million gallons per day of wastewater.

**Harbor Refineries Pipeline Project.** Approximately 85 percent of the project's 40,400 feet of recycled water piping has already been installed in the Harbor Area. This piping will convey recycled water to potential industrial and irrigation customers and is anticipated to be completed in 2017. LADWP is aggressively working with the large industrial customers in the Harbor area to get on recycled water once available.

**Elysian Park Water Recycling Project.** The Elysian Park Water Recycling Project will not only irrigate the Elysian Fields Park and parts of the Elysian Park neighborhood, but also provide increased supply and reliability to the recycled water system overall. Project

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<sup>7</sup> *Id.* at 4-27.

<sup>8</sup> *Id.* at 4-26.

proposes the installation of a nearly two miles of pipeline, two pump stations, and a one or two million gallon storage tank. Its construction will ensure dependable service to meet Los Angeles' growing demand for recycled water in the Metro area. Project will include demolition of the existing 500,000 gallon tank at Elysian Park and install separate new potable water pipelines for restrooms and drinking fountains in the park. Recycled water will be supplied from the Los Angeles-Glendale Water Reclamation Plant. Anticipated project completion is 2021.

***Downtown Water Recycling Project.*** The Los Angeles-Glendale Water Reclamation Plant will supply recycled water for the Downtown Water Recycling Project. Project proposes installation of up to 86,500 linear feet of 16-inch purple pipe into and through Downtown Los Angeles. The project will supply up to 2,600 AFY (847 million gallons) of recycled water for non-potable demands – irrigation and industrial uses. Potential anchor customers include University of Southern California and Matchmaster. Anticipated project completion is 2021.

***Recycled Water Outreach.*** The City developed RWMP documents with input from stakeholders through ongoing outreach activities beginning in 2009, including interaction with the Recycled Water Advisory Group (RWAG) and key stakeholders. Presentations were given to elected official, Kindergarten-12 grade students, and Neighborhood Councils and community groups. RWAG, made up of approximately 70 stakeholders representing neighborhood councils, environmental groups, business organizations, civic groups, and other interests has recently been integrated into the One Water L.A. Stakeholder Group. They provide the City with input and feedback on many water related issues including the water recycling program. The One Water L.A. Stakeholder Group continues to participate in workshops, facility tours, and update sessions, and provide insightful feedback to the City as projects are implemented.

### **3.0 Enhancing Stormwater Capture**

Stormwater runoff from urban areas is an underutilized resource. Within the City, the majority of stormwater runoff is directed to storm drains and ultimately channeled into the ocean. Unused stormwater reaching the ocean carries with it many pollutants that are harmful to marine life. In addition, local groundwater aquifers that should be replenished by stormwater are receiving less recharge than in the past due to increased urbanization. Urbanization has increased the City's hardscape, which has resulted in less infiltration of stormwater and a decline in groundwater elevations. The estimated current stormwater capture in the City is approximately 64,000 AFY. UWMP projects to double the amount of stormwater capture under a conservative scenario. Centralized stormwater capture projects will increase stormwater capture by approximately 35,000 AFY by year 2035.<sup>9</sup> Centralized stormwater capture projects are large-scale operated projects that are designed specifically to infiltrate large amounts of runoff into underlying groundwater aquifers. Distributed stormwater capture projects, such as dry-wells and cisterns, will also provide 33,000 AFY of additional stormwater capture and infiltration/reuse in the SFB, for a total of 68,000 AFY including centralized capture by year 2035.<sup>10</sup> Distributed stormwater/runoff capture refers to capturing localized dry and wet weather runoff.

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<sup>9</sup> *Id.* at 7-10.

<sup>10</sup> *Id.* at 7-10.

The Stormwater Capture Master Plan defines stormwater capture targets over the next 20 years in five-year increments to year 2035, and identifies future centralized stormwater capture projects and program types for distribution stormwater capture such as on-site infiltration, on-site direct use, green streets, sub-regional infiltration, and sub-regional direct use. LADWP began its initial research for the Stormwater Capture Master Plan in the fall of 2013 and completed a final plan in late 2015. Stormwater Capture Master Plan goals were integrated into LADWP's 2015 UWMP.

Specific strategies under the Mayor's pLAN to increase stormwater capture include identifying funding mechanisms to implement the Enhanced Watershed Management Plans necessary for MS4 permit compliance, expanding use of permeable pavement sites and green streets (e.g., bioswales, infiltration cut-outs, permeable pavement, and street trees), and expanding the Rain Barrel Program.

UWMP projects that there will be a minimum of 15,000 AFY of increased groundwater pumping in SFB due to water supply augmentation through centralized stormwater infiltration by year 2040. Anticipating that stored groundwater will rebound in response to enhanced groundwater replenishment, LADWP will work with the Upper Los Angeles River Area Watermaster to continue observing actual water levels and re-evaluate basin safe yield to allow additional increases in groundwater production over time as SFB elevations rebound.<sup>11</sup>

In addition, development has encroached onto waterway floodplains requiring the channelization of these waterways that once recharged the groundwater aquifers with large volumes of stormwater runoff. When the floodplains were undergoing rapid development, LADWP and the Los Angeles County Flood Control District reserved several parcels of land for use as spreading facilities. These facilities are adjacent to some of the largest tributaries of the Los Angeles River, and the Pacoima and Tujunga Washes.

During average and below average years, these spreading facilities are very effective at capturing a large portion of the stormwater flowing down the tributaries. However, they are incapable of capturing a significant portion of the flows during wet and extremely wet years. Weather patterns in Los Angeles are highly variable, with many periods of dry years and wet years. Some climate studies predict that these patterns may become more extreme in the future.

LADWP is currently partnering with other government and non-governmental agencies in various stormwater enhancement studies and projects that include the following:

### **Completed Centralized Projects**

Implemented centralized projects have increased the amount of stormwater captured by an average of 10,600 AFY since 2013. Below is a sample of recently implemented centralized projects:

- **Sheldon-Arleta Gas Management System**  
Completed in 2009. Scope included the installation of a methane gas abatement system mitigating methane migration during groundwater recharge operations at

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<sup>11</sup> *Id.* at 7-29.

Tujunga Spreading Grounds. Project increases regional annual average stormwater recharge by 4,000 AFY.

- **Big Tujunga Seismic Retrofit Project**  
Completed in 2012. Scope included the retrofit of the Big Tujunga Dam to meet state seismic and spillway requirements and increase the reservoir's storage capacity. Project increases regional annual average stormwater capture by 4,500 AFY.
- **Hansen Spreading Grounds Upgrade**  
Completed in 2013. Scope included combining and deepening the spreading basins as well as upgrading the intake structure to increase recharge capacity. Project increases regional annual average stormwater recharge by 2,100 AFY.

### Completed Distributed Projects

LADWP's already implemented distributed projects that have increased the amount of stormwater captured by an average of 333 AFY. Below is a sample of recently implemented distributed projects:

- **Sun Valley Park Stormwater Infiltration Project**  
Completed in 2010. Scope included installing a stormwater pretreatment system, infiltration gallery, and retention system for infiltration. Project increases regional annual average stormwater capture by 30 AFY.
- **Garvanza Park Stormwater Capture Use and Infiltration Project**  
Completed in 2012. Scope included installing a stormwater pretreatment system, infiltration gallery, and retention system for use at the Garvanza Park. Project increases regional annual average stormwater capture by 51 AFY.
- **Elmer Avenue Neighborhood Green Street/Elmer Paseo Green Alley Stormwater Infiltration Projects**  
Completed in 2011 and 2013. Scope for Elmer Avenue Green Street (completed in 2011) included installing stormwater underground retention infiltration system under the street, and vegetated swales and rain gardens in the parkway and private property. Scope for Elmer Paseo Green Alley (completed in 2013) included installing underground retention infiltration system and vegetated swales to increase stormwater capture. Combined projects increase regional annual average stormwater capture by 41 AFY.
- **North Hollywood Alley Retrofit BMP Demonstration Project**  
Completed in 2013. Scope included retrofitting four alleys with pervious surfaces to facilitate stormwater infiltration. Project increases regional annual average stormwater capture by 29 AFY.
- **Glenoaks-Sunland Stormwater Infiltration Project**  
Completed in 2013. This project included construction of dry wells and parkway infiltration swales along a portion of the sidewalks of Glenoaks Boulevard which currently have no storm drains. Project increases regional annual average stormwater capture by 28 AFY.

- **Woodman Avenue Median Stormwater Infiltration Project**  
Completed in 2014. Scope included replacing an existing concrete median with vegetated swales and an underground retention system for infiltration. Project increases regional annual average stormwater capture by 55 AFY.
- **Hollywood/Los Angeles Beautification Stormwater Capture Project**  
This is a demonstration project to encourage stormwater capture. The City of Los Angeles Department of Public Works, Bureau of Street Services and LASAN will provide in-kind design services, while the Sun Valley Beautiful Committee, Council District 6, and the Los Angeles Unified School District (LAUSD) are project sponsors and partners. Project increases regional annual average stormwater capture by six AFY.
- **Sun Valley Economic Development Administration Public Improvement Project**  
Completed in 2016. Scope included the installation of 46 dry wells within the public right of way in an area with limited storm drainage. Project increases regional annual average stormwater capture by 93 AFY.

### **Future Centralized Projects**

Within the next five years, the following centralized projects are expected to be implemented that will provide an estimated 25,279 AF of increased stormwater capture annually. Below is a short description of these future projects:

- Big Tujunga Dam Sediment Removal Project
- Pacoima Dam Sediment Removal Project
- Tujunga Spreading Grounds Upgrade
- Lopez Spreading Grounds Upgrade
- Branford Spreading Basin Upgrade
- Pacoima Spreading Grounds Upgrade
- Valley Generating Station Stormwater Capture Project
- Whitnall Highway Power Line Easement Stormwater Capture Project
- Rory M. Shaw Wetlands Park Project (Strathern Pit)
- Bull Creek Stormwater Capture Project
- Canterbury Power Line Easement Stormwater Capture Project
- East Valley Baseball Stormwater Capture Project
- Fernangeles Park Stormwater Capture Project
- Riviera County Club Stormwater Capture Project
- Penmar Water Quality Improvement Project

### **Future Distributed Projects**

Within the next five years, the following distributed projects are expected to be implemented that will provide an estimated 1,659 AFY of increased stormwater capture. Below is a short description of these future projects:

- Laurel Canyon Boulevard Green Street Stormwater Infiltration Project
- Burbank Boulevard Stormwater Capture Project
- Arundo Donax Removal Project
- LAUSD Conserving for Our Kids Program
- Victory-Encino Stormwater Infiltration Project
- Victory-Goodland Median Stormwater Capture Project
- Glenoaks-Nettleton Stormwater Infiltration Project
- Van Nuys Blvd Median Stormwater Capture Project
- Branford Street – Laurel Canyon to Pacoima Wash Stormwater Capture Project
- Great Street – Lankershim Boulevard (Chandler to Victory) Project
- Great Street – Van Nuys Boulevard (Laurel Canyon to San Fernando) Project
- Glenoaks and Filmore Stormwater Capture Project
- Agnes Ave – Vanowen to Kittridge Stormwater Capture Project
- Water LA Phase 2
- Whitnall Gardens Project
- Great Street – Reseda Boulevard – Plummer to Parthenia Project
- Great Street – Hollywood Avenue – La Brea to Gower Project
- Great Street – Western Avenue – Melrose to 3<sup>rd</sup> Project
- Maclay Middle School – LAUSD Project
- Valley Center Stormwater Capture Project
- Northridge Middle School Project
- Tyrone Yard – New LADWP Valley Center Project
- Van Nuys Blvd Median Stormwater Capture Project

#### **4.0 Accelerating Clean-Up of SFB**

Over 70 percent of LADWP groundwater production wells in SFB have been impacted by contamination caused by improper storage, handling and disposal of hazardous chemicals used in the aircraft manufacturing industry, as well as commercial activities associated with automobile and equipment repair, dry cleaners, paint shops, chrome plating, textile manufacturing and fuel storage and dispensing dating back to the 1940s.

Since the 1980 discovery of volatile organic compound (VOC) contamination of groundwater in SFB, LADWP has been working with state and federal agencies to contain and remediate man-made contaminants in SFB. Chlorinated solvents such as trichloroethylene (TCE), perchloroethylene (PCE) and carbon tetrachloride account for the majority of this groundwater contamination.

In 2009, LADWP began an \$11.5 million, six-year study and development of a comprehensive remediation and cleanup strategy for all groundwater basin contamination in SFB. This study was completed in February 2015.<sup>12</sup>

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<sup>12</sup> *Id.* at 6-9.

## ***Development of State-of-the-Art Groundwater Basin Remediation Facilities***

- Based on the available groundwater quality information, a groundwater basin remediation complex consisting of centralized as well as localized/well head remediation facilities will be needed for public and environmental benefits as well as to prevent further loss of groundwater.
- Design and construction of the groundwater basin remediation facilities is estimated to cost approximately \$600 million, and operation and maintenance is estimated to cost an additional \$50 million per year.
- Remediation utilizing only the existing United States Environmental Protection Agency (USEPA) North Hollywood Operable Unit (NHOU) 2nd Interim Remedy (NHOU2IR) is anticipated to take more than 200 years. In addition, NHOU2IR containment zone covers a very small portion of SFB.

## ***Groundwater and Treatment System Monitoring***

- In order to fully characterize SFB groundwater quality as required by SWRCB Board's Division of Drinking Water guidelines and policies, LADWP has drilled 25 new monitoring wells in SFB.
- Cost to install the monitoring wells is approximately \$22 million.

With completion of SFB groundwater characterization, LADWP is proceeding with the necessary environmental reviews, design, permitting, construction, and start-up of the groundwater basin remediation complex to effectively clean and remove contaminants from SFB. The groundwater basin remediation complex is anticipated to be operational by FYE 2022.

LADWP's groundwater remediation facilities treatment facilities now operating within SFB include:

- ***The North Hollywood Operable Unit.*** Under the direction of USEPA, LADWP operates and maintains NHOU pursuant to a Cooperative Agreement between the two agencies. Since the 1980 discovery of VOC contamination in SFB, LADWP worked closely with the state and federal regulators to implement facilities that will contain and remediate the contaminant plume. NHOU began operations in the late-1980s utilizing an aeration tower for VOC removal followed by vapor-phase Granular Activated Carbon (GAC) to control air emissions. Unfortunately this remedy has not fulfilled its primary objective. Highly-concentrated contaminants have escaped NHOU containment areas and reached LADWP groundwater production wells, forcing their closure. Newly emerging constituents, such as hexavalent chromium and 1,4-dioxane, have also reached NHOU but these contaminants are not removed by the aeration process. This situation has forced the closure of two Operable Unit extraction wells, one of which is currently being pumped to contain the chromium plume with the untreated effluent being discharged to the sanitary sewer. Unfortunately the pumping of this well has failed to prevent the continued migration of this chromium plume. To address the deficiencies of NHOU, USEPA conducted a Focused Feasibility study and issued its Record of Decision to replace NHOU with NHOU2IR. USEPA has

determined that this new remedy will target containment for only the highest concentrations of contaminants which exceed ten times the maximum contaminant levels (MCL) mandated by state and federal regulations. Unfortunately, this determination presents a continuing problem of allowing some lower-concentration contaminants which exceed the mandated MCLs to remain unaddressed by the new remedy. However, LADWP continues to work with USEPA on NHOU2IR. Concluding these negotiations will clear the way for LADWP to formulate an agreement with Potentially Responsible Parties on compensation, permitting, and operations of the new NHOU2IR.

- **Liquid-Phase GAC Pilot Treatment Plant at Tujunga Wellfield.** The Liquid-Phase GAC Pilot Treatment Plant removes VOC from two of the twelve production wells in the Tujunga Wellfield, and treats the extracted groundwater for potable use. The pilot facility treats approximately 8,000 gallons-per-minute of groundwater, removes contaminants, and discharges the treated effluent into LADWP's water distribution system for beneficial use pursuant to California Water Code. This pilot facility is a joint project with MWD to demonstrate the effectiveness of utilizing certain liquid phase GAC media for removal of VOC from the groundwater.
- **Pollock Wells Treatment Plant.** The plant provides four liquid-phase GAC vessels to remove VOC contamination from two groundwater wellheads. LADWP has identified hexavalent chromium as an emerging contaminant that may impair the operation of the Pollock Wells Treatment Plant. In response, LADWP has initiated studies and the development of additional remediation systems to remove the hexavalent chromium and other emerging contaminants that are not addressed by the GAC treatment system.

The overall purpose of the San Fernando Groundwater Basin Remediation Project is to restore and protect the full use of the San Fernando Groundwater Basin as a source of water consistent with LADWP's long-term water rights and historic groundwater use.

## Water Supplies

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The Los Angeles Aqueducts (LAA), local groundwater, purchased water from MWD, and recycled water are the primary sources of water supplies for the City. Table III shows LADWP water supplies from 2006 to 2015 from these sources. The total required water supply to meet water demand shows an overall declining trend over this time period due to reductions in total demand. However, sufficient water supplies were available in each of the years to meet the total demand. In 2009, the total water demand decreased due to conservation efforts by mandatory conservation imposed in the City following drier hydrologic conditions coinciding with an economic recession. In 2013, drought conditions returned and have triggered State and City mandatory conservation measures.

**TABLE III  
LADWP Water Supply**

Calendar Year	Los Angeles Aqueducts	Local Groundwater	MWD	Recycled Water	Transfer, Spread, Spills, and Storage	Total
2006	380,235	67,299	188,585	3,893	-1,336	641,348
2007	127,392	88,041	439,353	3,595	-57	658,438
2008	148,407	64,604	427,422	7,048	1,664	645,817
2009	137,261	66,998	351,959	7,570	554	563,234
2010	251,126	68,346	205,240	6,900	-938	532,550
2011	357,752	49,915	119,481	7,708	-153	535,009
2012	166,858	59,109	326,122	5,965	1,182	556,872
2013	64,690	66,272	438,534	9,253	-2,404	581,153
2014	62,088	94,280	391,320	11,307	2,080	556,915
2015	26,828	81,618	378,439	9,844	432	496,297

Note: Units are in AF

## Los Angeles Aqueducts

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

The City holds water rights in the Eastern Sierra Nevada where LAA supplies originate. These supplies originate from both streams and from groundwater. In 1905, the City approved a bond measure for 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 SWRCB. 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 pumping from 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 finally 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 (County of Inyo vs. City of Los Angeles, Superior Court No. 12908)

outlines the management of the City's Owens Valley groundwater resources. As a result of this water agreement and subsequent MOU, LADWP has dedicated 37,000 AF of water annually for enhancement and mitigation projects throughout Owens Valley which includes the re-watering 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.

Further, in December 1989, the Superior Court entered an injunction, ordering LADWP to allow sufficient flow to pass through the Mono Basin diversion facilities to maintain water level in Mono Lake at 6,377 feet from sea level and also to restore streams and protection of fishery in these streams. As a result, the City did not export any water from Mono Basin until 1994, when SWRCB issued Decision 1631. In September 1994, by virtue of the public trust doctrine, the SWRCB issued Decision 1631, an amendment to the license for LADWP exports from Mono Basin which placed conditions on LADWP's water gathering activities from Mono Basin. Under Decision 1631, LADWP's allowable amount of export for a given runoff year (RY, April - March) is dependent on the Mono Lake elevation. For RY 2016-2017, LADWP plans to export approximately 4,500 AF of water from Mono Basin, the same amount as for RY 2015-2016, due to Mono Lake's elevation being projected to remain below 6,380 feet. LADWP has implemented an extensive restoration and monitoring programs in Mono Basin to increase the level of Mono Lake and to improve stream conditions, fisheries and waterfowl habitats in Walker, Parker, Rush and Lee Vining Creeks. 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.

In July 1998, LADWP and the Great Basin Unified Air Pollution Control District (GBUAPCD) entered into a Memorandum of Agreement to mitigate dust emissions from Owens Lake. Diversion of water from Owens River, first by farmers in the Owens Valley and then by the City beginning in 1913, resulted in the exposed lakebed becoming a major source of windblown dust. LADWP has spent \$1.6 billion and used substantial quantities of water since it started diverting water from LAA to mitigate dust emissions at Owens Lake. As of December 31, 2008, LADWP mitigated dust emissions from 29.8 square-miles of Owens Lake in accordance with GBUAPCD's 2003 revised State Implementation Plan. As of April 1, 2010, LADWP mitigated an additional 9.2 square- miles in accordance with GBUAPCD's 2008 State Implementation Plan. Upon completion of Phase 8 in October 2012, LADWP has mitigated dust emissions from a total of approximately 42 square-miles of Owens Lake. Phase 7a was completed by the regulatory compliance deadline of December 31, 2015, and upon its completion, LADWP has mitigated dust emissions on 45 square-miles. Phase 7a is a water neutral project.

On November 14, 2014, an historic agreement between LADWP and GBUAPCD was reached which for the first time established an upper limit of 53.4 square miles that LADWP could potentially be ordered to mitigate dust emissions from Owens Lake playa by the GBUAPCD. As part of this historic agreement, LADWP has agreed to mitigate dust emissions for an additional 3.62 square miles of Owens Lake playa. The Phase 9/10 Project is to be completed by December 31, 2017 and is anticipated to result in further water conservation at Owens Lake through increasing use of water efficient and waterless dust mitigation measures. Upon completion of Phase 9/10 Project, LADWP will mitigate

approximately 48.6 square miles of dust missions in Owens Lake playa. Hence, GBUAPCD's potential future dust mitigation orders to LADWP cannot exceed an additional 4.8 square miles. The agreement allows LADWP to use water efficient and waterless dust mitigation measures, while maintaining existing wildlife habitat on the lakebed. As a result, LADWP expects to save significant amounts of water in coming years with implementation of the Owens Lake Master Project and other water conservation projects.

Average deliveries from LAA system have been approximately 160,461 AF of water annually from FY 2010/11 to 2014/15. During this period, the record low snow pack for LAA watershed in the Eastern Sierra Nevada Mountains was recorded on April 1, 2015. The average annual long-term LAA delivery between 2015 and 2040, using the 50-year average hydrology from FY 1961/62 to 2010/11, is expected to be approximately 278,000 AFY and gradually decline to 267,000 AFY due to projected climate change impacts. However, with the anticipated completion of the Owens Lake Master Project by 2024, the projected LAA delivery may increase to 286,000 AFY due to water conserved at Owens Lake which would off-set most of the anticipated long-term losses.<sup>13</sup>

## **Groundwater**

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San Fernando and Sylmar Basins are subject to the judgment in the City of San Fernando vs. the City of Los Angeles. Pumping is reported to the court-appointed Upper Los Angeles River Area (ULARA) Watermaster. The Central Basin is also subject to court judgments. Pumping is reported to the Water Replenishment District of California (WRD), the administrative member of the Central Basin Water Rights Panel.

SFB is the largest of four basins within ULARA. The basin consists of 112,000-acres of land and comprises 91.2 percent of ULARA valley fill. The City has accumulated 537,453 AF of stored groundwater in SFB as of October 2013. This is water the City can withdraw from the basin during normal and dry years or in an emergency, in addition to the City's approximately 87,000 AF annual entitlement in the basin. With SFB remediation facilities in operation by FYE 2022, groundwater storage credit will be used to maximize pumping in the future above City's annual entitlement in SFB. The majority of the City's groundwater is extracted from SFB. Sylmar Basin is located in the northern part of ULARA, consists of 5,600 acres, and comprises 4.6 percent of ULARA valley fill. City's current annual entitlement per latest Sylmar Safe Yield is 3,570 AF. Sylmar Basin production will increase to 4,170 AFY from FYE 2016 to FYE 2039 to utilize groundwater the City has accumulated into storage and then return to the entitlement of 3,570 AFY in FYE 2040.<sup>14</sup>

A Court decision on pumping rights in ULARA was implemented in a judgment on January 26, 1979. Enclosed with the assessment are copies of those pages from the judgment showing the entitlements (see Appendix D). Further information about ULARA is in the ULARA Watermaster Report. ULARA Watermaster Report and some background information on the judgment are available for review at the office of the ULARA Watermaster or on-line at [www.ularawatermaster.com](http://www.ularawatermaster.com).

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<sup>13</sup> *Id.* at 5-15.

<sup>14</sup> *Id.* at 11-4.

City additionally has adjudicated rights to extract groundwater from the Central Basin. Annual entitlement to Central Basin is 17,236 AF. City has accumulated groundwater into storage in Central Basin, and pumping can be temporarily increased until stored water credits have been expended.<sup>15</sup> See Appendix D for copies of relevant portions of the third amended judgment. Judgment is available for review on the WRD website at <http://wrwater.org/>.

For the period of July 2014 to June 2015, City extracted 80,097 AF and 6,948 AF from the San Fernando and Central Basins, respectively. City plans to continue production from its groundwater basins in the coming years to offset reductions in imported supplies. However, extraction from the basins may be limited by water quality, sustainable pumping practices, and groundwater elevation.

Groundwater produced by City from the San Fernando, Sylmar, and Central Basins for the last available five years are shown on Table IV, as well as groundwater pumping projections for average, single-dry, and multi-year dry weather conditions in five-year increments. Table IV excludes 15,000 AFY of anticipated pumping in SFB from stormwater recharge as well as 30,000 AFY of additional groundwater recharge with highly treated water from DCTWRP planned for 2024 and beyond.

**TABLE IV**  
**Local Groundwater Basin Supply**

Fiscal Year (July-June)	San Fernando	Sylmar	Central
2010-2011	44,029	225	5,099
2011-2012	50,244	1,330	9,486
2012-2013	50,550	1,952	6,310
2013-2014	68,784	891	9,727
2014-2015	80,097	0	6,948
2019-2020*	90,000	4,170	18,500
2024-2025*	88,000	4,170	18,500
2029-2030*	84,000	4,170	18,500
2034-2035*	92,000	4,170	18,500
2039-2040*	92,000	3,570	18,500

Note: Units are in AF,

\*projected production: 2015 UWMP Exhibit 6I

## **Metropolitan Water District of Southern California (MWD)**

MWD is the largest water wholesaler for domestic and municipal uses in Southern California. As one of 26 member agencies, LADWP purchases supplemental water from MWD in addition to the supplies from local groundwater and LAA. MWD imports a portion of its water supplies from Northern California through the State Water Project's (SWP) California Aqueduct and from the Colorado River through MWD's own Colorado River Aqueduct (CRA). LADWP will continue to rely on MWD to meet its current and future water needs.

<sup>15</sup> *Id.* at 6-24.

In ongoing efforts to evaluate MWD's own import reliability, an assessment was done to address changes in demand and supply conditions, and to provide additional resource reserves to mitigate against uncertainties in demand projections and risks in implementing supply programs. All these efforts went into MWD's regional UWMP.

All 26 member agencies have preferential rights to purchase water from MWD. Pursuant to Section 135 of MWD Act, "Each member public agency shall have a preferential right to purchase from the district for distribution by such agency, or any public utility therein empowered by such agency for the purpose, for domestic and municipal uses within the agency a portion of the water served by the district which shall, from time to time, bear the same ratio to all of the water supply of the district as the total accumulation of amounts paid by such agency to the district on tax assessments and otherwise, excepting purchase of water, toward the capital cost and operating expense of the district's works shall bear to the total payments received by the district on account of tax assessments and otherwise, excepting purchase of water, toward such capital cost and operating expense." This is known as preferential rights. As of June 30, 2015, LADWP has a preferential right to purchase 20.01 percent of MWD's total water supply.

LADWP has worked with MWD in developing a plan for allocating water supplies during periods of shortage. On February 12, 2008, MWD Board adopted its Water Supply Allocation Plan (WSAP). LADWP supported the adoption of this plan to acquire its dry weather condition supplies from MWD.

In response to 2009 regulatory restrictions on water supplies from Northern California, MWD Board announced on April 14, 2009, that supply deliveries to the member agencies would be reduced by 10 percent. Reduced supply allocation was to be effective from July 1, 2009 through June 30, 2010, but in April 2010, MWD Board approved an extension of the reduced supply allocation through June 30, 2011, primarily to restore storage balances in MWD's groundwater and surface storage facilities.

On March 31, 2011, California Governor Jerry Brown declared an end to the statewide drought emergency that had been proclaimed earlier on February 27, 2009, by then - Governor of California Arnold Schwarzenegger. MWD's Board subsequently voted on April 12, 2011, to end implementation of the 2010/11 water supply allocation. In the same decision, MWD Board also voted against implementing a water supply allocation for 2011/12. These actions restored full imported water deliveries to member agencies without risk of allocation penalties effective April 2011.

Extremely dry conditions have persisted since 2012 and have left Californians with water supply shortages. On January 17, 2014, Governor Jerry Brown proclaimed a drought State of Emergency. At the end of March 2015, state hydrologists measured a record low five percent of normal snow pack in the Sierra Nevada Mountains. As a result, on April 1, 2015, Governor Jerry Brown issued Executive Order B-29-15 to achieve a statewide 25 percent reduction compared to 2013 usage levels in urban water use through February 28, 2016. On May 18, 2016, due to improved hydrologic conditions, SWRCB adopted a revised emergency water conservation regulation, effective June 2016 through January 2017, requiring locally developed conservation standards based upon each agency's specific circumstances.

The record dry and hot conditions of 2014 significantly impacted the water resources of both the State of California and MWD. DWR limited supplies from SWP to only five percent of the contractors' SWP Table A amounts in 2014. This allocation was the lowest ever in the history of SWP. MWD was able to meet demands in 2014 by relying heavily on storage reserves to make up for the historically low allocation on SWP. MWD's dry-year storage reserves ended 2014 at approximately 1.2 million AF.

On April 14, 2015, to support Governor Jerry Brown's Executive Order B-29-15, and to reduce withdrawals from MWD's dry-year storage reserves, MWD implemented WSAP at a Level 3 Regional Shortage Level, effective July 1, 2015, through June 30, 2016. MWD's dry-year storage reserves ended 2015 at approximately 0.87 million AF.

On May 10, 2016, citing the improved water supply conditions and reduced water use due to conservation, MWD voted to end the current WSAP allocation and rescind WSAP Regional Shortage Level 3 for allocation year 2016/17. MWD, however, called for member agencies to continue with conservation efforts to safeguard against future dry years.

Purchases from MWD have averaged 57 percent of the City's water supply over a five-year period from FY 2010/11 to 2014/15. The sustainable pLAN calls for a reduction in purchased imported water by 50 percent by 2025 from the FY 2013/14 level, which was approximately 441,870 AF. To meet targets established by the pLAN, LADWP plans to reduce water demand through increased conservation as well as increase local supply development. Local supply development includes enhancing the ability for groundwater pumping through increased stormwater capture projects and groundwater replenishment with highly treated recycled water as well as remediation of contaminated groundwater supplies in SFB. LADWP also plans to increase recycled water use for non-potable purposes. With these initiatives and under average hydrologic conditions, 2015 UWMP projects MWD purchases to be approximately 65,930 AFY in 2025.

### ***Recent Issues Related to the State Water Project***

Federal Endangered Species Act (ESA) Litigation filed by several environmental interest groups in the United States District Court for the Eastern District of California alleged that existing biological opinions and incidental take statements inadequately analyzed impacts on listed species under the Federal ESA. On May 25, 2007, Federal District Judge Wanger issued a decision on summary judgment finding the United States Fish and Wildlife Service's (USFWS) biological opinion for Delta smelt was invalid. On December 14, 2007, Judge Wanger issued his Interim Remedial Order requiring that SWP and Central Valley Project operate according to certain specified criteria until a new biological opinion for the Delta smelt is issued. USFWS released the new biological opinion on December 15, 2008. Based on the Water Allocation Analysis released by DWR on December 19, 2008, which analyzed the biological opinion's effects on SWP operations, export restrictions under median hydrologic conditions reduce deliveries to MWD by approximately 500,000 AF.

MWD and other impacted agencies and stakeholders filed separate lawsuits in federal district court challenging the biological opinion, which the federal court consolidated under the caption "Delta Smelt Consolidated Cases." On December 14, 2010, Judge Wanger issued a decision on summary judgment finding that there were major scientific and legal flaws in the Delta smelt biological opinion and remanded the biological opinion to USFWS for

reconsideration. The court's decision invalidated some of the restrictions on project operations contained in the Delta smelt biological opinion. On May 18, 2011, Judge Wanger issued a final decision, amended judgment directing USFWS to complete a new draft biological opinion by October 1, 2011, and to complete a final biological opinion with environmental documentation by December 1, 2013. Later stipulations and orders changed the October 1, 2011, due date for a draft biological opinion to December 14, 2011, and changed the December 1, 2013, due date for the final biological opinion to December 1, 2014.

A draft biological opinion was issued on December 14, 2011. The draft biological opinion deferred specification of a reasonable and prudent alternative and an incidental take statement pending completion of environmental impact review under the National Environmental Policy Act (NEPA). The federal defendants and environmental interveners appealed the final judgment invalidating the 2008 Delta smelt biological opinion to the United States Court of Appeals for the Ninth Circuit. SWP and Central Valley Project contractor plaintiffs, including MWD, cross-appealed from the final judgment. Those appeals and cross-appeals were argued on September 10, 2012. On March 13, 2014, the Ninth Circuit reversed in part and affirmed in part the district court's decision. The Ninth Circuit reversed those portions of the district court decision which had found the 2008 Delta smelt biological opinion to be arbitrary and capricious, and held, instead, that the 2008 biological opinion was valid and lawful. MWD's deliveries from SWP were previously restricted under the 2008 biological opinion for a period prior to 2011. One practical result of the Ninth Circuit's decision was to legally approve the water supply restrictions in the 2008 biological opinion. These water supply restrictions could have a range of impacts on MWD's deliveries from SWP depending on hydrologic conditions. MWD and others subsequently filed motions for reconsideration of the Ninth Circuit's decision.

On May 25, 2010, the court granted the plaintiffs' request for a preliminary injunction in the Consolidated Salmon Cases, restraining enforcement of two requirements under the salmon biological opinion that limit exported water during the spring months based on San Joaquin River flows into the Bay-Delta and reverse flows on the Old and Middle Rivers. Hearings on motions for summary judgment in the Consolidated Salmon Cases were held on December 16, 2010. On September 20, 2011, Judge Wanger issued a decision on summary judgment, finding that the salmon biological opinion was flawed, and that some, but not all, of the project restrictions in the biological opinion were arbitrary and capricious. On December 12, 2011, Judge O'Neill (who was assigned to this case following Judge Wanger's retirement) issued a final judgment in the Consolidated Salmon Cases. The final judgment remands the 2009 salmon biological opinion to the National Marine Fisheries Service. It also directs that a new draft salmon biological opinion be issued by October 1, 2014, and that a final biological opinion be issued by February 1, 2016, after completion of environmental impact review under NEPA. The due date for the salmon biological opinion was later extended to February 1, 2017.

In January and February 2012, the federal defendants and environmental interveners filed appeals of the final judgment in the Consolidated Salmon Cases, and SWP and Central Valley Project contractors filed cross-appeals. On December 22, 2014, the Ninth Circuit reversed in part and affirmed in part the district court's decision. The Ninth Circuit reversed

those portions of the district court decision which had found the 2009 salmon biological opinion to be arbitrary and capricious, and held, instead, that the 2009 biological opinion was valid and lawful. Any adverse impacts of this ruling on MWD's SWP supplies have not been determined.

These events have highlighted the challenges that water suppliers throughout the state currently face regarding supplies from the Delta.

For 2015, DWR announced on December 1, 2014, an initial allocation of 10 percent based on current and projected hydrological conditions. On March 2, 2015, DWR increased the allocation to 20 percent. The final 2015 SWP allocation remained at the level of 20 percent. For MWD, 20 percent allocation equated to 382,300 AFY.

On December 1, 2015, DWR announced an initial SWP allocation of 10 percent for 2016. On January 26, 2016, DWR increased the allocation from ten percent to 15 percent, and on February 24, 2016, due to improved hydrologic conditions, DWR announced another increase from 15 to 30 percent. On March 17, 2016, the allocation was increased to 45 percent, and on April 21, 2016, due primarily to March storms, the allocation was increased to 60 percent. For MWD, 60 percent allocation equates to 1,146,900 AFY.

### ***Delta Policy***

In November 2009, the State Legislature and then Governor Arnold Schwarzenegger passed the 2009 Comprehensive Water Package, which consisted of four policy bills and an \$11.14 billion bond proposal designed to ensure a reliable water supply for California's future and to restore the Delta and other ecologically sensitive areas.

Senate Bill (SB) X7-1 (Simitian) of the 2009 Water Package established the coequal goals for the Delta: to provide a more reliable water supply for California, and to protect, restore, and enhance the Delta ecosystem. SB X7-1 also established a framework to achieve the co-equal goals for the Delta by creating a new Delta governance structure - including the Delta Stewardship Council, Delta Conservancy, and Delta Protection Commission - and laying out a process for determining the consistency of the Bay Delta Conservation Plan (BDCP) with the co-equal goals.

Implementation of the four policy bills in the 2009 Water Package achieved several major milestones. For example, the Delta Plan, a comprehensive, long-term management plan for the Delta, was adopted by the Delta Stewardship Council on May 16, 2013.

The goal of BDCP was to provide the basis for the issuance of endangered species permits for the operation of SWP and Central Valley Project, and for Delta conveyance improvements. BDCP will help to reduce the risk posed by seismic activities to water supplies from the Delta, protect drinking water quality and help to alleviate conflicts between water management and environmental protection. BDCP success is crucial to providing long-term solutions in the Delta and will help to improve and maximize SWP reliability and, consequently, MWD's overall reliability. These statewide initiatives, along with LADWP's local supply and efficiency programs, will ensure that LADWP is better prepared to deal with the natural variability of our local water supplies by having more reliable access to supplemental water supply purchases from MWD.

The draft BDCP and the associated draft environmental impact report/environmental impact statement (EIR/EIS) were made available to the public for review on December 13, 2013. Comments for these documents were due on July 29, 2014. On December 19, 2014, the Brown administration and its federal partners announced several significant changes to the water conveyance portion of BDCP, including the elimination of three pumping plants, to respond to concerns of Delta landowners and others.

On April 30, 2015, state and federal agencies proposed a new sub-alternative, Alternative 4A, which would replace Alternative 4 (the proposed BDCP) as the State's proposed project. Alternative 4A reflected the state's proposal to separate the conveyance facility and habitat restoration measures into two separate efforts: California WaterFix and California EcoRestore.

The environmental analysis of California WaterFix, as well as two other additional alternatives, and updated information from the 2013 BDCP Draft EIR/EIS were included in BDCP/California WaterFix Partially Recirculated Draft EIR/Supplemental Draft EIS (RDEIR/SDEIS). The RDEIR/SDEIS was released for public review on July 10, 2015. The comment period ended on October 30, 2015. The final planning documents are expected to be completed in late 2016.

Responsibilities of entities created by SB X7-1 are as follows:

- Delta Stewardship Council – Independent agency of the state composed of seven members with the responsibility to oversee and coordinate state agency actions within the Delta.
  - Develop a Delta Plan that will include all state and federal Delta ecosystem, flood management, water supply, and local economic sustainability efforts and serve as a guide for state and local agencies to ensure that their actions are consistent with their policies.
  - Develop performance measures to assess the progress of achieving the goals of the Delta Plan.
  - Determine compliance with the Delta Plan and serve as the appellate body in the event of disputes over the consistency of a project with the Delta Plan.
  - Ensure consistency of BDCP with the co-equal goals of water supply reliability and Delta restoration.
  
- Delta Conservancy – State entity governed by an eleven-member board with the responsibility to implement ecosystem restoration in the Delta and support efforts to advance environmental protection and the economic well-being of Delta residents.
  - Develop and adopt a strategic plan that will coordinate investments in the Delta's natural and cultural resources.
  - Promote the economic vitality in the Delta through increased tourism and the promotion of Delta legacy communities.
  - Promote environmental education about, and the public use of, public lands in the Delta.
  
- Delta Protection Commission – State commission with fifteen members charged with recognizing, preserving, protecting, and enhancing the unique resources of the Delta as an evolving place.

- Provide a forum for Delta residents to engage in decisions regarding actions to recognize and enhance the cultural, recreational, and agricultural resources of the Delta.
  - Adopt an economic sustainability plan for the Delta, which is to include flood protection recommendations to state and local agencies, and is to be included in the Delta Stewardship Council's Delta Plan.
- Delta Watermaster
    - Exercise authority of the SWRCB and monitor and enforce orders, as well as license and permit terms and conditions, relating to water diversions in the Delta.
  - Delta Independent Science Board – Standing board of no more than ten members made up of nationally or internationally prominent scientists with appropriate expertise to evaluate a broad range of scientific programs that support adaptive management of the Delta.
    - Provide oversight of the scientific research, monitoring, and assessment programs that support adaptive management of the Delta.
  - Delta Science Program – Led by a Delta Stewardship Council-appointed lead scientist.
    - Provide unbiased scientific information to inform decision-making in the Delta.

The \$11.14 billion “Water Bond” was originally scheduled to be on the 2010 statewide ballot for voter consideration, but was postponed twice – initially to 2012 and then to 2014. In 2014 the legislature replaced the 2010 Water Bond with a new bond measure to provide \$7.545 billion to fund investments in water projects and programs as part of a statewide, comprehensive water plan for California. This new measure, Proposition 1 – the Water Quality, Supply, and Infrastructure Improvement Act of 2014, was approved by the voters on November 4, 2014.

### ***Colorado River***

MWD owns and operates the CRA, which since 1942 has delivered water from the Colorado River to Southern California. The Colorado River currently supplies approximately 17 percent of Southern California’s water needs, and on average makes up about 15 percent of LADWP’s purchases from MWD. This source of supply has been secured to MWD through long-standing legal entitlements. However, extended drought conditions and increased demands by other users have recently impacted its reliability.

The Colorado River supplies come from watersheds of the Upper Colorado River Basin in the states of Colorado, Utah, and Wyoming. Due to the way that Colorado River supplies are apportioned, snowpack and runoff levels do not impact MWD water supplies in the current year. Instead, snowpack and runoff would impact storage levels at Lake Powell and Lake Mead, which would then affect the likelihood of surplus or shortage conditions in the future.

By MWD having two principal sources of supply that draw from two different watersheds, MWD is able to utilize supplies from the Colorado River to offset reductions in SWP supplies and buffer impacts of the California drought. MWD plans to use CRA deliveries, storage reserves and supplemental water transfers and purchases to meet regional demands.

Under a permanent service contract with the U.S. Secretary of the Interior (Secretary), MWD is entitled to receive water from the Colorado River and its tributaries. This water is also available to other users in California, as well as users in the states of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming (Basin States). Under a 1944 treaty, Mexico is allotted 1.5 million acre-feet annually, except in extraordinary circumstances. There is long history of competition among users, but current conditions necessitate increased cooperation.

California is apportioned 4.4 million AF, annually, 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 or Nevada. Since 2003, due to increased consumption, there has been no such unused, apportioned water available to California. Of the California apportionment, MWD holds the fourth priority right to 550,000 AFY under a 1931 priority system governing allotments to California. This is the last priority within California's basic apportionment of 4.4 million AF. Beyond the basic apportionment, MWD holds the fifth priority right to 662,000 AF of water. See Appendix F for more details.

Historically, MWD has been able to claim most of its legal entitlement of Colorado River water and could divert over 1.2 million AF in any year, but persistent drought conditions since 1999 have contributed to a decrease in these claims. The recent 16-year drought has been so severe that it has resulted in major reductions in water deliveries from the Colorado River. MWD's CRA supplies totaled approximately 923,000 AF in calendar year 2015.

Under the Colorado River Basin Project Act of 1968, the Secretary is required to issue an Annual Operating Plan describing CRA operations and projected releases. Considering drought conditions and declining storages, the 2014 release for Lake Powell was 7.48 million AF, which was the lowest since the filling of the reservoir in the 1960s. Moreover, reservoir storages along the CRA have declined dramatically.

The shortage predicament has increased management efforts by the Federal Government and states holding water rights. In May 2005, the Secretary directed the U. S. Bureau of Reclamation (BOR) to initiate the "Development of Lower Colorado River Basin Shortage Guidelines and Coordinated Management Strategies for Lakes Powell and Mead Under Low Reservoir Conditions." These were the first such guidelines to address shortage conditions, as opposed to normal and surplus conditions. Since May of 2005, and in response to the Secretary's directive, the seven Basin States have reached agreement to transform management of the Colorado River system water through conjunctive management of Lakes Mead and Powell, and the adoption of shortage guidelines.

In November 2007, BOR issued a Final EIS including new federal guidelines concerning the operation of the Colorado River system reservoirs. The Secretary issued the final guidelines through a Record of Decision signed in December 2007. The Record of Decision and accompanying agreement among the Colorado River Basin States protect reservoir levels by reducing deliveries during drought periods, encouraging agencies to develop conservation programs, and allowing the states to develop and store new water supplies. The Colorado River Basin Project Act of 1968 insulates California from shortages in all but the most extreme hydrologic conditions.

In May 2016, the 24-month look-ahead-study by BOR projected the end-of-water-year elevation at Lake Powell to be above 3,575 feet and the end-of-water-year elevation at Lake Mead to be below elevation 1,075 feet. As determined in the April 2016, 24-Month Study, and documented in the 2016 Annual Operating Plan, Lake Powell's operation in water year 2016 will be governed by the Upper Elevation Balancing Tier and will range from 8.23 to 9.0 million AF. The projected release from Lake Powell in water year 2016 will be updated each month throughout the remainder of the water year.

### ***Reliability Efforts for Southern California***

MWD has been developing plans and making efforts to provide additional water supply reliability for the entire Southern California region. LADWP coordinates closely with MWD to ensure implementation of these water resource development plans. MWD's long-term plans to meet its member agencies' growing reliability needs are through: improvements to SWP as outlined in the California WaterFix and EcoRestore plans, conjunctive management efforts on the Colorado River, water transfer programs, outdoor conservation measures, and development of additional local resources, such as recycling, brackish water desalination, and seawater desalination. These plans are contained in MWD's 2015 IRP and UWMP, which can be found through links shown below:

- MWD 2015 IRP:  
[http://mwdh2o.com/PDF\\_About\\_Your\\_Water/2015%20IRP%20Update%20Report%20\(web\).pdf](http://mwdh2o.com/PDF_About_Your_Water/2015%20IRP%20Update%20Report%20(web).pdf)
- MWD 2015 UWMP:  
[http://www.mwdh2o.com/PDF\\_About\\_Your\\_Water/2.4.2\\_Regional\\_Urban\\_Water\\_Management\\_Plan.pdf](http://www.mwdh2o.com/PDF_About_Your_Water/2.4.2_Regional_Urban_Water_Management_Plan.pdf)

Additionally, MWD has more than 5.0 million AF of storage capacity available in reservoirs and banking/transfer programs, with approximately 1.21 million AF, inclusive of of Intentionally Created Surplus, in that storage, and 626,000 AF in emergency storage as of January 1, 2015. MWD storage level was about 0.87 million AF at the end of calendar year 2015. MWD has plans to add to storage in 2016. The resulting end-of-year 2016 storage balances are estimated to range from approximately 1.1 to 1.5 million AF depending on SWP and CRA supply conditions.

MWD's 2015 IRP builds upon the strong foundation of diversification and adaptation developed in previous IRPs. 2015 IRP reinforces MWD commitment to meeting the region's water supply needs through an evolving long-term strategy that calls for maintaining and stabilizing existing resources along with developing more conservation and new local supplies.

MWD's 2015 UWMP reports on water reliability and identifies projected supplies to meet the long-term demand within MWD's service area. Table V summarizes MWD's reliability in five-year increments extending to 2040 and is based on information contained in MWD's 2015 UWMP. As reported, MWD has supply capabilities that would be sufficient to meet expected demands from 2020 through 2040 under average year, single dry-year and multiple dry-year hydrologic conditions. An in depth discussion on MWD is attached in Appendix F.

**Table V**  
**MWD System Forecast Supplies and Demands, Average Year (1922 – 2012 Hydrology)**

Forecast year	Supply (Thousands of AF per Year)				
	2020	2025	2030	2035	2040
<i>Current Programs</i>					
In-Region Supplies and Programs	693	774	852	956	992
State Water Project <sup>1</sup>	1,555	1,576	1,606	1,632	1,632
Colorado River Aqueduct					
Colorado River Aqueduct Supply <sup>2</sup>	1,468	1,488	1,484	1,471	1,460
Aqueduct Capacity Limit <sup>3</sup>	1,200	1,200	1,200	1,200	1,200
Colorado Aqueduct Capability	1,200	1,200	1,200	1,200	1,200
<b>Capability of Current Programs</b>	<b>3,448</b>	<b>3,550</b>	<b>3,658</b>	<b>3,788</b>	<b>3,824</b>
<i>Demands</i>					
Total Demands on MWD	1,586	1,636	1,677	1,726	1,765
Imperial Irrigation District - San Diego County Water Authority Transfers and Canal Linings <sup>4</sup>	274	282	282	282	282
<b>Total Demands on MWD</b>	<b>1,860</b>	<b>1,918</b>	<b>1,959</b>	<b>2,008</b>	<b>2,047</b>
<b>Surplus</b>	<b>1,588</b>	<b>1,632</b>	<b>1,699</b>	<b>1,780</b>	<b>1,777</b>
<i>Programs Under Development</i>					
In-Region Supplies and Programs	43	80	118	160	200
State Water Project	20	20	268	268	268
Colorado River Aqueduct					
Colorado River Aqueduct Supply	5	25	25	25	25
Aqueduct Capacity Limit <sup>2</sup>	0	0	0	0	0
Colorado River Aqueduct Capability	0	0	0	0	0
<b>Capability of Programs Under Development</b>	<b>63</b>	<b>100</b>	<b>386</b>	<b>428</b>	<b>468</b>
<b>Maximum MWD Supply Capability</b>	<b>3,511</b>	<b>3,650</b>	<b>4,044</b>	<b>4,216</b>	<b>4,292</b>
<b>Potential Surplus</b>	<b>1,651</b>	<b>1,732</b>	<b>2,085</b>	<b>2,208</b>	<b>2,245</b>

1. Includes water transfers and groundwater banking associated with SWP.

2. Includes 296 TAF of non-MWD supplies conveyed in CRA for Imperial Irrigation District - San Diego County Water Authority Transfers and Canal Linings.

3. CRA has a capacity constraint of 1.20 MAF per year.

4. Does not include 16 TAF subject to satisfaction of conditions specified in agreement among MWD, the US, and the San Luis Rey Settlement.

## Secondary Sources and Other Considerations

Stormwater capture, water conservation, and recycling will play an increasing role in meeting future water demands. LADWP has implemented stormwater capture, conservation and recycling programs with efforts under way to further promote and increase the level of these programs. LADWP is committed to supply a higher percentage of the City's water demand through local water supply development.

LADWP works closely with MWD, LASAN (wastewater agency), other regional water providers, and various stakeholders to develop and implement programs that reduce overall water use. One example of such collaboration is an integrated resources planning process.

City's IRP is a unique approach of technical integration and community involvement to guide policy decisions and water resources facilities planning. IRP recognizes the inter-relationship of water, wastewater, and runoff management. Initiation of IRP began in 1999 and culminated in its adoption in 2006. Through the stakeholder driven IRP process, detailed facilities plans were developed for the City's wastewater and stormwater systems through the planning horizon of 2020.

One Water LA 2040 (One Water LA) plan is an initiative building upon the success of the IRP. One Water LA extends IRP planning period to year 2040 and takes into consideration an additional emphasis on environmental, social, and sustainability factors. The overarching goal of One Water LA is to maximize resources through the integration of multi-beneficial collaborative programs and projects to make the City greener and more sustainable. One Water LA will follow in the footsteps of IRP and will be a stakeholder driven process with a goal of increased public involvement to represent Los Angeles' diversity in geography, interests, and demographics.

## **Summary of Water Demand and Supply Projections for 20 Years**

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Table VI tabulates the service reliability assessment for average weather year. Existing water conservation has been subtracted already from projected demands, but new water conservation is included as a supply source.

**Table VI**  
**Service Area Reliability Assessment for Average Weather Year**

Demand and Supply Projections (in acre-feet)	Average Weather Conditions (FY 1961/62 to 2010/11) Fiscal Year Ending on June 30				
	2020	2025	2030	2035	2040
<b>Total Water Demand<sup>1</sup></b>	<b>611,800</b>	<b>644,700</b>	<b>652,900</b>	<b>661,800</b>	<b>675,700</b>
<b>pLAn Water Demand Target</b>	<b>485,600</b>	<b>533,000</b>	<b>540,100</b>	<b>551,100</b>	<b>565,600</b>
<b>Existing / Planned Supplies</b>					
Conservation (Additional Active <sup>2</sup> and Passive <sup>3</sup> after FY14/15)	125,800	110,900	111,600	109,100	108,100
Los Angeles Aqueduct <sup>4</sup>	275,700	293,400	291,000	288,600	286,200
Groundwater <sup>5</sup> (Net)	112,670	110,670	106,670	114,670	114,070
Recycled Water					
- Irrigation and Industrial Use	19,800	29,000	39,000	42,200	45,400
- Groundwater Replenishment	0	30,000	30,000	30,000	30,000
Stormwater Capture					
- Stormwater Reuse (Harvesting)	400	800	1,200	1,600	2,000
- Stormwater Recharge (Increased Pumping)	<u>2,000</u>	<u>4,000</u>	<u>8,000</u>	<u>15,000</u>	<u>15,000</u>
Subtotal	536,370	578,770	587,470	601,170	600,770
<b>MWD Water Purchases</b>					
With Existing/Planned Supplies	75,430	65,930	65,430	60,630	74,930
<b>Total Supplies</b>	<b>611,800</b>	<b>644,700</b>	<b>652,900</b>	<b>661,800</b>	<b>675,700</b>
<b>Potential Supplies</b>					
Water Transfers <sup>6</sup>	<u>40,000</u>	<u>40,000</u>	<u>40,000</u>	<u>40,000</u>	<u>40,000</u>
Subtotal	40,000	40,000	40,000	40,000	40,000
<b>MWD Water Purchases</b>					
With Existing/Planned/Potential Supplies	35,430	25,930	25,430	20,630	34,930
<b>Total Supplies</b>	<b>611,800</b>	<b>644,700</b>	<b>652,900</b>	<b>661,800</b>	<b>675,700</b>

<sup>1</sup> Total Demand with existing passive conservation

<sup>2</sup> Cumulative hardware savings since late 1980s reached 118,034 AFY by 2014-15.

<sup>3</sup> Additional non-hardware conservation required to meet water use reduction goals set in the Sustainable City pLAn.

<sup>4</sup> LADWP anticipates conserving 20,000 AFY of water usage for dust mitigation on Owens Lake after the Master Project is implemented in FY 2023-24. Los Angeles Aqueduct supply is estimated to decrease 0.1652% per year due to climate change impact.

<sup>5</sup> Net GW excludes Stormwater Recharge and Groundwater Replenishment supplies that contribute to increased pumping. The LADWP Groundwater Remediation project in the San Fernando Basin is expected in operation in 2021-22. Storage credit of 5,000 AFY will be used to maximize pumping in 2019-20 and thereafter. Sylmar Basin production will increase to 4,170 AFY from 2015-16 to 2038-39 to avoid the expiration of stored water credits, then go back to its entitlement of 3,570 AFY in 2039-40.

<sup>6</sup> Potential water transfer occurs in dry years with stored water acquired in average and wet years.

Service area reliability assessments for single-dry year and multiple-dry year conditions are shown in 2015 UWMP Exhibits 11F through 11H. Demands are met by the available supplies under all scenarios.

## Rates

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Capital costs to finance facilities for the delivery of water supply to LADWP's service area are supported through customer-billed water rates. The Board sets rates subject to approval of City Council by ordinance. The Board is obligated by City Charter to establish water rates and collect charges in an amount sufficient to service the water system indebtedness and to meet its expenses for operation and maintenance.

On March 15, 2016, City Council approved the new water rates and rate structure. New water rates, which became effective April 15, 2016, through Ordinance 184130 provide for modest rate increases each year over a five-year period for infrastructure improvements, meeting regulatory water quality requirements, Owens Valley mitigation measures, and expanding the local water supply, which includes recycled water, stormwater capture, conservation, and groundwater remediation. New water rate structure increases the number of tiers from two to four for single-family residential customers. Goal is to incentivize conservation while recovering the higher costs of providing water to high volume users. In keeping with cost of service principles, the incremental pricing for the tiers is based on the cost of water supply.

## Findings

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Proposed Project is estimated to increase the total water demand within the site by 440 AF annually. This additional water demand has been accounted for in the City's overall total demand projections in the 2015 UWMP using a service area-wide approach that does not rely on individual development demand. The 2015 UWMP utilized SCAG's RTP data that provide for more reliable water demand forecasts, taking into account changes in population, housing units, and employment.

Based on Planning Department's determination that the Proposed Project is consistent with the demographic forecasts for the City from the 2012 SCAG RTP, LADWP finds that Proposed Project water demand is included in the City's 2015 UWMP water demand projection. Furthermore, the 2015 UWMP forecasts adequate water supplies to meet all projected water demands in the City through the year 2040.

LADWP therefore concludes that the 440 AFY increase in the total water demand for Proposed Project falls within the available and projected water supplies for normal, single-dry, and multiple-dry years through the year 2040, as described in LADWP's 2015 UWMP. LADWP finds it will be able to meet the proposed water demand of Proposed Project, as well as existing and planned future water demands of its service area.