

Hwang, Jin

From: Kwan, Delon
Sent: Tuesday, June 14, 2016 8:43 AM
To: Moosbrugger, Earl
Subject: RE: Crossroads Hollywood Project WSA
Attachments: Crossroads Hollywood WSA at 6-9-16 JH - delon edits 06-14-16.docx

Here are my notes / comments to the latest draft WSA template sent by staff as of last week at link below.

Let me know if you want to go over any of the comments.

Thanks.

From: Moosbrugger, Earl
Sent: Friday, June 10, 2016 8:26 AM
To: Kwan, Delon
Subject: RE: Crossroads Hollywood Project WSA

Delon ,

I deal with this daily, and I had bi-weekly meeting with staff yesterday focusing on four points we agreed upon for improvement; one covers the issue below about reporting on tasks and projects.

Regarding GW, yes, Greg responded on 5/13 and we incorporated his input.

I think detail in weekly summary sent a few minutes ago gives best explanation of where we stand, but bottom line is that I need to check calcs again (final check), complete MWD review (Andrei's comments and fact checking which I accomplished a lot of yesterday) and follow up on remaining updates I described in weekly summary. As you suggested, and what I had assumed, we might need to update for Conservation Group based on UWMP and other sources of info.

It is just a matter of working through all of this now (lots of interruptions), and I will utilize other staff if needed.

Thanks!

From: Kwan, Delon
Sent: Friday, June 10, 2016 8:20 AM
To: Moosbrugger, Earl
Subject: RE: Crossroads Hollywood Project WSA

I can't tell from vague responses how much of template and for Crossroad project updates remaining still required. I took a brief look at link and still require updates in several sections from what I can tell. Also, Did Greg Reed's group look at update to GW section?

Assume you have better handle on it regarding when might be completed?

From: Hwang, Jin
Sent: Thursday, June 09, 2016 11:38 AM
To: Kwan, Delon

Cc: Moosbrugger, Earl
Subject: RE: Crossroads Hollywood Project WSA

both

From: Kwan, Delon
Sent: Thursday, June 09, 2016 11:37 AM
To: Hwang, Jin
Cc: Moosbrugger, Earl
Subject: RE: Crossroads Hollywood Project WSA

Are you talking about updates to template and/or Crossroads project, or both?

From: Hwang, Jin
Sent: Thursday, June 09, 2016 11:33 AM
To: Kwan, Delon
Cc: Moosbrugger, Earl
Subject: Crossroads Hollywood Project WSA

Delon,

I'm still working on updating the WSA, but here is the link to the latest copy.

<Z:\Water Resources Development\Projects & Tasks\Water Supply Assessments\WSA Projects\Crossroads Hollywood Project\Board Package\Crossroads Hollywood WSA at 6-9-16 JH.docx>

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WATER SUPPLY ASSESSMENT

Comment [ME1]: Update references in footers when 2015 UWMP approved by Board.

FOR THE CROSSROADS HOLLYWOOD PROJECT

Prepared by:
Water Resources Section

July 19, 2016

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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

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 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 (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 served the City 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.

Findings

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 nor

determination of adequate distribution infrastructure and capacity to serve Proposed Project. A separate request shall be made to LADWP requesting an evaluation of water service connection for Proposed Project.

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 U.S. Census for the City. [{maybe we can elaborate more here on the process, demand model, see 2015 UWMP / Simon.}](#) The 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.

Proposed Project conforms with the use and intensity of development permitted by the City's General Plan, and [it is consistent with the demographic projection for the City from the 2012 RTP.](#) [{I think city attorney commented on this also, but may need little more explanation on this linkage between project consistency with SCAG.}](#)

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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 of Water and Power Commissioners 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 Board of Water and Power Commissioners adopted a Water Rate Ordinance for water service effective April 15, 2016, which excluded the Shortage Year Rates.](#) [{see simon and also 2015 UWMP on new rate structure narrative to include here. May want to separate shortage contingency plan and water rate ordinance.}](#) 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 phases of Ordinance has resulted in reducing the total customer water usage, on average, by approximately 18.2 percent for the months of June 2009 through February 2016.

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Comment [JH2]: Copied from Andrei's revised RESO (2016 06 13 JH)

Comment [ME3]: 6/8/16: Since water supply contingency plan is still in effect, we need to include an update to this paragraph, not delete it. Chapter 11 or the 2015 UWMP mentions the update to the ordinance and effective dates, such as adding a sixth phase. We can also mention that the shortage year rates were excluded in the last rate action (see Appendix C of 2015 UWMP for rate action resolution. ...)

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. Proposed Project's WSA

can be approved based on the fact that Proposed Project's water demand falls within the scope of UWMP's projected increase in citywide water demands, while anticipating multi-dry year water supply conditions occurring at the same time.

Proposed Project Description

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 will replace the existing development.

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

Comment [ME4]: Update after Scope Confirmation received.
Updated (2016 06 09 16 JH)

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

WSA will no longer be valid 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. A revised WSA may then be required, which Applicant will need to request through Planning Department.

Proposed Project Water Demand Estimate

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 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 the 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 the 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 ¹ | 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 | | | | | |
| Existing to be Removed Total² | 172,573 | sf | 11,891 | 13.32 | | | |
| | | | | | | | |
| Proposed Use ¹ | Quantity | Unit | Water Use Factor ³ | Base Demand | Required Ordinances Water Savings ⁴ | Proposed Water Demand | |
| | | | | | | (gpd/unit) | (gpd) |
| 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 | | | |
| Residential Units Total | 950 | du | | 120,035 | 17,223 | 102,812 | 115.17 |
| Residential Interior Amenities ⁵ | 11,800 | sf | 0.65 | 7,670 | | | |
| Residential Deck ⁶ | 75,123 | sf | 0.05 | 3,756 | | | |
| Pool | 5,170 | sf | | 486 | | | |
| Residential Common Total | | | | 11,912 | 1,286 | 10,626 | 11.90 |
| Hotel Room | 308 | room | 120.00 | 36,960 | 1,249 | 35,711 | 40.00 |
| 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 | | | |
| Hotel Common Total | | | | 13,568 | 3,256 | 10,312 | 11.55 |
| Office | 95,000 | sf | 0.12 | 11,400 | | | |
| Retail | 11,800 | sf | 0.025 | 295 | | | |
| Retail ⁷ | 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 ⁶ | 3,769 | sf | 0.05 | 188 | | | |
| Commercial Total | | | | 101,423 | 14,219 | 87,204 | 97.69 |
| Landscaping⁸ | 31,507 | sf | | 2,943 | 1,378 | 1,565 | 1.75 |
| Subterranean Parking⁹ | 1,191,339 | sf | 0.02 | 783 | | 783 | 0.88 |

| | | | | | | | |
|--|-------|-----|----|----------------|--------|----------------|------------------------|
| Cooling Tower | 5,760 | ton | 36 | 205,286 | 41,057 | 164,229 | 183.97 |
| Proposed Water Demand Total | | | | 492,909 | | 413,242 | 462.92 |
| Less Existing to be Removed Total | | | | | | -11,891 | -13.32 |
| Less Additional Conservation ¹⁰ | | | | | | -8,506 | -9.53 |
| Net Additional Water Demand | | | | | | 392,845 | gpd 440.07 af/y |

¹ 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.

² 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.

³ 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>.

⁴ 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.

⁵ Interior amenities includes fitness center and recreation 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.

⁶ Deck and terrace are assumed to have water use similar to lobby waiting area.

⁷ 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>.

⁸ Landscaping water use is estimated per California Code of Regulations Title 23, Division 2, Chapter 2.7, Model Water Efficient Landscape Ordinance.

⁹ 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.

¹⁰ 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

**TABLE II
Crossroads Hollywood Project
Estimated Additional Water Conservation**

| Conservation Measures ¹ | Quantity | Units | Water Saving Factor ² (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 |
| Residential Unit Conservation Total | | | | 5,088 | 5.70 |
| Toilet | 38 | ea | 4.79 | 182 | 0.20 |
| Urinal | 10 | ea | 3.44 | 34 | 0.04 |
| Showerheads | 11 | ea | 7.50 | 83 | 0.09 |
| Residential Common Conservation Total | | | | 299 | 0.33 |
| Toilet | 308 | room | 1.82 | 559 | 0.63 |
| Showerhead | 308 | room | 2.39 | 735 | 0.82 |
| Hotel Rooms Conservation Total | | | | 1,294 | 1.45 |
| Toilet | 45 | ea | 4.79 | 215 | 0.24 |
| Urinal | 13 | ea | 3.44 | 45 | 0.05 |
| Showerheads | 27 | ea | 7.50 | 203 | 0.23 |
| Hotel Common Conservation Total | | | | 463 | 0.52 |
| Toilet | 24 | ea | 4.79 | 115 | 0.13 |
| Urinal | 5 | ea | 3.44 | 17 | 0.02 |
| Office Conservation Total | | | | 132 | 0.15 |
| Toilet | 88 | ea | 4.79 | 421 | 0.47 |
| Urinal | 20 | ea | 3.44 | 69 | 0.08 |
| Restaurant / Bar Conservation Total | | | | 490 | 0.55 |
| Toilet | 27 | ea | 4.79 | 129 | 0.14 |
| Urinal | 1 | ea | 3.44 | 3 | 0.00 |
| Retail / Commercial Conservation Total³ | | | | 132 | 0.15 |
| Landscaping Total Conservation⁴ | | | | 608 | 0.68 |
| Total Additional Water Conserved = | | | | 8,506 | 9.53 |

¹Water conservation measures agreed to by the Applicant. See Appendix B.

²Based on LADWP estimates.

³Plumbing 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.

⁴Landscaping 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

2015 UWMP projects yearly water demand to reach 675,700 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 Regional Transportation Plan, 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 approach to develop its service area-wide water demand projections. This methodology does not rely on individual development demands to determine area-wide growth. Rather, the growth in water use for the entire service area was considered in developing long-term water projections for the City through FYE 2040.

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.

In order to address current and future drought conditions and the relevant State and City initiatives, LADWP plans to increase water supply reliability, reduce imported water purchases, and increase locally produced water by achieving significant advances in water conservation, stormwater capture, and water recycling. **This section is about demands, why this paragraph on supplies?**

Collaboration between LADWP and 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). **Why is this added here in demand section, seems more appropriate in shortage / emergency discussion?**

Comment [JH5]: Exhibit 11H

Comment [JH6]: Should these years be clarified as FY?

Comment [JH7]: Double-check with Simon Jin will handle
Simon verified 31.6% (2016 06 06 JH)

Comment [JH8]: (675,700 afy – 513,540 afy) / 513,540 afy = 31.6%

Comment [JH9]: Exhibit 2L

Comment [JH10]: Verified. Pg.ES-6, bullet points under Section ES-3

Comment [JH11]: Verified. Pg 2-8 Section 2.3.1

Comment [JH12]: Pg.ES-1

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Comment [ME13]: Verified to p.11-22 of 2015 UWMP on 5/13/16

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LADWP – 2015 UWMP

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.¹

LADWP's 2015 UWMP, available for reference through www.ladwp.com, 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.²

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 [\[in the state? Where?\]](#). In January 2014, Governor 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 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](#) was released establishing targets for the City over the next 20 years to strengthen and promote sustainability. [\[maybe should include some of the pLAn goals listed here.\]](#) 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.

The 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

¹ *City of Los Angeles Department of Water and Power 2015 Urban Water Management Plan*, at ES-1.

² *Id.* at ES-2.

Comment [JH14]: Double-check with Simon Jin will handle
Simon verified 7% decrease. (2016 06 06 JH)

EDM 6/8/16: Okay.

Comment [JH15]: Source of 15% decrease from 2005 UMWP to 2010 UWMP projection: 2010 UWMP pg.10, last sentence

Sources for verifying 15% decrease: 2010 UMWP Exh. ES-I and ES-H, 2005 UWMP Exh.1K

Year 2030 projection in 2005 UWMP = 776,000 afy

Year 2030 projection in 2010 UMWP = 643,785 afy

$(776,000 - 643,785) / 776,000 = 17\%$ decrease

2010 UMWP pg.10 Exh ES-H: 2035 projection with passive = 710,760 afy

2015 UWMP pg. ES-11 Exh ES-H: 2035 projection with passive = 661,848 afy

$(710,760 - 661,848) / 710,760 = 7\%$ decrease

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.

Comment [JH16]: 2015 UWMP pg ES-16, Section ES-5 under Future Water Supplies and under Water Recycling.

Conservation Strategies

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.⁵

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.⁶ 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. 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:

- 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 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

⁵ *Id.* at 58-59.

⁶ *Id.* at 54-55.

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 are called upon to implement their local water shortage contingency plans immediately, and Californians are 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.

The State Water Resource Control Board (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. The SWRCB resolution was adopted on July 15, 2014. The emergency regulation went into effect on July 28, 2014, following approval by the State Office of Administrative Law, and was to remain in effect for 270 days.

On October 14, 2014, Mayor Eric Garcetti issued Executive Directive 5 (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. [The 2010 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. However, to comply with ED5 goals, LADWP is currently developing plans to accelerate many of these 2010 UWMP goals. ~~outdated.~~ Please update.](#) Most significant among them is an increased goal for conservation. As of the end of February 2016 [do we have more current data through April or May?](#), the City's per capita potable water consumption has been reduced to 106.1 gallons per capita per day (GPCD), which equates to an 18.4 percent reduction compared to the baseline of fiscal year ending 2014. [maybe explain here how progressing towards 20% goal by 2017.](#)

Formatted: Highlight

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.

On March 17, 2015, SWRCB, through Resolution No. 2015-0013, amended and extended the emergency regulation in response to a fourth year of severe drought. The 2014 adopted potable water use prohibitions will continue and include new prohibitions, such as: restriction on 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. The regulation went into effect on March 27, 2015, and was to remain in effect for 270 days.

On April 1, 2015, with California's depleted water supplies and record low snowpack in the Sierra Nevada Mountains, Governor 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 the water used in 2013.

Also 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 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.

Comment [JH17]: 2015 UWMP Feb 2015 Draft
Pg.3-4, Section 3.1.1

On May 5, 2015, SWRCB, through Resolution No. 2015-0032, amended and extended the emergency regulation to support water conservation in accordance with Governor Brown's Executive Order B-29-15. The regulation went into effect on May 18, 2015, and was to remain in effect for 270 days through February 13, 2016. Among the emergency regulations are prohibition of using potable water to irrigate ornamental turf on public street medians and water suppliers to achieve designated conservation standards. Water agencies are required to achieve a specific water conservation goal based on their previous water usage, ranging from four percent to 36 percent, and LADWP is required to reduce its water use by 16 percent compared its 2013 usage level. From June 2015 to

January 2016, LADWP has saved 16.4 percent cumulatively compared to the 2013 usage level.

As mentioned above, on June 9, 2015, the City Council approved Ordinance No. 183608 which amended Ordinance No. 181288. Ordinance No. 183608 clarified prohibited uses and added an additional phase to allow for outdoor watering two days a week.

On July 21, 2015, the Board of Water and Power Commissioners adopted a Resolution recommending the Mayor and City Council consider a transition from Phase II to Phase III of City Ordinance No. 183608 if either the Mayoral or SWRCB conservation mandates are not met on a monthly basis. In addition to the requirements of Phase I and II, Phase III will limit outdoor irrigation to no more than two days a week. As of January, 2016, Phase III has not been implemented.

On February 2, 2016, SWRCB, through Resolution No. 2016-0007, amended and extended the emergency regulation to continue the restrictions on water use through October 2016.

[{unreasonable use ordinance and penalties?}](#)

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.⁷

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 Bureau of Sanitation 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 Strategies

1.0 Increase Water Conservation Through Reduction of Outdoor Water Use and New Technology [{missing long term goal updates here in conservation.}](#)

⁷ *Id.* at 59-61.

Goal

Increase water conservation savings 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.

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.⁸ 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 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 water savings from rebates and incentives of over 1178,000 AFY.
- Water conservation achievements have resulted in Los Angeles using just as much as it did 45 years ago despite a population increase of over 1 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 1 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

Comment [JH18]: Add goals number for conservation. Also, mention conservation potential study and potential in numbers. - 5/23/16
Jin will handle

⁸ *Id.* at 51.

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 will continue [to working](#) 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 the 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, 2009.⁹ 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 Brown's Executive Order B-29-15, the California Water Commission approved the revised Model Water Efficient Landscapae 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 for Green Building Codes Revision / Use of Greywater Systems / Water Conservation Measures became effective June 6, 2016. [{Aren't we already evaluating new WSAs for this compliance, so can we include description here on amended ordinance? Don't follow comment that Amir's group knows more about this ordinance.}](#) For this development, all requirements above resulted in savings of approximately 116 AFY.

Comment [JH19]: Jevon informed Jin that Ameer's group would know more about this ordinance. Jevon's group's edit of the template language for water conservation will not include info on this ordinance. (2016 06 09 JH)

In addition, the City adopted Ordinance No. 181899, also known as the "Low Impact Development" Ordinance, and Ordinance No. 183833, entitled the "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.

2.0 Water Recycling

The LADWP 2015 UWMP identifies the goal of delivering 75,400 AFY by 2040 to off-set imported water. 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. There are other projects not listed below that will increase recycled water use in City's service areas.

Comment [JH20]: 2015 UWMP Pg.4-27, Exhibit 40

Comment [JH21]: By 2040, RW will be 75,400 afy, or 13% of total water supply. [\\.\.\WSA - CURRENT TEMPLATE\Crossroads Hollywood\COPY of updated data \(3\).xlsx](#)

Comment [JH22]: double-check 5/23/16 Jin will handle Mario verified six-fold info is okay. (2016 06 02 JH)
EDM 6/8/16: Okay.

Recycled Water Master Planning (RWMP): In 2012, LADWP completed a three-year RWMP. RWMP documents will 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). The GWR project will replenish SFB with up to 30,000 AFY of recycled water. The 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. [While the RWMP continues to provide important guidance as LADWP moves forward to meet the goals of ED 5 and pLAn, the RWMP project planning timeframes and options have been surpassed with these new initiatives.](#)

Comment [JH23]: 2015 UMWP Pg.4-26 2nd to last paragraph

pLAn: The pLAn established the following goals to increase recycled water use: Expand recycled water by an additional 6 million gallons per day by 2017 at Terminal Island Water Reclamation Plant; Convert 85 percent of public golf courses to recycled water; Develop a strategy to convert the City's lakes to recycled water and implement a pilot project; and Expand recycled water production, treatment, and distribution to incorporate indirect potable reuse and direct potable reuse. [{how is City progressing in meeting this RW goal by 2017?}](#)

Comment [JH24]: 2015 UWMP Pg.4-26 bullet points

GWR Environmental Documentation: In September 2013, the 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. The City released the Draft EIR for public review on May 12, 2016. [\[there's no project / concept description of GWR project anywhere?\]](#)

Comment [JH25]: Added edits provided by Mario (2016 06 02 JH)

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.

Comment [JH26]: Added edits provided by Mario (2016 06 02 JH)

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 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 the 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.

Comment [JH27]: Check with Serge on this entire paragraph (RWAG) 5/23/16
Jin will handle
Serge's edits are incorporated. (2016 06 07 JH)
EDM 6/8/16: Okay.

3.0 Enhancing Stormwater Capture

UWMP projects that additional centralized stormwater capture projects will provide for increased groundwater pumping rights in SFB of 35,000 AFY [{I thought was 15,000 AFY increased pumping from SW capture projects? Rephrase sentence if intent is to note additional centralized capture goal of 35,000 AFY.}](#) 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 by fiscal year ending 2035. Distributed stormwater/runoff capture refers to capturing localized dry and wet weather runoff. The Stormwater Capture Master Plan evaluated stormwater capture potential within the City. LADWP began its initial research for the Stormwater Capture Master Plan in the fall of 2013 and completed a final plan in late 2015. Plan goals were integrated into LADWP's 2015 UWMP.

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. [{how much is the City currently on average capturing in SW runoff? Talk about strategy to double / triple SW capture and how will affect additional GW production.}](#)

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 (LACFCD) 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:

1. Completed Centralized Projects

Implemented centralized projects have increased the amount of stormwater captured by an average of 10,600 AFY. [{since when timeframe?}](#) 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 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.

2. 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

The Project 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 6 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.

3. 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

4. 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 3rd 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 the 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.

Comment [ME28]: Has this section been reviewed?

Yes, by Todd Rother (2016 06 02 JH)

EDM 6/8/16: Okay

Comment [JH29]: Make sure GIS study is included and schedule for project implementation (This is a GW characterization study with monitoring wells) 5/23/16
Jin will handle
3rd paragraph in this section states the study was completed in February 2015. Bulletpoints below that describes GW remediation facilities projects and monitoring well projects. Paragraph below the 2 bullet points under Groundwater and Treatment System Monitoring shows the schedule of the GW basin remediation complex operation to be 2021. (2016 06 06 JH)

EDM 6/8/16: Okay

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.

Comment [JH30]: Edits by Todd Rother (2016 06 02 JH)

EDM 6/8/16: Okay

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 the State Water Resource Control 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.

Comment [JH31]: Edits by Todd Rother (2016 06 02 JH)

EDM 6/8/16: Okay

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 2021.

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 GAC to control air emissions. Unfortunately this remedy has not fulfilled its primary objective. Highly-concentrated contaminants have escaped NHOU containment areas and reached the 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 Granular Activated Carbon Pilot Treatment Plant at Tujunga Wellfield: The Liquid-Phase Granular Activated Carbon (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.

The 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.

Comment [JH32]: Edits by Todd Rother (2016 06 02 JH)

EDM 6/8/16: Okay

Water Supplies

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:

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

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 the purchase of land and water rights in the Owens River Valley. By 1913, the first LAA began its deliveries of water to the City primarily from surface water diversions from the Owens River and its tributaries. Historically, these supplies were augmented from time to time by groundwater extractions from beneath the lands that the City had purchased in the Owens Valley.

In 1940, the first LAA was extended north to deliver Mono Basin water to the City pursuant to water rights permits and licenses granted by the State Water Resources Control Board. In 1970, the second LAA was completed increasing total delivery capacity of the LAA system to approximately 561,000 AF per year. The second LAA was to be filled by completing the Mono Basin diversions originally authorized in 1940, by a more effective use of water for agricultural purposes on City-owned lands in the Owens Valley and Mono Basin and by increased groundwater pumping from the City's lands in the Owens Valley.

In 1972, Inyo County filed a California Environmental Quality Act (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 the State Water Resources Control Board (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 2014-2015, 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.

Comment [JH33]: Revised after Milad informed 7a was completed. (2016 06 03 JH)

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 the Phase 9/10 Project, LADWP will mitigate approximately 48.6 square miles of dust missions in the Owens Lake playa. Hence, the GBUAPCD's potential future dust mitigation orders to LADWP cannot exceed

Comment [JH34]: Milad revised 48.62 to 48.6 sq.miles. (2016 06 03)

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 the LAA system have been approximately 160,461 AF of water annually from fiscal year (FY) 2010/11 to 2014/15. During this period, the record low snow pack for the 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. [\[make sure LAA projections are consistent with 2015 UWMP projections\]](#).

Comment [ME35]: AT 5/13/16: Revised per Section 5.6 Projected Deliveries of the latest, up-to-date draft UWMP.

EDM 6/8/16: Okay

Groundwater

The 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 acting Watermaster.

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 water credits 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. 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. The City's current annual entitlement per latest Sylmar Safe Yield is 3,570 AF.

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. The 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.

The City additionally has adjudicated rights to extract groundwater from the Central Basin. Annual entitlement to the Central Basin is 17,236 AF. See Appendix D for copies of relevant portions of the third amended judgment. The judgment is available for review on the WRD website at <http://wrwater.org/>.

For the period of July 2014 to June 2015, the City extracted 80,097 AF and 6,948 AF from the San Fernando and Central Basins, respectively. The 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 the 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
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

Comment [ME36]: Why did we add underlines to table?
Re-created table to delete underlines (2016 06 06 JH)
EDM 6/8/16: Okay

Comment [JH37]: Update to latest version of 2015 UWMP. Table I? 5/23/16
Jin will handle
Verified numbers with 2015 UWMP Tables 6B and 6I, and also added FY 2039-2040 data. 2016 06 06 JH)
EDM 6/8/16: Okay

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.

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 the 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

Comment [JH38]: Include future projections by MWD – see MWD 2015 UWMP 5/23/16
Andrei will handle

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, the 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, the MWD Board announced on April 14, 2009, that supply deliveries to the member agencies would be reduced by ten percent. Reduced supply allocation was to be effective from July 1, 2009 through June 30, 2010, but in April 2010, the MWD Board approved an extension of the reduced supply allocation through June 30, 2011, primarily to restore the 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, the 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 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 Brown issued Executive Order B-29-15 to achieve a statewide 25 percent reduction in urban water use through February 28, 2016. Reductions are based on 2013 usage levels.

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 the SWP. MWD was able to meet demands in 2014 by relying heavily on storage reserves to make up for the historically low allocation on the SWP. MWD's dry-year storage reserves ended 2014 at approximately 1.2 million AF.

On April 14, 2015, to support Governor 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 the reduced water use due to conservation, MWD voted to end the current WSAP allocation and rescind the 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.

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 State Water Project 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. State Water Project 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 the 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 the 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 State Water Project 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 Metropolitan'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 2014, DWR initially approved, on November 19, 2013, a five percent allocation for long-term SWP contractors. A five percent allocation of MWD-contracted water delivery amounts to 95,575 AFY. On January 31, 2014, DWR reduced the 2014 SWP water allocation from five percent to zero percent. This decrease was due to the persistent dry conditions. On April 18, 2014, DWR increased the 2014 SWP water allocation back to five percent based on recent precipitation, runoff, and current water supply conditions. On May 30, 2014, DWR announced the final 2014 SWP allocation of 20 percent.

For 2015, DWR announced on December 1, 2014, an initial allocation of ten 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, the 20 percent allocation equated to 382,300 AFY.

On December 1, 2015, DWR announced an initial SWP allocation of ten percent for CY 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, the 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 the 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 the 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 the 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 State Water Resources Control Board 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 the 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 State Water Project supplies and buffer impacts of the California drought. MWD plans to use

Colorado River Aqueduct deliveries, storage reserves and supplemental water transfers and purchases to meet regional demands.

Under a permanent service contract with the United States 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 Colorado River Aqueduct 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 is 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 Bureau of Reclamation 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, the Bureau of Reclamation 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 April 2016, the 24-month look-ahead-study by the U.S. Bureau of Reclamation (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 [\(include discussion on MWD's recent updates to their 2015 UWMP and IRP, findings.\)](#)

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 Bay Delta Conservation Plan; 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 IRP and regional UWMP, which can be found at www.mwdh2o.com. 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. The MWD storage level was about 0.87 million AF at the end of calendar year 2015.

MWD established a policy objective for water supply reliability as part of its IRP. The Policy objective is to ensure, through the implementation of the IRP, that MWD and its member agencies will have the full capability to meet full-service demands at the retail level at all times.

Table V summarizes MWD's reliability in five-year increments extending to 2040. An in depth discussion on MWD is attached in Appendix F. [\(are we including reference to mwd's 2015 UWMP? Is this source of the table also?\)](#)

Table V
MWD System Forecast Supplies and Demands, Average Year (1922 – 2004 Hydrology)

Comment [TA39]: Based on Exhibit 80 of LADWP's May draft 2015 UWMP.

| 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 ¹ | 1,760 | 1,781 | 1,873 | 1,899 | 1,899 |
| Colorado River Aqueduct | | | | | |
| Colorado River Aqueduct Supply ² | 1,468 | 1,488 | 1,484 | 1,471 | 1,460 |
| Aqueduct Capacity Limit ³ | 1,200 | 1,200 | 1,200 | 1,200 | 1,200 |
| Colorado Aqueduct Capability | 1,200 | 1,200 | 1,200 | 1,200 | 1,200 |
| Capability of Current Programs | 3,653 | 3,755 | 3,925 | 4,055 | 4,091 |
| <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 ⁴ | 274 | 282 | 282 | 282 | 282 |
| Total Demands on MWD | 1,860 | 1,918 | 1,959 | 2,008 | 2,047 |
| Surplus | 1,793 | 1,837 | 1,966 | 2,047 | 2,044 |
| <i>Programs Under Development</i> | | | | | |
| In-Region Supplies and Programs | 43 | 80 | 118 | 160 | 200 |
| State Water Project | 20 | 20 | 225 | 225 | 225 |
| Colorado River Aqueduct | | | | | |
| Colorado River Aqueduct Supply | 5 | 25 | 25 | 25 | 25 |
| Aqueduct Capacity Limit ² | 0 | 0 | 0 | 0 | 0 |
| Colorado River Aqueduct Capability | 0 | 0 | 0 | 0 | 0 |
| Capability of Programs Under Development | 63 | 100 | 343 | 385 | 425 |
| Maximum MWD Supply Capability | 3,716 | 3,855 | 4,268 | 4,440 | 4,516 |
| Potential Surplus | 1,856 | 1,937 | 2,309 | 2,432 | 2,469 |

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.

Comment [ME40]: 1/28/16: MWD 2010 and 2015 both don't count CRA value to arrive at Capability of Proposed Programs, but DWP did in the 2010 UWMP. I calculated based on DWP 2010 UWMP (i.e. gave credit for CRA). I will bring it to Delon's attention, but stick with the existing methodology.

AT's comment on 1/29/16: OK. We need to get to the bottom of why we decided to count CRA Supply in 2010 UWMP because MWD might comment on the table if it doesn't match their 2015 RUWMP.

Comment [TA41]: 1/26/16: Footnotes 1-4 need to be checked for consistency with 2015 RUWMP.

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.

The Integrated Resources Plan (IRP) is a unique approach of technical integration and community involvement to guide policy decisions and water resources facilities planning. The IRP recognizes the inter-relationship of water, wastewater, and runoff management.

Initiation of the 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) plan is an initiative building upon the success of the IRP. One Water LA extends the 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 the IRP and will be a stakeholder driven process with a goal of increased public involvement to represent LA's diversity in geography, interests, and demographics.

Summary of Water Demand and Supply Projections for 20 Years

Table VI tabulates the service reliability assessment for average weather year. Existing water conservation has been already subtracted 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 |
| Total Water Demand¹ | 611,800 | 644,700 | 652,900 | 661,800 | 675,700 |
| pLAn Water Demand Target | 485,600 | 533,000 | 540,100 | 551,100 | 565,600 |
| Existing / Planned Supplies | | | | | |
| Conservation (Additional Active ² and Passive ³ after FY14/15) | 125,800 | 110,900 | 111,600 | 109,100 | 108,100 |
| Los Angeles Aqueduct ⁴ | 275,700 | 293,400 | 291,000 | 288,600 | 286,200 |
| Groundwater ⁵ (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 |
| MWD Water Purchases | | | | | |
| With Existing/Planned Supplies | 75,430 | 65,930 | 65,430 | 60,630 | 74,930 |
| Total Supplies | 611,800 | 644,700 | 652,900 | 661,800 | 675,700 |
| Potential Supplies | | | | | |
| Water Transfers ⁶ | <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 |
| MWD Water Purchases | | | | | |
| With Existing/Planned/Potential Supplies | 35,430 | 25,930 | 25,430 | 20,630 | 34,930 |
| Total Supplies | 611,800 | 644,700 | 652,900 | 661,800 | 675,700 |

¹ Total Demand with existing passive conservation

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

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

⁴ 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.

⁵ 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.

⁶ Potential water transfer occurs in dry years with stored water acquired in average and wet years.

Comment [TA42]: Adjusted the number to VI because of new Table V above. 6/13/16 edm: Narrative above also needs to be updated to VI.

Comment [JH43]: Check with Simon 5/23/16 Jin will handle. Verified this table matches 2015 UWMP Exhibit 11H, and Simon verified it is okay to include this table in WSA (2016 06 03)

Edm (6/13/16): Table reviewed to 2015 UWMP and okay.

Comment [JH44]: Should pLAn target be shown here, as shown in 2015 UWMP Pg. 11-13, Exhibit 11H?

Comment [ME45]: Yes, please keep.

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 {need to update.}

Comment [JH46]: Check 2015 UWMP Rate Structure section and include/update 5/23/16 Adrei will handle

Capital costs to finance facilities for the delivery of water supply to LADWP's service area are supported through customer-billed water rates. LADWP Board of Commissioners (Board) sets the rates subject to approval of the City Council by ordinance. The Board is obligated by the 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.

The water rate structure contains a Water Procurement Adjustment Factor under which the cost of purchased water from MWD is recovered, a Demand Side Management and Reclaimed Water Cost Adjustment Factor which recovers the cost of water conservation programs and reclaimed water projects. In addition, the rate structure contains a Water Quality Improvement Adjustment Factor to recover expenditures to upgrade and equalize water quality throughout the City and to construct facilities to meet state and federal water quality standards, including the payment of debt service on bonds issued for such purposes.

On March 15, 2016, LADWP received City Council approval for a five-year rate change. The new rates, which became effective April 15, 2016, provide for modest rate increases each year for infrastructure improvements, meeting regulatory requirements for water quality, Owens Valley mitigation measures, and expanding the local water supply, which includes recycled water, stormwater capture, and groundwater remediation. A fourth component, increasing water conservation, will receive additional funding, but it does not reflect a rate increase because it is offset by an anticipated decline in purchased water. The new water rates increase the number of tiers from two to four for single-family residential customers. The goal is to incentivize conservation while recovering the higher costs of providing water to high-end users.

Findings

Proposed Project is estimated to increase the total water demand within the site by 440 AF annually based on review of information submitted by Planning Department.

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.

This 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 nor determination of adequate distribution infrastructure and capacity to serve Proposed

Project. A separate request shall be made to LADWP requesting an evaluation of water service connection for Proposed Project.