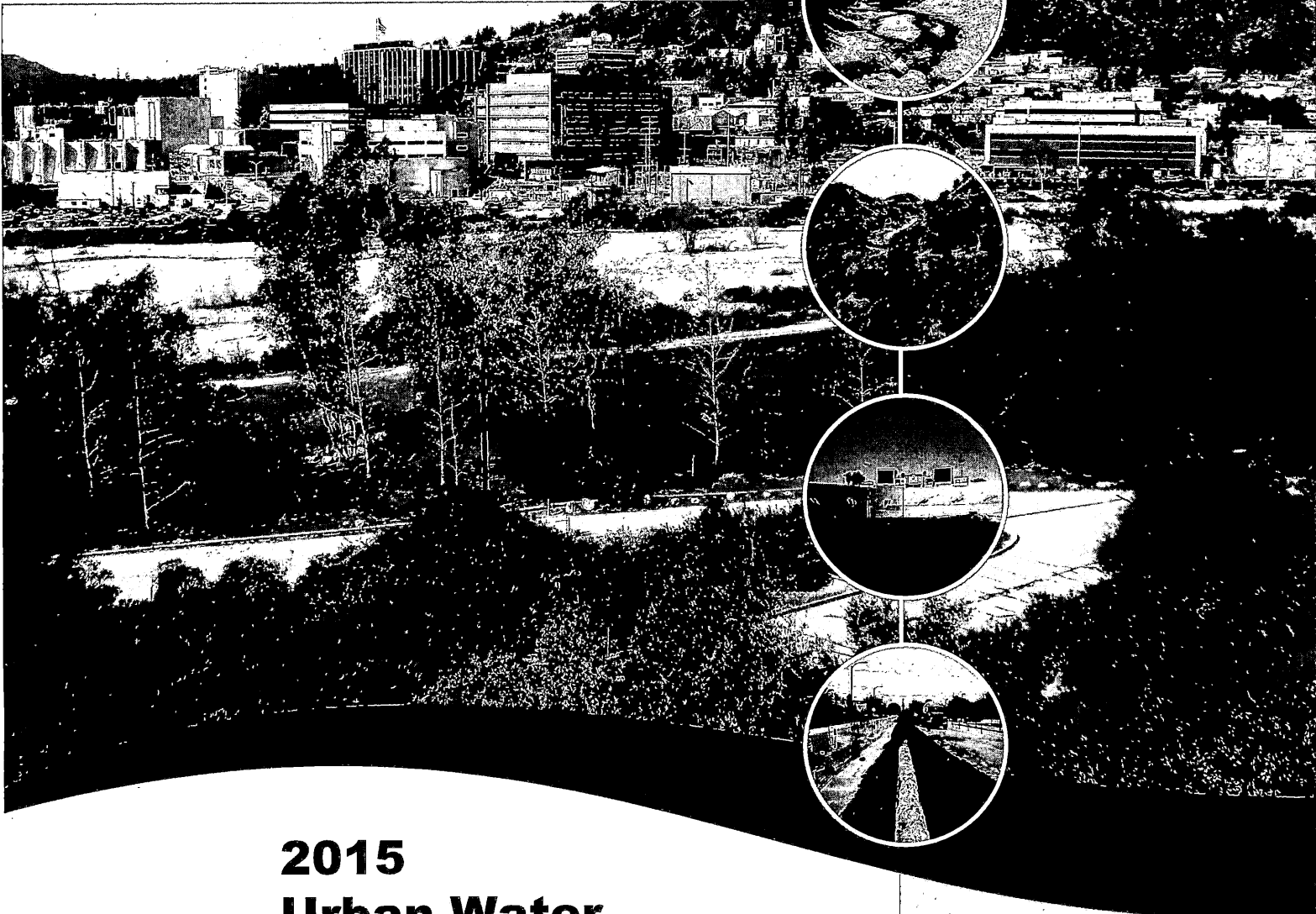


PASADENA WATER & POWER



2015 Urban Water Management Plan

PUBLIC DRAFT

Executive Summary

April 2016



Page intentionally left blank.

Executive Summary

ES-1 Purpose and Organization

Preparation of an Urban Water Management Plan (UWMP) is required by the California Department of Water Resources (DWR) for all urban water suppliers within the State of California. In this context, urban water suppliers are defined as water suppliers, either publicly or privately owned, that provide water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet (AF) of water annually (AFY). UWMPs must meet requirements established in the California Water Code and the Urban Water Management Planning Act.

This report constitutes the 2015 UWMP for Pasadena Water and Power (PWP), which must be adopted by the City of Pasadena and submitted to DWR by July 1, 2016. This Urban Water Management Plan satisfies the requirements of the Act and its amendments. An overview of the provisions of the Act, and a checklist showing where each requirement has been included in this 2015 UWMP is provided in **Appendix A**. In addition to satisfying regulatory requirements, this report is a resource document that includes an analysis of long-term water supply and demand planning for PWP. **Table ES-1** includes a summary of each section of this 2015 UWMP.

Table ES-1: Organizational Overview of the 2015 UWMP

Section	Section Name	Information Contained within Section
Section 1	Introduction and Overview	<ul style="list-style-type: none"> • General legal requirements for 2015 UWMPs • Local Planning Efforts • Agency Coordination • Information about Adoption of the 2015 UWMP
Section 2	System Description	<ul style="list-style-type: none"> • General description of PWP's service area • History and government of PWP • Hydrologic and climate characteristics of PWP's service area • Current and projected population and demographic figures
Section 3	System Water Use	<ul style="list-style-type: none"> • Overview of past water use • Information about existing water use in 2015 • Water use projections through 2040
Section 4	Water Use Baselines and Targets	<ul style="list-style-type: none"> • Information on water conservation mandates • Baseline gross per capita water use • Urban water use targets for 2015 and 2020
Section 5	System Supplies	<ul style="list-style-type: none"> • Information about existing and projected supplies, including: <ul style="list-style-type: none"> ○ Groundwater ○ Surface Runoff ○ Stormwater ○ Imported Water ○ Recycled Water

Section	Section Name	Information Contained within Section
Section 6	Water Supply Reliability Assessment	<ul style="list-style-type: none"> • Overview of the reliability of each of PWP's supplies • Projections for water supply and water demands under the following hydrologic conditions: <ul style="list-style-type: none"> ○ Normal Year ○ Single Dry Year ○ Multiple Dry Year
Section 7	Water Shortage Contingency Plan	<ul style="list-style-type: none"> • Overview of PWP's water shortage stages • Prohibitions that are enacted during water shortages • Methods for reducing water use • Minimum supply available for the next three years
Section 8	Demand Management Measures	<ul style="list-style-type: none"> • Summary of the demand management measures implemented by PWP for the past five years
Section 9	Climate Change	<ul style="list-style-type: none"> • Information about anticipated water supply and water demand impacts in PWP's service area as a result of climate change • Data about the energy intensity of PWP's water system

ES-2 PWP Service Area Background and Water Supplies

PWP's service area is located within the northwestern portion of the San Gabriel Valley in Los Angeles County, encompassing approximately 23 square miles, and is slightly larger than the legal boundary of the City of Pasadena. PWP serves portions of unincorporated areas of Altadena, East Pasadena, and San Gabriel. The service area is bordered on the north by unincorporated Altadena and the Angeles National Forest, on the east by Arcadia and Sierra Madre, on the south by South Pasadena and San Marino, and the west by Los Angeles, Glendale, and La Canada Flintridge.

Pasadena's weather is characterized as a Mediterranean climate. Temperatures are mild in winter, spring and fall, and hot and dry during summer months. Total precipitation in Pasadena averages about 20 inches per year, with most of the rainfall occurring between January and March. Typically, August is the hottest months of the year with an average daily maximum temperature of 90°F. The average daily maximum temperature in winter months is approximately 68°F.

PWP's current water supplies include: local groundwater from the Raymond Basin (approximately 40%), and purchases of imported water (approximately 60%). In wet years, PWP is able to augment local groundwater with surface water diversions. This process provides storage benefits to PWP, because surface water that is diverted and spread during wet years can be stored in the basin for use in periods of higher demand. Water demands that cannot be met with local groundwater supplies are fulfilled with imported water that is purchased by PWP from the Metropolitan Water District of Southern California (MWD). MWD is a regional water wholesaler that has 26 public member agencies, including PWP. MWD obtains its primary water supplies from the State Water Project (SWP) and Colorado River Aqueduct (CRA). Both of these sources of water have become more unreliable since the early 1990's as a result of significant droughts, water rights issues, and environmental restrictions.

Moving forward, PWP plans to increase local supply reliability and offset demands for imported water by implementing a non-potable water project and potable reuse. These projects will allow PWP

to beneficially reuse local wastewater for non-drinking water purposes such as irrigation and industrial uses, and for groundwater augmentation.

ES-3 PWP Demand Projections

PWP's historical water demands have varied from year to year, mainly attributed to annual variations in weather, but also due to economic activity and droughts. All urban water suppliers throughout California are mandated by the Water Conservation Act of 2009 (also referred to as SBX7-7) to reduce per capita potable water demands by 20% by the year 2020. For 2015 PWP was required to have a per capita water use (measured in gallons per capita per day or GPCD) of 190 GPCD. PWP's potable water demands for 2015 were 148 GPCD, which is well below the 2015 target. Reduced demands in PWP's service area are likely the result of ongoing conservation programs that have been implemented in response to the SBX7-7 legislation, and also due to enhanced conservation that is currently in effect in response to a multi-year drought. Although the demand analysis demonstrates that there is anticipated to be a rebound effect (increased demands) when the drought subsides, the analysis also shows that with existing and anticipated conservation efforts, PWP is on track to meet its 2020 GPCD target of 169 GPCD.

ES-4 PWP Water Supply Reliability

One of the key requirements of UWMPs is the inclusion of a long-term supply reliability analysis that demonstrates the supply-demand balance in normal, single dry year, and multiple dry-year hydrologic conditions. PWP's water supply reliability analysis shows that with implementation of additional supplies (recycled water and potable reuse) and conservation measures, supplies will exceed demands under all hydrologic scenarios. Therefore, PWP will be able to place groundwater in storage in future hydrologic conditions, which will increase supply reliability by ensuring that supplies are available in times of higher demands. **Tables ES-2 through ES-4** demonstrate the supply-demand balance for PWP's service area in normal, single dry year, and multiple dry year hydrologic scenarios.

Table ES-2: Normal Year Supply and Demand Comparison (AFY)

	2020	2025	2030	2035	2040
Groundwater for Pumping	12,684	12,684	12,684	12,684	12,684
Imported Water	20,934	20,986	21,237	21,529	21,617
Recycled Water	700	1,100	3,210	3,600	3,990
Supply Totals	34,318	34,770	37,131	37,813	38,291
Demand Totals	32,586	32,611	32,719	32,891	33,000
Difference	1,732	2,159	4,412	4,922	5,291
<i>Groundwater Placed in Storage</i>	<i>1,732</i>	<i>2,159</i>	<i>4,412</i>	<i>4,922</i>	<i>5,291</i>

Table ES-3: Single Dry Year Supply and Demand Comparison (AFY)

	2020	2025	2030	2035	2040
Groundwater for Pumping	10,964	10,964	10,964	10,964	10,964
Imported Water	20,934	20,986	21,237	21,529	21,617
Recycled Water	700	2,280	3,210	3,600	3,990
Supply Totals	32,598	33,050	35,411	36,093	36,571
Demand Totals	32,586	32,611	32,719	32,891	33,000
Difference	12	439	2,692	3,202	3,571
<i>Groundwater Placed in Storage</i>	<i>12</i>	<i>439</i>	<i>2,692</i>	<i>3,202</i>	<i>3,571</i>

Table ES-4: Multiple Dry Years Supply and Demand Comparison (AFY)

	2020	2025	2030	2035	2040	
Year 1	Groundwater for Pumping	10,964	10,964	10,964	10,964	10,964
	Imported Water	20,934	20,986	21,237	21,529	21,617
	Recycled Water	700	2,280	3,210	3,600	3,990
	Supply Totals	32,598	33,050	35,411	36,093	36,571
	Demand Totals	32,586	32,611	32,719	32,891	33,000
	Difference	12	439	2,692	3,202	3,571
	<i>Groundwater Placed in Storage</i>	<i>12</i>	<i>439</i>	<i>2,692</i>	<i>3,202</i>	<i>3,571</i>
Year 2	Groundwater for Pumping	10,964	10,964	10,964	10,964	10,964
	Imported Water	20,934	20,986	21,237	21,529	21,617
	Recycled Water	700	2,280	3,210	3,600	3,990
	Supply Totals	32,598	33,050	35,411	36,093	36,571
	Demand Totals	32,586	32,611	32,719	32,891	33,000
	Difference	12	439	2,692	3,202	3,571
	<i>Groundwater Placed in Storage</i>	<i>12</i>	<i>439</i>	<i>2,692</i>	<i>3,202</i>	<i>3,571</i>
Year 3	Groundwater for Pumping	10,964	10,964	10,964	10,964	10,964
	Imported Water	20,934	20,986	21,237	21,529	21,617
	Recycled Water	700	2,280	3,210	3,600	3,990
	Supply Totals	32,598	33,050	35,411	36,093	36,571
	Demand Totals	32,586	32,611	32,719	32,891	33,000
	Difference	12	439	2,692	3,202	3,571
	<i>Groundwater Placed in Storage</i>	<i>12</i>	<i>439</i>	<i>2,692</i>	<i>3,202</i>	<i>3,571</i>

Attachment B

Public Comments Received on Pasadena Water and Power 2015 Urban Water Management Plan

Comment	Response
<p><i>Pasadena Resident Ken Kules:</i></p> <ol style="list-style-type: none"><li data-bbox="256 535 824 640">1. The UWMP incorrectly describes Pasadena's water rates as sending a strong conservation message to customers.<li data-bbox="256 640 824 892">2. The UWMP falsely claims that Pasadena's water rates meet the definition of "conservation pricing" as derived from the California Urban Water Conservation Council (CUWCC) <i>MOU Regarding Urban Water Conservation in California</i> (BMP 1.4, Retail Conservation Pricing).<li data-bbox="256 892 824 1102">3. PWP's 2013 and 2014 calculations in Appendix J using Option 1 formula are 68% and – by definition – Pasadena's water rates cannot be considered to be "conservation pricing" as claimed in the UWMP.	<ol style="list-style-type: none"><li data-bbox="841 493 1458 703">1. The statement in the 2015 UWMP is made based on PWP's current rate structure with an increasing tier block rate design and varying seasonal unit prices which provide economic incentives (a price signal) to customers to use water efficiently.<li data-bbox="841 703 1458 1039">2. The CUWCC allows agencies to show compliance with BMP 1.4 through any one of three options. PWP has chosen to report compliance using Option 3 which calculates a score based on points awarded from a three-section retail conservation pricing matrix. PWP's 2014 score includes points awarded for its current water rate structure and shows PWP's "On Track" status for the BMP.<li data-bbox="841 1039 1458 1316">3. PWP reports to CUWCC annually. A copy of the "coverage" report is included in Appendix J to show PWP's "On Track" status for the CUWCC BMPs, including conservation pricing. To clarify that PWP did not use Option 1 for reporting BMP 1.4 compliance, the Option 1 calculation will be crossed out from this coverage report page.