2015 Urban Water Management Plan

Adopted June 2, 2016

PCWA

water • energy • stewardship

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Adopted
June 2, 2016

Prepared by:

Tully & Young
Comprehensive Water Planning

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This Placer County Water Agency 2015 Urban Water Management Plan was prepared under the direction of a California licensed civil engineer.

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CHAPTER 1. INTRODUCTION

Placer County Water Agency (PCWA) was created in 1957 by a special act of the California Legislature known as the Placer County Water Agency Act. PCWA has a five-member board of directors elected by district voters for four-year terms. The boundaries of PCWA are coterminous with the boundaries of Placer County.

PCWA carries out a broad range of responsibilities including water resource planning and management, wholesale and retail supply of water, and hydroelectric energy production. PCWA has existing surface water appropriative rights as well as contract entitlements exceeding 300,000 acre-feet per year. PCWA also has access to sustainably managed regional groundwater resources to manage emergency conditions.

PCWA currently delivers approximately 116,500 acre-feet per year within its Western Water System, and provides approximately 23,600 acre-feet per year of untreated water to neighboring purveyors for treatment and resale, serving a total population of over 200,000 people in Placer County directly or indirectly with treated and irrigation water. In addition, PCWA regularly makes surface water available for transfer to other purveyors in the state and to assist fishery protection goals in the lower American River during periods of drought.

Note to DWR

Placer County Water Agency has written this UWMP primarily as a water resources planning tool and secondarily to satisfy the requirements of the UWMPA.

The body of the document provides narratives and discusses data that DWR requests in its 2015 UWMP Guidebook, including changes to the California Water Code since 2010.

To facilitate review by DWR for compliance with the UWMPA, data from the body of the document has been transferred into DWR Tables consistent with the organization of the tables in Section E of the 2015 UWMP Guidebook Appendices. These tables are in **Appendix A-1**.

Also, this UWMP has been reviewed for adequacy according to the UWMP Checklist as contained in Section F in the 2015 UWMP Guidebook. A completed checklist is included in **Appendix A-2**.

PCWA has prepared this Urban Water Management Plan (UWMP) to comply with the Urban Water Management Planning Act (UWMPA) requirements for urban water suppliers. This UWMP addresses PCWA's water management planning efforts to ensure adequate water supply to meet demands over the next 30 years. The 2015 UWMP specifically assesses the availability of supplies to meet future demands during normal, single-dry and multiple dry years. Verification that future demands will not exceed supplies and assuring the availability of supplies in dry-year conditions are critical outcomes of this UWMP. This UWMP provides verification that future demands, represented by existing

General Plans within the land use jurisdictions served by PCWA, will not exceed PCWA's available water supplies.

The 2015 UWMP is an update to PWCA's 2010 UWMP and presents new data and analysis as required by the California Department of Water Resources (DWR) and the California Water Code (CWC) since 2010. It is also a comprehensive water planning document that describes PCWA's water supplies, assesses existing and future supply reliability, forecasts future demands, presents demand management progress, and identifies local and regional cooperative efforts to meet projected water use.

The current four-year drought has emphasized the importance of planning ahead to meet future water demands with potentially at-risk water supplies. Such forward planning is an important outcome of the 2015 UWMP, which also addresses the evolving impact of drought on PCWA's water supply and operations.

1.1 Urban Water Management Planning Act

The Urban Water Management Planning Act requires every urban water supplier to prepare an urban water management plan pursuant to California Water Code § 10610 et seq.[1] Because PCWA is an urban water supplier, it is preparing its 2015 UWMP consistent with the UWMPA. The plan provides a framework for water planning to minimize the negative effects of potential water shortages, and provides useful information to the public about PCWA and its water management programs.

Specifically, the 2015 UWMP describes and evaluates the reliability of PCWA's existing and planned water supplies to meet forecast near-term and long-term customer water demands. The plan assesses the availability and sufficiency of surface, groundwater, and recycled water assets and the vulnerability of these supplies to seasonal, climactic, and regulatory conditions.

The 2015 UWMP also revisits baseline per-capita water use data and target conservation values, first developed and presented in the 2010 UWMP as required by CWC §10608 et seq., and assesses compliance with those targets. This 2015 UMWP also includes narratives describing water demand management measures (DMMs),[2] PCWA's long-term plan for efficient water use, and estimated future water savings based on water use projections, where available. Also included are discussions regarding distribution system water loss, information on potential use of recycled water as a water source for PCWA, and PCWA's

[1] An "urban water supplier" is a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually." CWC § 10617.
[2] As detailed in the CWC § 10631 (f)(1) and (2)

comprehensive water shortage contingency analysis, which details stages of action to be undertaken by PCWA in response to water supply shortages.[3]

In short, this 2015 UMWP allows PCWA assess and plan for short-term and long-term effective management of its water supplies to meet its evolving water demands in the context of climate change and regulatory uncertainty.

1.1.1 Retailer and Wholesaler Requirements

The California Water Code indicates that both urban wholesale and retail water suppliers are to prepare UWMPs. Wholesale and retail suppliers are also to coordinate and provide water use and supply information to each other during preparation of their respective UWMPs. Generally, the UWMPA refers to "urban water suppliers," and the Water Conservation Bill of 2009 indicates that "all water suppliers increase efficiency." These provisions denote consistent application of some components of the UWMPA to both wholesale and retail water providers. There are several instances within the UWMPA, however, where the requirements for wholesale and retail urban water suppliers differ. These include:

- DMMs: Wholesale suppliers provide documentation for DMMs as required under CWC 10631(f)(1)(B). Retail suppliers provide documentation for each DMM as required under CWC 10631(f)(B).
- Baselines and Targets: Only retail urban water suppliers are required to develop base daily per capita use, interim urban water use target, and urban water use target values.
- Water use reduction: Wholesale suppliers are to provide "an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions." Retail suppliers are to "conduct at least one public hearing" that includes general discussion of "the urban retail water supplier's implementation plan for complying with" the Water Conservation Bill of 2009.
- Lower income housing: Only retail urban water suppliers are required to address the lower income water supply projections required by CWC 10634(a).

PCWA meets the CWC definition of a retail urban water supplier as discussed above in **Section 1.1**. Additionally, PCWA also meets the definition of a wholesale urban water supplier as more than 3,000 acre-feet annually are provided by PCWA to other municipalities.[4] Therefore this 2015 UWMP addresses both the retail and wholesale requirements of the UWMPA.

[3] A recent amendment to CWC § 10632 includes defining water features that are artificially supplied with water as part of this contingency analysis.
[4] CWC 10608.12(r): "Urban wholesale water supplier," means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes.

1.2 Public Participation and Agency Coordination

The UWMPA requires a water purveyor to coordinate the preparation of its UWMP with other appropriate agencies in and around its service area. This includes other water suppliers that share a common source, water management agencies, and relevant public agencies. PCWA has prepared this UWMP in coordination with water utilities that receive wholesale water from PCWA, as well as other appropriate local government agencies, as listed in **Table 1-1**. Copies of correspondence are included in **Appendix B-3**.

1.2.1 Water Forum

Community leaders, along with water managers from Sacramento, Placer and El Dorado counties negotiated the Water Forum Agreement (WFA). The WFA is a comprehensive package of linked actions that will achieve two coequal objectives: (1) Provide a reliable and safe water supply for the region's economic health and planned development through to the year 2030; and (2) Preserve the fishery, wildlife, recreational, and aesthetic values of the Lower American River. PCWA is a signatory to the Water Forum Agreement. As one of the signatories, PCWA has agreed to specific water management actions under a range of hydrologic events that are linked primarily to the American River Basin and Folsom Reservoir. The water management actions impact the operation of PCWA's Middle Fork Project reservoirs as replacement water to benefit the Lower American River. Pursuant to the Water Forum provisions, PCWA has also developed best management practices that are consistent with the Demand Management Measures in the 2015 UWMPA.

1.2.2 Regional Water Authority

The Regional Water Authority (RWA) is a joint powers authority that serves and represents the interests of 22 water providers in the greater Sacramento, Placer, El Dorado and Yolo County regions. The Authority's primary mission is to help its members protect and enhance the reliability, availability, affordability and quality of water resources. RWA has launched significant programs and services on a regional scale, including: (1) A water efficiency program designed to help local purveyors implement best management practices on a regional basis; (2) implementation of the American River Basin Regional Conjunctive Use Program to build and upgrade water facilities throughout the region to better manage surface and groundwater resources; and (3) development of an Integrated Regional Water Management Planning Program to continually identify the regional projects and partnerships that will help the region best meet its future water needs. PCWA is an active member of RWA and holds executive positions on the RWA Board.

Table 1-1 – Public and Agency Coordination

Coordinating Agencies	Coordinate regarding Demands	Sent Copy of Draft UWMP	Sent 60-Day Notice	Notice of Public Hearing
Wholesale Customers from Folsom Lake				
City of Roseville	√	√	√	√
San Juan Water District	√	√	√	√
Sacramento Suburban Water District	√	√	√	√
Wholesale Customers who are Urban Water Suppliers				
City of Lincoln	√	√	√	√
California American Water Company	√	√	√	√
Wholesale Customers who are not Urban Water Suppliers				
Dutch Flat Mutual Water Company			√	√
Heather Glen CSD			√	√
Meadow Vista County Water District			√	√
Willow-Glen Water Co.			√	√
Weimar Water Co.			√	√
Midway Heights County Water District			√	√
Christian Valley Park CSD			√	√
Folsom Lake Mutual Water Co.			√	√
Golden Hills Mutual Water Co.			√	√
Hidden Valley Community Assoc.			√	√
Lakeview Hills Community Assoc.			√	√
Land Use Entities and Interested Parties (unless listed above)				
General Public				√
Placer County	√	√	√	√
Sacramento County		√	√	√
Nevada Irrigation District		√	√	√
City of Rocklin	√	√	√	√
Town of Loomis	√	√	√	√
City of Auburn	√	√	√	√
City of Colfax	√	√	√	√

1.2.3 Additional Entities

Placer County Water Agency has shared water interests with numerous local and regional water purveyors. The list of these purveyors is incorporated in **Table 1-1**. Specifically, PCWA provides surface water to San Juan Water District, the City of Roseville, the City of Lincoln, the Sacramento Suburban Water District and other local purveyors within Placer County. Moreover, PCWA accesses groundwater from the Sacramento North Area Groundwater Basin (described in more detail in **Chapter 3**) that also overlaps with numerous water agency boundaries. All relevant entities, including the general public and adjacent

water suppliers, were sent 60 day notices and encouraged to attend the public hearing prior to the adoption of the 2015 UWMP. Copies of the letters are provided in **Appendix B-3.**

1.3 Plan Adoption

Prior to adoption of its UWMP, PCWA held a public hearing regarding its 2015 UWMP on June 2, 2016. Before the hearing, PCWA made a draft of the 2015 UWMP available for public inspection at PCWA's office and on the PCWA website. Pursuant to CWC Section 10642, general notice of the public hearing was provided through publication of the hearing date and time,[5] and posting of the hearing at PCWA's office. PCWA's Board of Directors received comments at the public hearing.

As part of its public hearing, PCWA received community input regarding its implementation plan for complying with the water conservation requirements contained in CWC § 10608.20 et seq., including the implementation plan's economic impacts.[6] Also, at the public hearing, PCWA presented the method for determining its urban water use target pursuant to CWC § 10608.20(b).

PCWA adopted this 2015 UWMP on June 2, 2016.[7] A copy of the adopted 2015 UWMP will be provided to the County and the California State Library, and posted onto PCWA's website.

1.3.1 Additional Compliance

PCWA plans to submit all required documentation related to the UWMPA soon after adoption. These include the required DWR UWMP Tables as **Appendix A-1**, the DWR Checklist as **Appendix A-2**, the SB 7-7X compliance forms as **Appendix A-3**, and the AWWA Water Audit worksheet as **Appendix A-4**.

1.4 Previous Reports

The 2015 UWMP has been prepared using a number of related planning documents and previous reports, including, but not limited to:

- 2010 UWMP;
- 2006 Integrated Water Resources Plan;
- 2015 Water Shortage Contingency Plan;
- 2014 Placer County Economic and Demographic Profile;

[5] See **Appendix B-2** for copies of the published notices.
[6] CWC § 10608.26
[7] The resolution adopting the 2015 UWMP is in **Appendix B-1.**

- 2007 Western Placer County Groundwater Management Plan.

1.5 Plan Organization

This UWMP is organized as follows:

- Chapter 2 provides a description of PCWA's (a) service area, including climate; demographic and population characteristics; and current and projected land-use changes integral to the demand forecasts, and (b) water system, including the potable and non-potable delivery systems;
- Chapter 3 describes PCWA's current and future water supplies and the reliability of the supplies;
- Chapter 4 details the demands on PCWA's system, including the past and future estimated demands;
- Chapter 5 provides information regarding PCWA's demand management measures;
- Chapter 6 discusses PCWA's water shortage contingency plan;
- Chapter 7 compares PCWA's supplies and demands in normal and dry years.

This 2015 UWMP also includes several appendices providing referenced documents and supporting information.

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CHAPTER 2. WATER SYSTEM INFORMATION

2.1 PCWA Service Area General Description

PCWA is a public water agency that provides untreated, treated and irrigation water directly and indirectly to wholesale and retail customers throughout Placer County. Water in Placer County was primarily used for mining, agricultural and residential purposes beginning in the 1850's. This disaggregated usage lasted through the 1950's. In 1957, the Placer County Water Agency Act was signed by Governor Goodwin Knight, creating the Placer County Water Agency. Shortly after being established, PCWA constructed the Middle Fork American River Hydroelectric Project on the Middle Fork American River and selected tributaries.

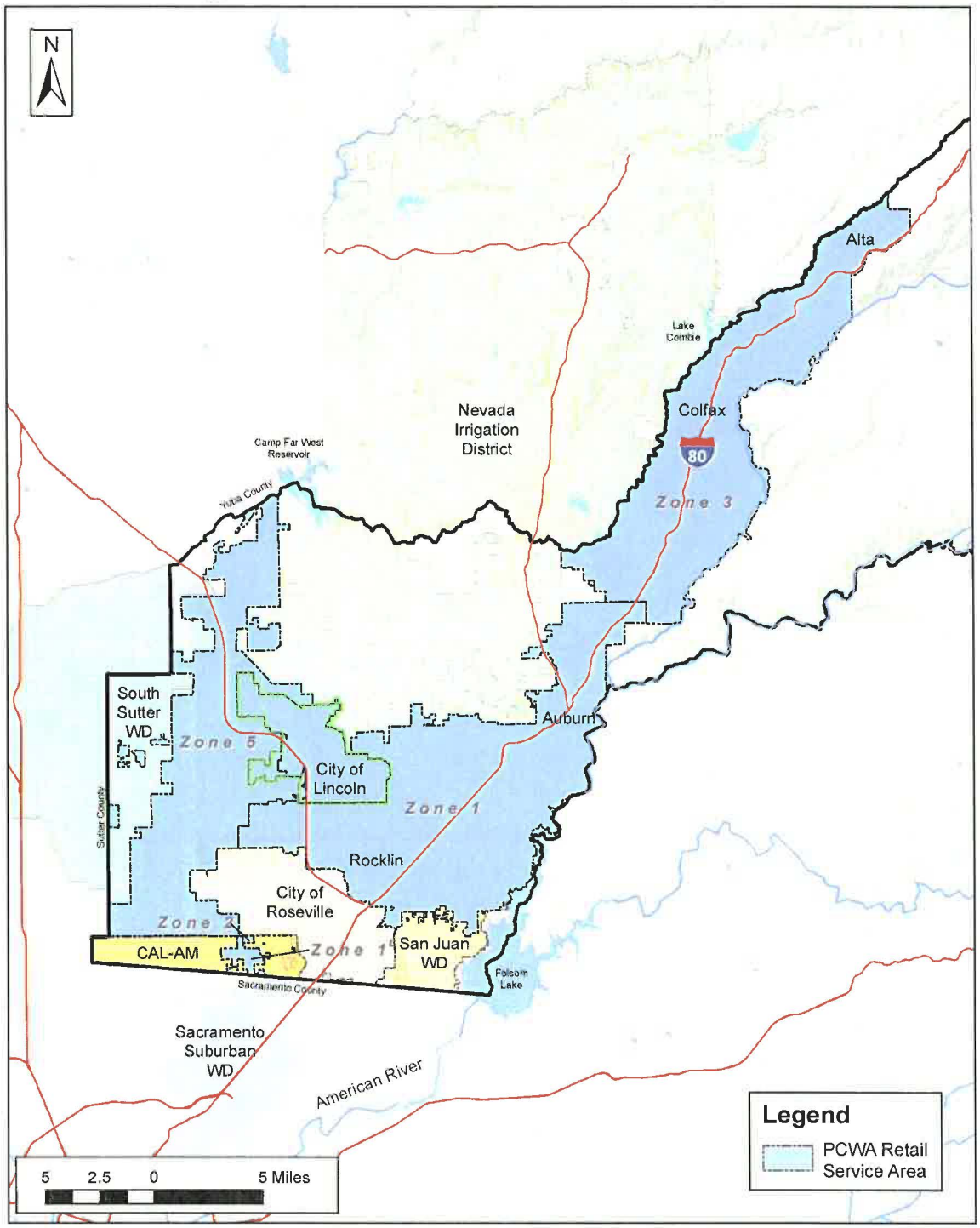
The area served by the Western Water System extends from the community of Alta on the east, westward down the Interstate 80 corridor, and bounded by the Sutter and Sacramento county lines on the west and south and Nevada County on the north. The service area includes retail treated water deliveries to the communities of Alta, Monte Vista, Applegate, Colfax, Auburn, Loomis and Rocklin and much of the surrounding unincorporated areas. PCWA also provides wholesale treated water to the City of Lincoln, California American Water Company for use in their franchise area west of Roseville and south of Baseline Road, and to other relatively small mutual water companies and towns throughout PCWA's western service area.

In addition to treated water service, PCWA provides irrigation water through its extensive canal system to individual customers, and untreated water for treatment and resale by other retail water purveyors. Irrigation water comprises about two-thirds of PCWA's Western Water System deliveries.

The Western Water System is a financial and operational amalgamation of four separate systems acquired or developed over time. Each of these underlying systems is designated as a PCWA Zone; numbered 1, 2, 3 and 5. In **Section 2.1.5**, the five PCWA Zones are described. It should be noted as a difference from PCWA's 2010 UWMP the area called "Zone 4" located in Martis Valley near Truckee, California is no longer served by Placer County Water Agency. This area is now served by Northstar Community Services District.

PCWA also provides untreated water under its North Fork American River water rights into Folsom Lake for delivery to the San Juan Water District, the City of Roseville, and Sacramento Suburban Water District, each of which are required to prepare their own UWMPs. Deliveries to these customers are grouped under the general term of "Untreated Sales to Other Agencies." Thus, PCWA's place of use for its water rights extends outside of the PCWA's district boundaries. **Figure 2-1**, **Figure 2-2** and **Figure 2-3** illustrate the location of PCWA's various service areas.

Figure 2-1 – PCWA Service Area and Adjacent Agencies



2.1.1 Classes of Water Usage

PCWA is both a retail water purveyor and a wholesale water purveyor that serves both treated and raw water supplies to its diverse customers. Because of the diverse service groups, PCWA classifies its customers into four categories for purposes of assessing existing and future demands: retail treated customers, irrigation customers, wholesale treated customers, and untreated water customers. "Retail treated" is water provided directly to PCWA's municipal and industrial customers and meets all requirements for potable water use. "Irrigation" is non-potable surface water provided directly to PCWA retail customers and is generally used by commercial agriculture and by rural residential customers for outdoor water needs. "Wholesale treated" is potable water treated at PCWA-owned water treatment facilities and sold to other water suppliers who then deliver to customers (PCWA does not directly serve the end-user). And, "Untreated" is untreated water sold under contract to other water purveyors for subsequent treatment and delivery to the contractor's urban customers. The latter three categories are discussed in more depth in **Section 4.4** and **Section 4.5**.

Zone 1 and Zone 3 comprise the primary areas of water use that require different types of treated and untreated water. The classes of water use in Zone 1 are shown in **Figure 2-2** by each subarea. Similarly **Figure 2-3** provides an illustration of Zone 3's class of usage by location for retail treated and wholesale untreated.

2.1.2 Climate

The Placer County Water Agency's service area has a large variation in climate due to significant differences in topography, elevation, and related climatological characteristics. This unique variation includes dramatic elevation changes from about 150ft in the western service area up to about 6,000 feet at the eastern end of PCWA's existing service. There are significant climate variations even within the 4 designated PWCA service zones, so this UWMP details multiple distinct locations to describe the PWCA service area climate.

PWCA Zone 1 and Zone 5 are in the western portion of Placer County. Lower Zone 1 is an area with urban development. Zone 5 includes a large swath of agricultural lands. Both zones have weather typical to California's Central Valley with hot dry summers and cool wet winters. Upper Zone 1 consists of rolling foothills and associated large landscape development as well as climate variations associated with elevations up to about 1,600 feet. The climate generally includes hot dry summers and cold wet winters – with evening temperatures cooling below areas further west as well as increased precipitation amounts caused by orographic uplift. Zone 3 extends from Zone 1 up to nearly 4,000 feet and is characterized by Sierra forest climate with warm summers, cold wet winters, and occasional snow. Precipitation at these elevations is significant. Spring runoff from the higher elevations, above 4,000 feet, is the backbone of PCWA's water supply system.

Figure 2-2 – Zone 1 Planning Subareas and Classes of Water Service

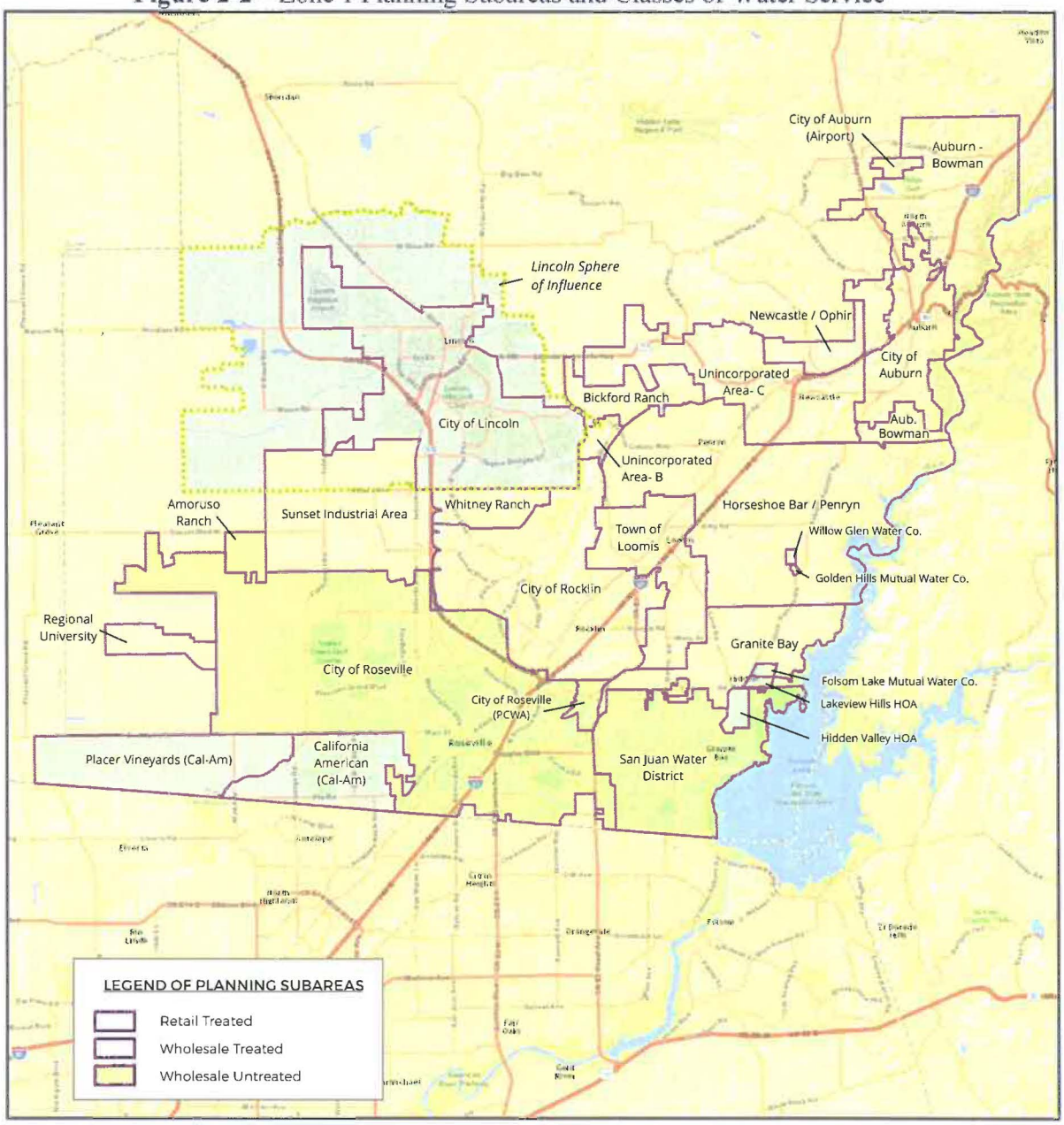
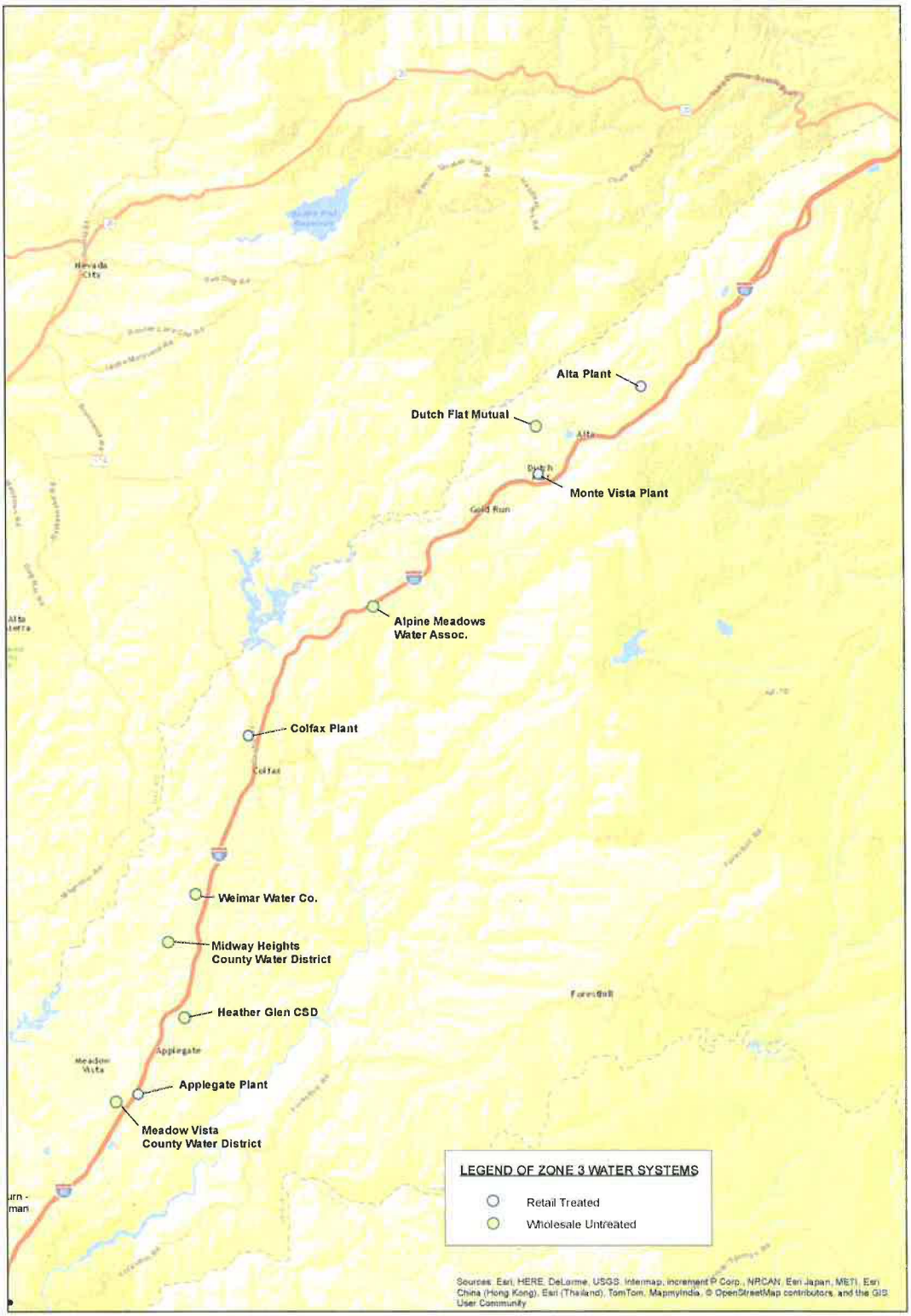


Figure 2-3 – Zone 3 Water Service Locations by Classification



Tables 2-1, 2-2, and **2-3** include the average reference evapotranspiration (ETo), precipitation, and temperature at selected locations in the PCWA service area. Roseville and Auburn represent climate in two distinct areas of the PCWA Zone 1 service area: Upper Zone 1 and Lower Zone 1. Colfax is representative of the climate in PCWA's Zone 3 service area.

For purposes of documenting ETo, PCWA will be using Appendix A of the 2015 update to the California Model Water Efficient Landscape Ordinance (MWELO). The MWELO contains the reference ETo by month as shown in **Tables 2-1, 2-2,** and **2-3**. These tables include ETo estimates for Roseville, Auburn, and Colfax to reflect variations between lower and upper Zone 1, and Zone 3. ETo values for Roseville and Auburn have an additional column for data from local California Irrigation Management Information System (CIMIS) stations. While MWELO Appendix A ETo data represents the suggested ETo values, for the purpose of maintaining the most accurate data, CIMIS station data is presented as a basis for comparison.

Table 2-1 – Average ETo, Precipitation, and Temperature for Roseville

Month	MWELO App A ETo (inches)	CIMIS Average ETo (inches)	Average Precip. (inches)	Average Temp. (ºF)	Average Max. Temp. (ºF)	Average Min. Temp. (ºF)
January	1.1	1.12	3.65	43.7	53.8	33.6
February	1.7	1.70	3.09	47.8	59.1	36.5
March	3.1	3.29	2.89	53.4	66.8	39.9
April	4.7	4.49	1.56	55.9	69.6	42.1
May	6.2	6.36	0.29	65.7	82.0	49.3
June	7.7	7.40	0.26	73.1	90.7	55.4
July	8.5	7.95	0.31	77.6	96.0	59.2
August	7.3	7.05	0.05	76.7	95.5	57.8
September	5.6	5.17	0.37	71.2	89.7	52.7
October	3.7	3.37	1.83	60.8	76.5	45.1
November	1.7	1.63	3.84	48.4	59.5	37.2
December	1.0	1.05	3.21	43.0	52.7	33.3
Annual :	52.3	50.56	21.35	59.8	74.3	45.2

MWELO Appendix A data from Roseville, CA

ETo data from DWR CIMIS Data, Fair Oaks Station 131, 1998-2015

Precipitation and Temperature data from WRCC - Rocklin, CA (047516) 1971-2000

Table 2-2 – Average ETo, Precipitation, and Temperature for Auburn

Month	MWELO App A ETo (inches)	CIMIS Average ETo (inches)	Average Precip. (inches)	Average Temp. (ºF)	Average Max. Temp. (ºF)	Average Min. Temp. (ºF)
January	1.2	1.41	6.71	45.1	54.0	36.6
February	1.7	1.82	6.71	48.5	58.3	39.3
March	2.8	3.26	5.35	51.9	62.0	41.4
April	4.4	4.66	2.7	56.3	68.3	44.8
May	6.1	6.26	1.26	63.3	76.2	50.3
June	7.4	7.36	1.26	70.8	85.3	56.5
July	8.3	8.13	0.05	77.4	92.5	61.8
August	7.3	7.54	0.07	76.4	91.5	61.0
September	5.4	5.64	0.42	71.3	86.2	57.3
October	3.4	3.62	1.78	63.3	76.6	50.7
November	1.6	1.76	4.01	53.2	63.2	42.9
December	1.0	1.05	5.71	46.1	54.9	36.8
Annual :	50.6	52.52	36.03	60.3	72.4	48.3

MWELO Appendix A data from Auburn, CA

ETo data from DWR CIMIS Data, Auburn Station 195, 2005-2015

Precipitation and Temperature data from WRCC - AUBURN, CALIFORNIA (040383) 1905-2015

Table 2-3 – Average ETo, Precipitation, and Temperature for Colfax

Month	MWELO App A ETo (inches)	CIMIS Average ETo (inches)	Average Precip. (rain/snow) (inches)	Average Temp. (ºF)	Average Max. Temp. (ºF)	Average Min. Temp. (ºF)
January	1.1	8.16	6.9	44.6	53.8	34.6
February	1.5	7.6	3.8	46.5	56.2	36.4
March	2.6	6.77	4	49.2	59.8	38.3
April	4.0	3.58	0.9	54.1	65.9	42.1
May	5.8	1.85	0.1	60.8	73.6	48
June	7.1	0.59	0	69.0	82.8	55
July	7.9	0.09	0	76.5	91.1	61.9
August	7.0	0.13	0	75.1	89.9	60.1
September	5.3	0.65	0	69.9	84.3	55.3
October	3.2	2.45	0	61.1	74.2	47.6
November	1.4	5.5	0.5	51.2	62.2	40
December	0.9	7.81	2.8	45.1	54.7	35.2
Annual :	47.8	45.18	19.0	58.6	70.7	46.2

MWELO Appendix A data from Colfax CA

Precipitation and Temperature data from WRCC - COLFAX, CA (041912) 1905-2015

Temperature and precipitation numbers are from Western Regional Climate Center (WRCC) data stations. Both the Colfax and Auburn stations have been active since 1905 whereas the nearest WRCC station to Roseville was active in Rocklin from 1971 to 2000. Average snowfall values are included for Colfax in addition to precipitation data, since they receive significant annual snowfall. Temperature values are provided as monthly averages, and average maximum and minimum temperatures.

2.1.3 Service Area Demographics and Population

The population served by PCWA represents a highly varied mix of users and user classes. This is due to the size of the retail treated service, which includes a broad mix of residential population densities, as well as commercial, public, and industrial water use customers.

A population estimate for PCWA was performed using DWR methods presented in the DWR Guidebook.[8] Future population for PCWA is estimated from predicted housing unit growth. Population estimates include the Placer County population and those only directly served retail treated water. The population is estimated for PCWA retail treated customers as shown in **Table 2-4.**

Table 2-4 – Historic and Projected Retail Treated Population

Year	Population	Year	Population
1995	54,744	2009	91,832
1996	56,504	2010	91,648
1997	58,458	2011	92,230
1998	59,544	2012	92,994
1999	62,851	2013	93,777
2000	67,321	2014	96,004
2001	72,056	2015	98,128
2002	76,923	2020 (est.)	103,885
2003	81,149	2025 (est.)	110,387
2004	84,273	2030 (est.)	117,368
2005	85,942	2035 (est.)	125,384
2006	88,676	2040 (est.)	133,706
2007	90,312	2045 (est.)	141,365
2008	90,977		

2.1.4 Land Use

The population served by PCWA includes a mix of users, user classes and water types. This includes residential, as well as commercial and public customers. The population estimates discussed above are reflected in the expected growth projections within PCWA's Zone 1 service area as presented in **Table 2-5**. This table includes all the subareas in Zone 1 as seen in **Figure 2-2**. Negligible growth is expected in Zone 3, and is therefore not detailed in the

[8] DWR's *2015 UWMP Guidebook for Urban Water Suppliers* FINAL DRAFT, Section 3.4

table. The current number of dwelling units by classification for each subarea in Zone 1 is presented on the left, with anticipated build out on the right. Overall the number of single family and multi-family units is anticipated to almost triple by build out, which is expected sometime soon after the 2045 planning horizon. Additionally, non-residential acreage is also anticipated to increase by almost 1,200 acres.

The City of Rocklin is anticipated to have the largest expansion, with an increase of about 15,000 single family units reflecting an array of lot sizes. This growth representation serves as the foundation of growth forecasts presented in **Section 4.4**.

Table 2-5 – Zone 1 Retail Land Use Projections

	Existing			Build-out		
Zone 1 Subarea	**Single Family (units)**	**Multi-Family (units)**	**Non-Residential (acres)**	**Single Family (units)**	**Multi-Family (units)**	**Non-Residential (acres)**
Upper Zone 1						
Auburn/Bowman	2,260	91	499	6,488	91	936
City of Auburn	4,442	2,341	467	8,116	2,341	458
City of Auburn (Airport)	0	--	173	2	--	479
Newcastle/Ophir	3	--	0	189	--	320
Unincorp. Area C (Newcastle)	314	26	180	2,345	26	679
Lower Zone 1						
Bickford Ranch	0	--	0	2,019	--	230
Horseshoe Bar/Penryn	666	8	58	4,174	8	84
Unincorp. Area B (Loomis Basin)	2	--	0	127	--	0
Town of Loomis	1,897	254	358	3,187	254	664
Granite Bay	605	5	0	709	5	0
City of Rocklin	15,260	5,344	2,793	23,707	6,919	3,499
Whitney Ranch	1,195	591	80	4,002	1,741	125
City of Roseville (PCWA)	670	230	19	877	452	21
Sunset Industrial Area	0	0	1,024	2,476	2,886	7,095
Total Zone 1 (units or acres)	**27,315**	**8,890**	**5,650**	**58,418**	**14,723**	**14,590**
Regional University	0	0	0	2,557	934	761

2.1.5 Service Zone Descriptions

This section describes PCWA's service areas. The PCWA service area includes four zones, each of which have unique water supply characteristics, and areas served by other water purveyors within Zone 1 and Zone 5, but including areas outside of these boundaries.

2.1.5.1 Zone 1

Zone 1 is the largest of the four zones, extending from the City of Auburn to the City of Lincoln and south to the Sacramento County line. PCWA provides retail service to most of Zone 1 and provides wholesale service to the City of Lincoln, California American Water Company, the towns of Rocklin and Loomis, as well as small water purveyors. PCWA also provides untreated water service to Christian Valley Park Community Service District which operates its own water treatment plant.

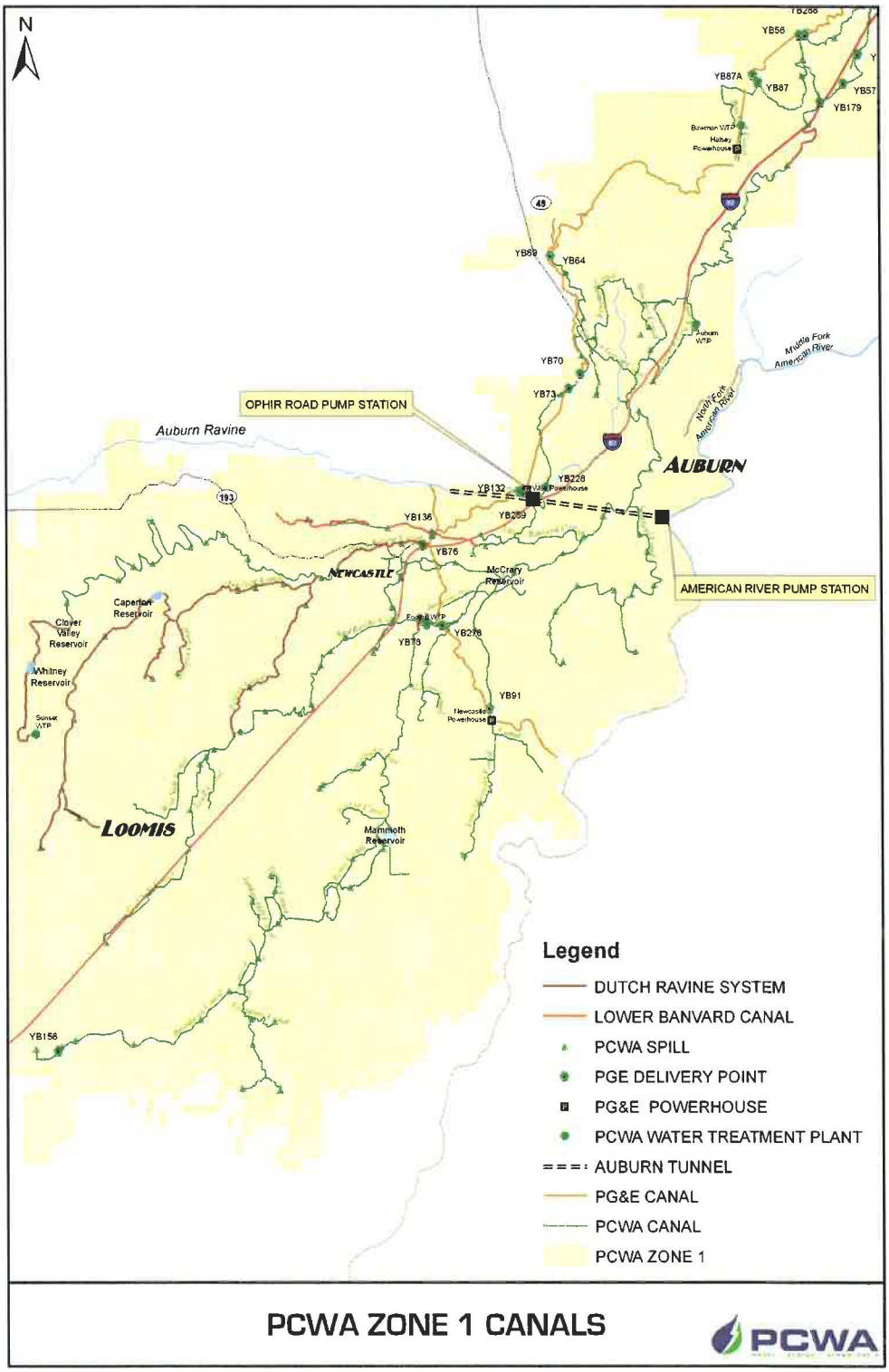
Water for Zone 1 is delivered by contract through PG&E's Drum-Spaulding hydroelectric system and also comes from PCWA's Middle Fork American River project. PCWA operates four water treatment plants (WTPs) in Zone 1. The Zone 1 service area has 16 storage tanks with about 49 million gallons (MG) of storage capacity and 496 miles of treated water pipe. A graphical depiction of Zone 1 canals and supply infrastructure can be found in **Figure 2-4**.

Upper Zone 1 consists of the City of Auburn and surrounding communities. Due to its location, upper Zone 1 can only be supplied PG&E water. PG&E diverts water from the Bear and Yuba Rivers and delivers that water to PCWA through the Bear River, Wise Canal, and South Canal. PCWA then treats this supply at the Auburn and Bowman WTPs prior to direct deliveries to its customers. It also delivers untreated water to treatment plants in lower Zone 1. The Auburn and Bowman WTPs have capacities of 8 million gallons per day (MGD) and 7 MGD respectively. The Upper Zone 1 is comprised of five subareas including Auburn/Bowman, City of Auburn, City of Auburn (Airport), Newcastle/Ophir, and unincorporated area in New Castle.

Lower Zone 1 includes the lower portion of the watershed below Auburn, including the communities of Newcastle, Penryn, and a portion of Granite Bay, as well as the Cities of Rocklin, Lincoln, and Loomis. The primary water supply for lower Zone 1 is PG&E water from the Drum-Spaulding hydroelectric system. PCWA also uses water from the North Fork American River pursuant to its own water rights. PCWA pumps North Fork American River water near Auburn into the Auburn Tunnel, which connects to the Auburn Ravine where it can be distributed to Zone 5 irrigation water customers. PCWA can also pump water from the Auburn Tunnel up to its WTP site at Ophir. The Ophir WTP is still being negotiated by interested parties and its build out timeline and capacity have not yet been determined.[9] From the Ophir site American River water can be diverted into PG&E's South Canal in emergency situations where it flows to PCWA's Foothill WTP. The Lower Zone 1 WTPs are the Foothill and Sunset plants which have capacities of 58 MGD and 8 MGD respectively. The Lower Zone 1 is also comprised of subareas like Upper Zone 1, these subareas include: Bickford Ranch, Horseshoe Bar/Penryn, Unincorporated area in Loomis Basin, Town of Loomis, Granite Bay, City of Rocklin, Whitney Ranch, City of Lincoln, City of Roseville, and Sunset Industrial Area.

[9] PCWA's Water Connection Charges Capital Improvement Program Update, December 2015, p. 15

Figure 2-4 – Zone 1 Canal System



2.1.5.2 Zone 2

Zone 2 consists of 46 residential accounts south of the City of Roseville, in a community known as Bianchi Estates. PCWA supplied water to Bianchi Estates from two wells until 2003, at which time it was converted to surface water. This development receives treated water wheeled through the City of Roseville's system pursuant to an agreement between PCWA and Roseville. As Zone 2 is no longer fed by its wells, PCWA considers it part of Zone 1 for this UWMP, just as it was for the 2010 UWMP.

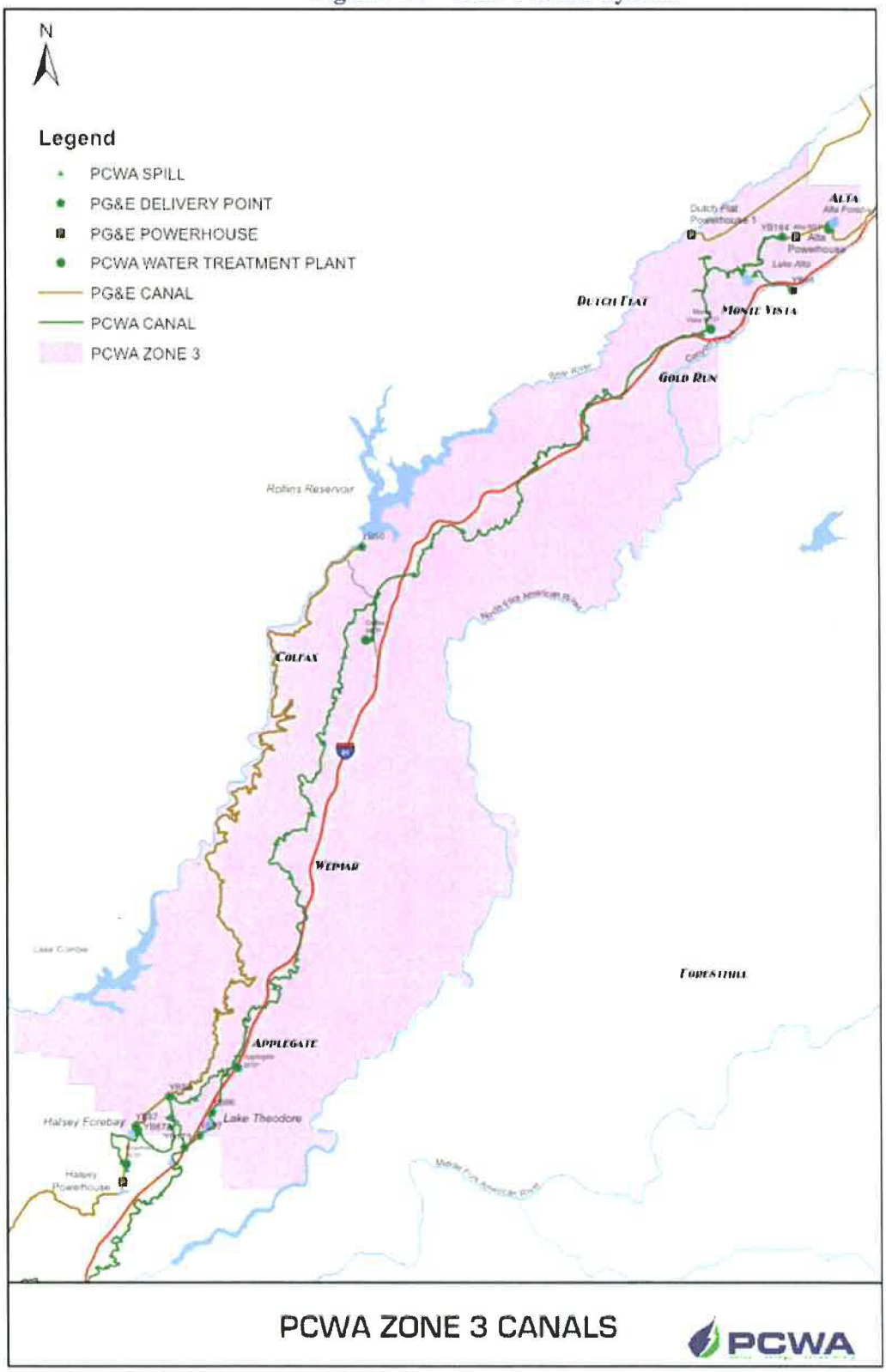
2.1.5.3 Zone 3

Zone 3 includes the communities of Applegate, Weimar, Meadow Vista, Colfax, Gold Run, Monte Vista, Dutch Flat, and Alta and in surrounding areas. Water purchased from PG&E under a 1982 contract enters PCWA's Boardman Canal from the Drum-Spaulding system. The Boardman Canal begins near Alta and runs along I-80 to Zone 1. The Boardman Canal serves as the main delivery method for water to users and treatment plants in Zone 3. PCWA's Zone 3 treatment plants include Alta (0.31 MGD), Monte Vista (0.142MGD), Colfax (1.24 MGD), and Applegate (0.12 MGD). There are about 27 miles of treated water piping and 2.16 MG of treated storage in Zone 3. A graphical depiction of Zone 3 canals and supply infrastructure can be found in **Figure 2-5.**

2.1.5.4 Zone 5

Zone 5 was established in 2000 to provide irrigation water in a previously un-served area of Placer County generally west of the City of Lincoln. This zone is limited to commercial agriculture customers. The water supply in Zone 5 is delivered through Zone 1 infrastructure and derived from multiple water sources including PG&E Drum-Spaulding and Middle Fork Project. PCWA currently serves water to 5,400 acres in Zone 5. Zone 5 receives no treated water service and is considered part of Zone 1 for the purposes of this UWMP.

Figure 2-5 – Zone 3 Canal System



2.1.5.5 Other Agencies

As discussed previously, PCWA provides untreated water to three water purveyors who treat and serve the water to their own customers including: San Juan Water District, Sacramento Suburban Water District and the City of Roseville.

2.1.5.6 Western Area

Because of the geographic overlap and the integration of supplies, and for ease of presenting demand information, the PCWA customers, both wholesale and retail, within Zone 1, Zone 5, and as otherwise within the boundaries of San Juan Water District, Sacramento Suburban Water District and the City of Roseville are collectively grouped under the term "Western Area Water Demands."

2.2 Water Delivery System

PCWA has potable and non-potable water systems allowing it to provide deliveries throughout its service area. These different types of delivery systems allow a variety of classes of water users to be served different types of water to meet their needs.

2.2.1 Potable Water Delivery System

PCWA has an expansive and complex potable water system with 8 treatment plants and over 30 storage tanks. As discussed above in **Section 2.1.5**, PCWA's service areas are broken into a variety of zones. Zone 1, Zone 2, and Zone 3 all include potable water delivery systems as discussed above. **Figures 2-1, 2-2, and 2-3** provide illustrations of each zone's water service and delivery areas.

2.2.2 Non-Potable Water Delivery System

Historically PCWA's groundwater pumping was limited to Zone 2, however pumping for Bianchi Estates ceased in 2004. PCWA has invested in two backup and emergency wells called the Sunset Well and Tinker Wells. As described in **Chapter 3**, these two wells have a capacity to pump approximately 1,000 acre-feet per year as needed for various uses. These supplies could be made available to meet non-potable water demands.

Untreated water is conveyed to San Juan Water District, Sacramento Suburban Water District and the City of Roseville through various diversion facilities in the American River. These entities then treat and serve the water to their own customers through systems wholly owned and operated by these purveyors.

Presently PCWA does not utilize any recycled water systems. The development of any such supplies in the future is anticipated to only be available in Zone 1 and Zone 5. These supplies are further described in **Chapter 3**.

2.3 Retail Service Area Expansion

PCWA is authorized to provide water to all of Placer County. Expansion of PCWA's service area is not required for new development considered in this UWMP. However, PCWA does implement zones for handling of financial matters such as rates and special assessments. Some portions of new developments considered in this 2015 UWMP may require annexation into a zone, which is a process not subject to LAFCO.

The City of Lincoln growth since 2000 required no expansion of PCWA service as Lincoln buys the water wholesale and owns the retail distribution system that exists in the existing Zone 1 area. Other development has required PCWA to expand service but all of that occurs within its existing service area.

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CHAPTER 3. WATER SUPPLY CHARACTERISTICS

This chapter describes Placer County Water Agency's existing and planned water supplies, analyzes the reliability of these supplies, and identifies the extent of any water shortages. PCWA uses surface water as its primary supply. PCWA delivers this supply to both its wholesale and retail customers. PCWA plans to produce groundwater in dry hydrologic conditions to meet demands in the Zone 1 service area. And PCWA may also use recycled water – produced by the cities of Roseville and Lincoln – to meet some demands in the future. The surface water, groundwater and recycled water supplies comprise PCWA's water supply portfolio.

3.1 Existing Surface Water Supplies

PCWA's surface water supplies consist of water from the North Fork American River and its tributaries (including water stored in its Middle Fork Project (MFP)) under water right Permits 13856 and 13858, Central Valley Project water under Interim CVP Contract 14-06-200-5082A-IR3 from the American River, and water purchased from Pacific Gas & Electric Company (PG&E) from the Yuba and Bear Rivers under the 1982 Zone 3 Contract Purchase Agreement and the February 27, 2015 Water Supply Agreement. PCWA also uses a limited amount of surface water from small creeks under pre-1914 water rights. Lastly, PCWA has occasionally purchased water from the South Sutter Water District for service to PCWA Zone 5 customers under Nevada Irrigation District's (NID) water rights.

A summary of PCWA's existing surface water supplies are provided in **Table 3-1** based upon the existing water rights currently held and the contracts to which PCWA is a party. The table identifies the source, maximum available quantity, purpose of use, and place of use for each water asset. Note that to the extent a supply may be used in more than one zone, the total use cannot exceed the maximum quantity available under the water right or contract, and that the use of a given quantity of a supply in one zone precludes the use of the same water in another zone.

3.1.1 Pacific Gas & Electric Contracts

PCWA has two water supply contracts with PG&E that provide opportunity to purchase up to 125,400 af/yr for irrigation and domestic purposes. PCWA typically purchases approximately 110,400 af/yr, with 100,400 af/yr under one agreement and 10,000 af/yr under another (see explanation below). The underlying rights for the PG&E supply are PG&E's pre-1914 appropriative rights to water in the Yuba and Bear Rivers, which were established prior to the time that PG&E developed hydroelectric facilities throughout the Yuba and Bear River watersheds.

Table 3-1 – Water Rights and Contract Entitlements

Supply	Source	Purpose of Use	Max Use af/yr	Place of Use Description	Place of Use		
					Zone 1	Zone 3	Zone 5
Permits 13856-13858	American River	Irrigation, Domestic, Municipal and Industrial, Recreation	120,000	"Western Placer County"; Portions of Sacramento County, including San Juan Water District, Sacramento Suburban Water District, and Rio Linda WD service areas	√		√
Central Valley Project Contract	American River	Municipal and Industrial	35,000	Zone 1	√		
PG&E Water Supply Agreement (2015)	Yuba and Bear Rivers	Irrigation and Domestic	100,400	Western Water System	√		√
PG&E (Zone 3) Purchase Agreement (1982)	Yuba and Bear Rivers	Irrigation and Domestic	25,000	Zone 3		√	
South Sutter WD Contract	Yuba River	Irrigation	12,000	Zone 5			√
Pre-1914 Appropriative Right (S000959)	Canyon Creek	Irrigation and Domestic	40 cfs (Max.)	Alta, Colfax, Monte Vista and rural areas (Not limited to Zone 3)	√	√	√
Pre-1914 Appropriative Right (S000967)	Tributary To Auburn Ravine	Irrigation and Stock watering	Not Stated	"Boardman Canal" Area	√	√	Maybe
Pre-1914 Appropriative Right (S010397)	South Fork Dry Creek Tributary to Coon Creek	Irrigation	Not Stated	Localized Irrigation Just East of Auburn	√	√	Maybe
Pre-1914 Appropriative Right (S010398)	North Fork Dry Creek Tributary to Coon Creek	Irrigation	Not Stated	Localized Irrigation Just East of Auburn	√	√	Maybe

The water supply that PCWA purchases from PG&E is used to meet both treated and raw water demands within PCWA's Western Water System. In 1968, PCWA purchased PG&E's lower Placer Water System, including its distribution canals and treated water systems as well as rights to delivery of 100,400 af/yr of water from PG&E's Drum-Spaulding Project to serve PCWA customers in the Western Water System area. This supply generally serves PCWA customers in Western Placer County.[10]

The Drum-Spaulding Project consists of 29 reservoirs, 6 major water conduits, 12 powerhouses as well as other infrastructure water, power, and recreation related facilities. In 2014, the Drum-Spaulding Project was divided into three distinct projects for purposes of Federal Energy Regulatory Commission (FERC): Upper Drum-Spaulding, Lower Drum, and

[10] The demarcation for Western Placer County is the service area line separating PCWA's Zone 3 from Zone 1 customers. For further information about this agreement please contact PCWA.

Deer Creek hydroelectric projects.[11] Although the systems are currently operating on annual FERC license renewals, when the final FERC licenses are issued they will have a term between 30 and 50 years.

PCWA and PG&E entered a new Water Supply Agreement on February 29, 2015. In Article II of the Agreement, PG&E will continue to deliver 100,400 acre-feet of water to PCWA from the Drum-Spaulding Project. PCWA will purchase this water during a water contract year from (Oct 1 to Sept 30 of the following year). PCWA is also entitled to purchase additional water if made available by PG&E.

The 2015 Water Supply Agreement terminates upon "the expiration date of the New FERC License...."[12]

In 1982, PCWA purchased the remainder of PG&E's Upper Placer Water System.[13] In the PG&E and PCWA Purchase Agreement, PG&E agreed to deliver as much as 25,000 acre-feet per year from PG&E's Drum Spaulding Project as part of the Upper Placer Water System conveyance.[14] PCWA typically acquires 10,000 acre-feet during average years. PCWA purchases water from PG&E at various buy points, and raw water is placed into PCWA's Boardman Canal, which begins near Alta and extends southwest along the Interstate 80 corridor to near Lake Theodore. From the Boardman Canal, PCWA delivers water to its four water treatment plant facilities located within Zone 3, other community water districts, and its raw water customers.

The Agreement has no termination date but does limit availability of water under certain conditions and maintenance needs. For instance, in Article 9, PG&E agrees – among other things – to use "due diligence in delivering water... but shall not be liable for curtailments of delivery caused by...actions or decisions by any governmental agency, officer or court, or other conditions beyond PG&E's reasonable control." Accordingly, PG&E will deliver water as it is available but has limited obligations under certain conditions.

The Upper Drum-Spaulding, Lower Drum, and Deer Creek hydroelectric projects are FERC licensed facilities and are thereby subject to the terms and conditions of the three FERC Licenses affecting their operations. In concert with the terms of these licenses, PG&E provides wholesale water to PCWA for consumptive uses in PCWA's service area. While federal law allows for FERC to adopt permit conditions that mandate minimum flows, reservoir levels or set temperature limitations related to operation of a hydroelectric facility, these provisions should not affect the appropriation and distribution of water for consumptive

[11] NID's Yuba-Bear hydroelectric project is also incorporated into the Final FERC EIS.
[12] 2015 Water Supply Agreement, Article I, paragraph 1.2
[13] Purchase Agreement between Pacific Gas and Electric Company and Placer County Water Agency dated November 17, 1982 (hereafter "PG&E and PCWA Purchase Agreement").
[14] PG&E and PCWA Purchase Agreement at Exhibit A.

purposes at this time.[15] Future conditions in the FERC License renewal process could impact deliveries for consumptive purposes.

PG&E's pre-1914 water rights and supplies delivered through its system under these water rights are highly reliable during normal, single-dry and multiple-dry year periods. Between 1987 and 1992, when the State of California generally experienced a drought, PCWA had a full Yuba/Bear river supply each year. In the 2015 water year, one of the driest years in California's history, PG&E delivered 76,119 acre-feet of water to PCWA – 68.9 percent of the 110,400 acre-feet that PCWA anticipates each year. This reduction represents significant supply reliability as compared to other sources of water in California in 2015 where supplies were reduced to a much greater extent (even zero in some instances).

Nevertheless, for conservative planning purposes, PCWA anticipates that it will experience a 50 percent reduction in its PG&E supply in single dry years and a 25 percent reduction in multiple dry years. PCWA has developed a raw water allocation strategy in the Western Placer System for dry-year shortage conditions. The dry-year shortage strategy also relies on the fact that commercial agricultural customers can more easily switch their source of supply in a dry year to groundwater. **Tables 3-3** through **Table 3-5** below show the reliability of the PG&E supplies under normal, single dry, and multiple dry conditions.

3.1.2 Permits 13856 and 13858

PCWA's North Fork American River water rights include direct diversion rights from the North Fork American River, Folsom Dam, and other locations within PCWA's Middle Fork American River Project (MFP) and storage rights in MFP reservoirs and subsequent rediverison rights of the stored water for irrigation, domestic, municipal, industrial, and recreational purposes. PCWA may divert water directly from the North Fork American River and Folsom Dam from November through June. The remainder of the year PCWA must redivert water released from its MFP reservoirs.

In 2014 and 2015, two of the driest years on record, PCWA's water rights were additionally curtailed from direct diversion or diversion to storage. The curtailments were from May 27 to November 19 in 2014 and from May 1 to November 6 in 2015, reducing the permitted diversion to storage season by 54 days in 2014 and 67 days in 2015.

The two water right permits provide water supplies to PCWA's treated and irrigation water customers from the American River Pump Station (ARPS) and to PCWA's wholesale customers from Folsom Dam. PCWA may use water under its permitted water rights in western Placer County, as well as portions of northern Sacramento County, including San Juan Water District, Sacramento Suburban Water District, and Rio Linda/Elverta Community

[15] 16 U.S.C. § 821.

Water District service areas. PCWA's wholesale customers include the City of Roseville, San Juan Water District, and the Sacramento Suburban Water District.

PCWA has signed an interim agreement with the United States Bureau of Reclamation (Reclamation) limiting its diversions under PCWA's permitted rights to 120,000 af/yr off the North Fork American River for use within the existing PCWA place of use.[16]

Extension of Time: California's SWRCB-governed water rights system consists of a three stage water right staged process – application, permit and then licensing of the water put to beneficial use at the end of the permit term. PCWA's water rights are in the permit stage, meaning that PCWA has not yet put the water supplies under its permit to full beneficial use. The water rights system allows for an extension of time to the permit term.

PCWA's North Fork American River Water Right Permit Nos. 13856 and 13858 state that the complete application of the water to the proposed use was to be made on or before December 1, 2007. PCWA did not fully utilize the water supply entitlements described in Water Right Permits 13856 and 13858 prior to the specified date. PCWA timely filed petitions for a 36-year extension of time in which to put water allocated under these permits to full beneficial use. The petitions were accepted by the State Water Board in January 2008 and are undergoing formal administrative review. To support State Water Board's decision on the petitions for extension of time, PCWA is preparing an Environmental Impact Report (EIR) to assess potential environmental impacts of diverting the full 120,000 af/yr[17] under interim Reclamation agreement as compared to the baseline diversion quantity it put to beneficial use prior to December 1, 2007 (41,991 af/yr). Although, PCWA anticipates approval of its petition by the State Water Board, the ultimate outcome of the process is yet to be determined.

ARPS Capacity: The recently completed (2008) American River Pump Station (ARPS) on the North Fork American River was designed to be expanded from its existing capacity of 100 cfs to 200 cfs to accommodate future demand, if needed. PCWA has used the ARPS (and its predecessor pumping stations) to meet agriculture and treated water demands within its Zone 1 and Zone 5 service areas. In 2015, PCWA diverted 24,000 af of water from the ARPS. The ARPS EIR analyzed diversion of 35,500 af/yr of North Fork American River water right water. Future diversion amounts of greater than 35,500 af/yr, if needed, would require additional environmental review. However, the EIR anticipated that PCWA may need to divert up to a total of 70,500 af/yr at ARPS to meet future demand. PCWA

[16] Permits 13856 and 13858 can be reviewed at https://ciwqs.waterboards.ca.gov/ciwqs/ewrims/EWServlet?Redirect_Page=EWWaterRightPublicSearch.jsp&Purpose=getEWAppSearchPage

[17] PCWA's diversions from the American River under its water rights permits are limited by agreement with the US Bureau of Reclamation; the actual total volume of PCWA's water rights permits is greater than 300,000 af/yr.

anticipates it will need to expand the use of the ARPS in the future to meet demands in Zone 1.

Water Forum Agreement: PCWA approved the Memorandum of Understanding for the Water Forum Agreement (WFA) in the year 2000. The WFA has two stated objectives: (1) to provide a reliable and safe water supply for the region's economic health and planned development to the year 2030, and (2) to preserve the fish, wildlife, recreational and aesthetic values of the lower American River.

Subject to certain conditions, terms in the WFA require PCWA to release up to 47,000 acre-feet of additional water in drier years through reoperation of MFP reservoirs (27,000 acre-feet for PCWA and 20,000 acre-feet for the City of Roseville) to replace water diverted above the WFA 1995 baseline volumes.[18] When projected March through November Unimpaired Inflow to Folsom Reservoir (UIFR) is between 950,000 acre-feet and 400,000 ac-feet, the amount of these additional water releases is linearly interpolated between 0 acre-feet and 47,000 acre-feet. When projected March through November UIFR is less than 400,000 acre-feet, it is considered a "conference year" where Water Forum participants meet to determine how best to manage the available water, recognizing that there may not be sufficient water to meet both deliveries and environmental release requirements specified in the agreement.

In the WFA, PCWA would make the releases contingent upon the following conditions:

- Its ability to transfer the released water for use below the Lower American River on terms acceptable to PCWA; and
- PCWA's determination that it has sufficient water in its reservoirs to make the additional releases in dry years without jeopardizing the supply for PCWA's customers.

The water that PCWA releases pursuant to the WFA is PCWA water rights water intended to be transferred to another party downstream of the lower American River and is not relinquished or abandoned water.

The North Fork American River water supplies are highly reliable in normal years. In some extreme years, climatic variability has affected the water supplies as well as the ability to store these water supplies in the Middle Fork Project reservoirs. Modeling indicates that at the end of a multi-year period a reduction of approximately 33 percent could occur. **Tables 3-3** through **Table 3-5** below indicate the supply reliability of these water assets under normal, single dry and multiple dry years.

[18] PCWA's baseline volume is 8,500 af/yr. The City of Roseville's baseline volume is 19,800 af/yr.

3.1.3 Central Valley Project Contract

PCWA has a Central Valley Project (CVP) water contract with the United States Bureau of Reclamation (Reclamation) for delivery of up to 35,000 af/yr for Municipal and Industrial purposes, including groundwater recharge programs that are consistent with applicable State law.[19] The term of the CVP contract, Amendatory Contract 14-060200-5082A, was through 2011, but included a long-term renewal provision. The contract has been extended through two-year interim renewal contracts since 2011 until a long-term renewal contract can be implemented by Reclamation. The long-term renewal is pending resolution of issues regarding environmental documentation associated with the CVP. The current interim contract is good through February 28, 2018.

PCWA's point of diversion for CVP water under the August 27, 2002 amendment is Folsom Dam, but the contract also includes potential for other diversions, including the Sacramento River, if the points of diversion are agreed to by the Contracting Officer. PCWA does not currently own or control facilities that are capable of conveying CVP water from Folsom Dam to the PCWA service area. As such, the availability of the water supply is currently affected by physical limitation. PCWA is engaged in negotiations with the City of Roseville and other regional entities to potentially utilize existing facilities to divert and deliver PCWA's CVP project water supplies.

The CVP contract identifies only a portion of PCWA's Zone 1 service area as the area available for water deliveries from CVP Project supplies. Some portions of PCWA's Zone 1 service area, including portions in Sacramento County, are not identified as delivery areas in the CVP contract map. The contract, however, specifies a procedure for administratively modifying the service area with Reclamation approval.

Article 3(b) of the CVP contract indicates that of the 35,000 af/yr identified in the contract, the amount of water that would likely be delivered in normal years is 32,000 acre-feet.[20] Reclamation reserves the right to apportion the available CVP water supply among PCWA and other CVP water contractors under Reclamation's Municipal and Industrial Water Shortage Policy (M&I WSP). The M&I WSP generally defines water service terms and conditions under drought conditions. The M&I WSP is valid through 2030. Generally, reductions in M&I deliveries should not exceed 25 percent, unless conditions are severe. In 2015, M&I WSP allocations on the American River watershed were 25 percent of the historical use – meaning 25 percent of the last three normal years' average use adjusted for identified variables. At present, PCWA has used only a very small amount of CVP water. In the future, PCWA will need to demonstrate a record of use of CVP water in normal years to have access to water in drought years.

[19] Contract No. 14-06-200-5082A-IR3 dated March 1, 2016.
[20] Contract No. 14-06-200-5082A-IR2

Several issues related to CVP water, including diversion facilities, the service area identified in the CVP contract, and M&I WSP drought year allocations will need to be addressed if the CVP contract water is to be utilized in PCWA's service area effectively.[21]

3.1.4 Pre-1914 Appropriative Rights

PCWA holds four pre-1914 appropriative water rights for diversion of water from various small creeks and their tributaries in western Placer County. PCWA has filed Statements of Diversion and Use (SOD) with the SWRCB for each water right: S000959, S000967, S010397 and S010398.[22] These rights are generally for agricultural purposes, including irrigation and stockwatering. In 2014, a relatively dry year, the combined diversion from pre-1914 water rights was 2,687 acre-feet.

3.1.5 South Sutter Water District

Historically PCWA has been party to a surplus water supply contract with South Sutter Water District (SSWD). Surplus SSWD water (purchased from Nevada Irrigation District [NID] in excess of its needs) was made available for irrigation purposes in PCWA Zone 5. PCWA is not currently receiving water from SSWD and does not anticipate receiving water during the time horizon of this UWMP.

3.2 Groundwater Supplies

PCWA has historically produced a limited quantity of groundwater. Historical pumping by PCWA in western Placer County was limited to pumping for Bianchi Estates (Zone 2) and for the Sunset Industrial area. Pumping for Bianchi estates ceased in 2004, with PCWA serving the area with surface water ever since. PCWA maintains the Sunset Industrial area wells, though these wells are in place for dry year supplies.

Pumping in western Placer County occurs from the North American subbasin of the Sacramento Valley groundwater basin (DWR Sub-basin 5-21.64). While PCWA does not currently produce groundwater from the subbasin, its water supply plans, as discussed later in this section, project the use of groundwater in dry hydrologic conditions if surface water supplies are limited.

3.2.1 Western Placer County GMP

On September 6, 2007, the Placer County Water Agency adopted the Western Placer County Groundwater Management Plan (WPCGMP).[23] The WPCGMP is designed to assist the City of Roseville, the City of Lincoln, PCWA, and the California American Water Company (Cal-

[21] In 2014 and 2015, the extreme drought was accompanied by state mandated demand restrictions.
[22] The latest SODUs on file with the SWRCB are for water year 2014.
[23] A copy of the Western Placer County Groundwater Management Plan is available on PCWA's website.

Am) in an effort to maintain a safe, sustainable and high-quality groundwater resource within a zone of the North American River Groundwater Sub-basin.[24] The objective of the WPCGMP is to maintain groundwater resources to meet backup, emergency, and peak demands without adversely affecting other groundwater uses within the WPCGMP area. Moreover, the purpose of the WPCGMP is to provide a framework to coordinate groundwater management activities through a set of basin management objectives and specific implementation actions.[25] The "WPCGMP Area," which is located in southwestern Placer County, is shown in **Figure 3-1**.[26]

3.2.2 PCWA Groundwater Use

PCWA does not anticipate utilizing groundwater to support its normal year water deliveries. Specifically, PCWA has two wells – the Sunset Well and the Tinker Well – each with a production capacity of 1,000 acre-feet per year. These wells are to be used for backup and dry-year supplies and therefore are accounted for as a single dry-year supply only, and not included in the water supply under average or multiple dry years.

3.3 Desalination

There are currently no plans to develop desalinated supplies within the PCWA service area.

3.4 Recycled Water Supplies

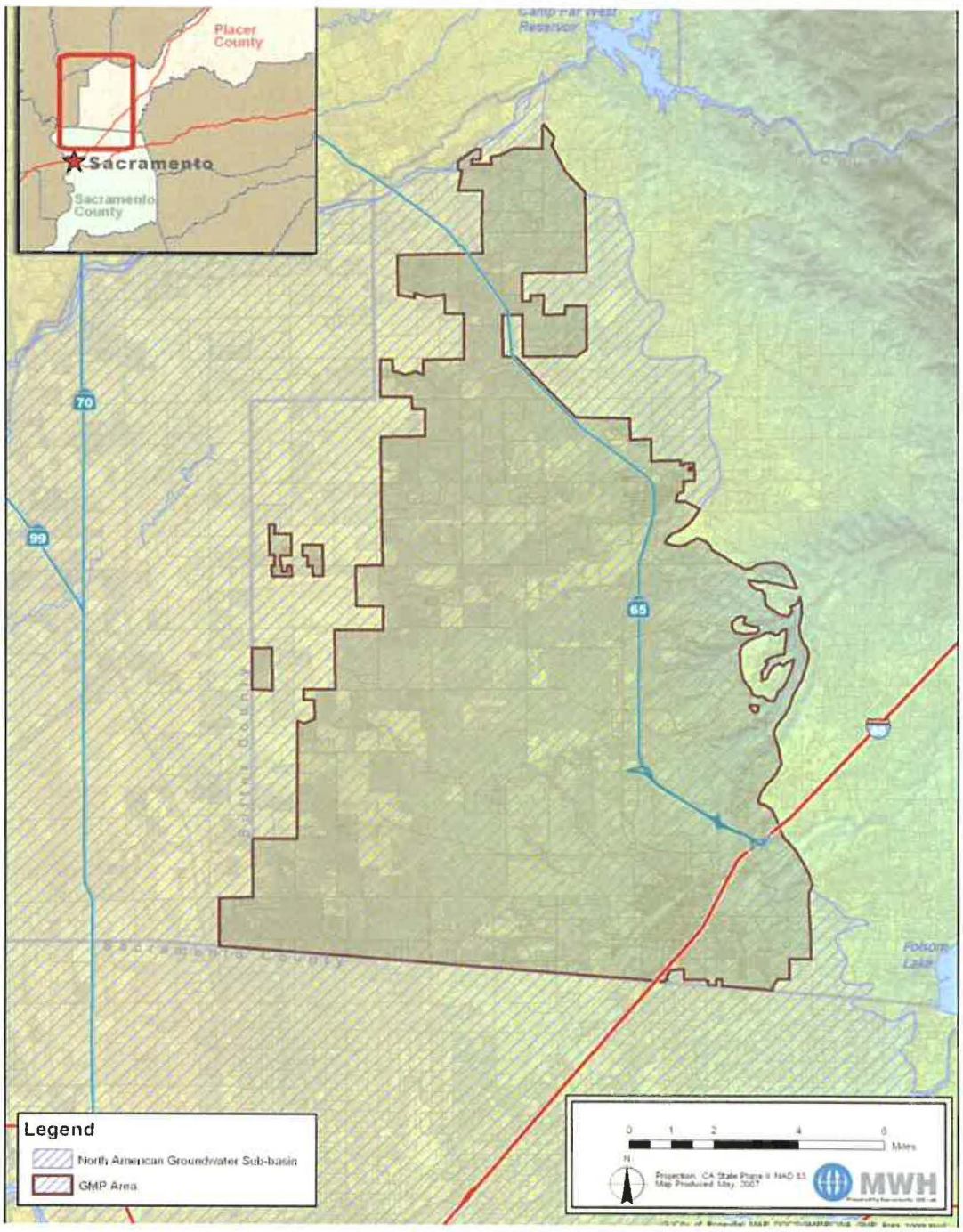
This subsection presents the recycled water supplies that PCWA anticipates will be developed and potentially available as a supply in its retail service area (see **Table 3-2**). However, these supplies would be provided through agreements with the City of Lincoln and the City of Roseville as potential users of recycled water produced at each cities respective wastewater treatment facility. PCWA anticipates the quantities shown in the table to be made available to meet part of the broad array of PCWA customer demands presented in Chapter 4, which include retail and wholesale customers adjacent to each City. The details of recycled water supply plans are being developed as part of on-going regional discussions.

Table 3-2 – Recycled Water Supplies

(values in af/yr)	Current	2020	2025	2030	2035	2040	BO
Potential Regional Recycled Water Supply	0	0	2,500	5,000	7,000	8,000	9,000

[24] WPCGMP, p. ES-1.
[25] WPCGMP, p. 1-3.
[26] Figure 3-1 appears as Figure 1-1 in the WPCGMP.

Figure 3-1 – Western Placer County GMP Planning Area



Tully & Young
Comprehensive Water Planning

Image Sources:
Western Placer County Urban Water Management Plan

3.5 Transfer and Exchange Opportunities

PCWA holds water rights and is party to contracts entitling it to water supplies that are adequate to meet its current and future projected needs. PCWA has historically transferred water outside of its service area in Placer and Sacramento Counties.

PCWA has transferred water pursuant to its commitments under the WFA as well as water made available through reservoir reoperations. PCWA's water transfers have made water available to areas in water deficit and have benefitted the lower American River.

PCWA may engage in future water transfers of its water to benefit areas with water supply deficits and to meet its commitments under the WFA. These transfer opportunities may include reservoir reoperation transfers, groundwater substitution transfers, conservation-based transfers, or any other transfer or exchange opportunity allowed by law.

3.6 Current and Projected Water Supplies

In normal years, PCWA anticipates its Zone 1 PG&E contract will provide a supply of 100,400 af/yr and its North Fork American River water rights will yield 120,000 af/yr. In addition, PCWA anticipates an additional 10,000 af/yr of water to be made available in Zone 3 through the 1982 PG&E contract. Beginning in the year 2025, PCWA anticipates its Central Valley Project contract will yield at least 32,000 af/yr. Also, PCWA's pre-1914 appropriative rights are available for deliveries in portions of Zone 3 and in Zone 1[27] and the estimated yield is 3,400 af/yr. PCWA anticipates that the SSWD supply will not be available in the future. Based on the recycled water analysis in **Section 3.4**, recycled water is projected to be available in the PCWA retail service area starting in 2025. These recycled water supplies would be derived from the City of Lincoln and City of Roseville to meet PCWA service area demands. **Table 3-3** summarizes PCWA's projected water supplies through 2045 or build-out.

3.7 Supply Reliability

This section presents the projected supplies available during normal, single and multiple dry year periods. The factors affecting the reliability of PCWA's water supplies are discussed in **Sections 3.1** and **3.2**. The single dry year supply values for the western and central areas of Placer County (i.e., Zones 1, 3, and 5) approximate the supplies that were available during the single driest year period in PCWA's recent history (1977). The multiple dry-year supply values approximate supply reductions during the recent 1990 to 1992 multi-year dry period.

[27] Operationally, PCWA typically uses its Pre-1914 water rights supply in Zone 1. Yet, because the supply may also be used in Zone 3, to the extent it is used in Zone 3, then the quantity of water used in Zone 3 is unavailable for use in Zone 1.

Table 3-3 – Projected Average Year Water Supplies[28]

Supply Source (values in acre-feet/yr)	2020	2025	2030	2035	2040	2045
MFP	120,000	120,000	120,000	120,000	120,000	120,000
CVP Contract	0	32,000	32,000	32,000	32,000	32,000
PG&E Agreements	110,400	110,400	110,400	110,400	110,400	110,400
Pre 1914 Appropriations	3,400	3,400	3,400	3,400	3,400	3,400
Recycled Water	0	2,500	5,000	7,000	8,000	9,000
Groundwater	0	0	0	0	0	0
Total Supply	233,800	268,300	270,800	272,800	273,800	274,800

3.7.1 Average Year Supply Reliability

Under average conditions, PCWA estimates it has a baseline quantity of 110,400 af/yr of PG&E water for uses in its service area. PCWA's modeling over an 82-year hydrologic record indicates that 120,000 af/yr will be available from the North Fork American River supply in average years. Based on Reclamation estimates of availability as written in PCWA's CVP contract and CalSim II modeling conducted by PCWA, PCWA estimates that 32,000 af/yr of CVP water will be available in average years. PCWA's pre-1914 appropriative rights will provide approximately 3,400 af/yr during average years. PCWA does not anticipate receiving water from SSWD. As buildout of the City of Lincoln and the planning areas west of the City of Roseville occurs, recycled water should be available in both average and dry years. **Table 3-3** above depicts PCWA's average year supply reliability in accordance with the technical estimates described in this section.

3.7.2 Single Dry Year Supply Reliability

In the worst case scenario, if hydrologic conditions were similar to those experienced during the 1977 drought year, PCWA estimates for planning purposes that only 50 percent of its recent PG&E use quantities will be available. Importantly, this level of cutback has never been realized as even in the extreme droughts of 2014 and 2015, PG&E was able to deliver 68.9 percent of the anticipated supplies. The full North Fork American River water supply would remain available (120,000 ac-ft) due to the ability to store and deliver supplies under this water permit. PCWA's CVP supply would likely be reduced by 50 percent of full contract allocations based on the Bureau of Reclamation's current municipal and industrial shortage policy. In a single dry year, the pre-1914 appropriative right supply quantity is assumed for purposes of this analysis to be reduced by 75 percent, given that the creeks from which PCWA diverts are runoff dependent. **Table 3-4** represents these assumptions.

[28] Article 9 of the PG&E 1982 Agreement provides 25,000 acre-feet is available to PCWA. PCWA takes 10,000 acre-feet to meet its current needs in normal years.

Table 3-4 – Single Dry Year Supply Reliability

Supply Source (values in acre-feet/yr)	2020	2025	2030	2035	2040	2045
MFP	80,400	80,400	80,400	80,400	80,400	80,400
CVP Contract	16,000	16,000	16,000	16,000	16,000	16,000
PG&E Agreements	55,200	55,200	55,200	55,200	55,200	55,200
Pre 1914 Appropriations	850	850	850	850	850	850
Recycled Water	0	2,500	5,000	7,000	8,000	9,000
Groundwater	2,000	2,000	4,000	4,000	5,000	5,000
Total Supply	154,450	156,950	161,450	163,450	165,450	166,450

Any potential shortfall in supply that may occur in Zone 1 under build-out conditions in a dry year may be addressed through groundwater production. Groundwater may be produced by overlying users and/or appropriators to meet demands, consistent with the GMP discussed in **Section 3.2**. In addition to groundwater, PCWA has various demand management mechanisms at its disposal to address supply shortages.

3.7.3 Multiple Dry Year Supply Reliability

During multiple dry year periods, PCWA anticipates that its PG&E supplies will be reduced by 25 percent each year. North Fork American River supply in the MFP would not be reduced. CVP supplies are assumed to be reduced by 25 percent. Pre-1914 water supply is assumed for purposes of this analysis to be reduced by 50 percent. **Table 3-5** represents these assumptions.

3.7.4 Supplementing Water Supplies

PCWA is investigating the potential of developing, jointly with other agencies, a diversion on the Sacramento River. This would potentially allow a mechanism for PCWA to divert its CVP water supply (or a portion of its supply) for use in Zone 1. The diversion would also open the potential for PCWA to exchange a portion of its North Fork American River supply, such that it would be able to divert exchanged water from a Sacramento River diversion to PCWA Zone 1. It is anticipated, however, that if a diversion and related facilities on the Sacramento River are constructed, it would not occur prior to 2025.

Table 3-5 – Multiple Dry Year Supply Reliability

Supply Source (values in acre-feet/yr)	2020	2025	2030	2035	2040	2045
MFP	120,000	120,000	120,000	120,000	120,000	120,000
CVP Contract	24,000	24,000	24,000	24,000	24,000	24,000
PG&E Agreements	82,800	82,800	82,800	82,800	82,800	82,800
Pre 1914 Appropriations	1,700	1,700	1,700	1,700	1,700	1,700
Recycled Water	0	2,500	5,000	7,000	8,000	9,000
Groundwater	0	0	0	0	0	0
Total Supply	228,500	231,000	233,500	235,500	236,500	237,500

3.7.5 Wholesale Water Supply Projections

The normal year surface water supplies that are available to PCWA's wholesale customers throughout western Placer County (Zone 1 and 5) and central Placer County (Zone 3) are the same as those depicted in **Table 3-3** above. Moreover, the dry year supply availability under PCWA's rights and entitlements available to its wholesale customers is also the same for its wholesale customers as depicted in **Tables 3-4** and **3-5** above.

CHAPTER 4. WATER DEMAND CONDITIONS

Understanding water demand characteristics enables PCWA to reliably and cost-effectively manage its water supplies to meet customer needs. This section characterizes the PCWA's retail and wholesale customer demands over the next few decades. Specific water demand characteristics such as how demands vary among different land use classifications and under differing hydrologic conditions, all help illustrate customer needs under changeable conditions. As such, this section is organized as follows:

- Review and refinement of the *2020 Urban Water Use Target* - This subsection presents the review and refinement of 2015 and 2020 water use targets as allowed under CWC §10608.20(g).[29]
- Compliance with *Interim 2015 Urban Water Use Target* – This subsection documents the derivation of the 2015 GPCD value and comparison to the 2015 interim target.
- Derivation of PCWA retail unit demand factors – This subsection presents the methodology and basis for various unit demand factors for unique land use classification that are used to derive future demand forecasts.
- Western Area demand summary – This subsection presents historic and forecast retail and wholesale demands within four subcategories (see discussion later) for the predominant service areas in Zone 1,[30] Zone 5 and the areas served by the City of Lincoln, San Juan Water District, Sacramento Suburban Water District, the City of Roseville, and several smaller wholesale customers.
- Zone 3 demand summary – This subsection describes the historic and future water demands for this foothill to intermountain zone of PCWA's service, including derivation of demand factors and future growth for retail and wholesale customers.
- Summary of current and forecast demands – This subsection presents the sum of forecast water demands for all PCWA service areas.

Because PCWA is both a retailer and wholesaler, serving both treated and raw water supplies to its customers in the Western Area and Zone 3, this UWMP classifies existing and forecast demands within four categories:

- "Retail treated" is water provided directly to PCWA's municipal and industrial customers and meets all requirements for potable water use,

[29] 10608.20(g): *An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).*
[30] Zone 1 includes the previous Zone 2 as it was connected to the Zone 1 system in 2003.

- "Irrigation" is water provided directly to PCWA retail customers that has not undergone any treatment, and is generally used by commercial agriculture and by rural residential customers for outdoor water needs,
- "Wholesale treated" is potable water treated at PCWA-owned water treatment facilities and sold to other water suppliers who then deliver to customers (PCWA does not directly serve the end-user), and
- "Untreated" is untreated water sold under contract to other water purveyors for subsequent treatment and delivery to the contractor's urban customers.

As described under each zones' section below, the methodology for determining future demand varies due to (1) the unique characteristics of each zone and (2) the availability of pertinent data associated with existing demands and anticipated growth. Furthermore, as discussed in relation to wholesale treated water demand and untreated water demand, contracts with retail water suppliers drive the ultimate demand from PCWA's perspective. As such, PCWA's near-term demand assessments require integrating the calculated customer demands of each retailer that may vary in both scope and methodology.

4.1 Review and Refinement of GPCD Targets

As detailed in PCWA's 2010 UWMP, retail population, residential connections, and water production data were used to generate a gallon per capita day (GPCD) baseline of 298 gpcd. From this GPCD baseline, PCWA assessed and determined a *2020 Urban Water Use Target* and an *Interim 2015 Urban Water Use Target*. These values were determined to be 241 and 270, respectively, as presented in the 2010 UWMP.[31]

According to the DWR Guidebook, a retail water purveyor who did not use actual 2010 Census data must re-calculate its baseline using the available 2010 Census data.[32] For PCWA's 2010 UWMP, the 2010 Census data was not fully available, causing PCWA to use other methods to estimate populations for baseline GPCD analysis.[33] When the 2010 Census data was available, PCWA reevaluated population estimates and recalculated its GPCD targets. That information has been used internally by PCWA in the intervening years between this 2015 UWMP and the 2010 UWMP to track annual GPCD values and progress toward 2015 and 2020 targets.

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[31] Placer County Water Agency 2010 UWMP, p. 4-38 (available at: http://www.water.ca.gov/urbanwatermanagement/2010uwmps/Placer%20County%20Water%20Agency/Placer%20Co%20WA%20Final%202010%20UWMP%20-%20Main%20document.pdf)

[32] "If an agency did not use 2010 U.S. Census data for its baseline population calculations in the 2010 UWMP (the full census data set was not available until 2012) the agency must re-calculate its baseline population for the 2015 UWMPs using 2000 and 2010 Census data. This may affect the baseline and target GPCD values calculated in the 2010 UWMP, which must be modified accordingly in the *2015 UWMP*." (2015 Urban Water Management Plans: Guidebook for Urban Suppliers, DWR, January 2016, p. 5-8)

[33] PCWA's 2010 UWMP used 2000 U.S. Census data and only calculated populations through 2009 using connection data and occupancy rates.

For this 2015 UWMP, PCWA has officially recalculated its baseline GPCD and re-established its target and interim-target values with the available 2010 Census data.[34] The UWMP Guidebook added detail to the population analysis procedures and DWR created an online population analysis tool. For many agencies, the addition of the population analysis tool becomes the clear choice for derivation of population as it is a simple method that is much more efficient than hand analysis of census tracts. For PCWA, the expansion of GIS capabilities since the 2010 UWMP means that population is now tracked annually by PCWA.

PCWA actually began a recalculation of the population numbers to include the 2010 census data in late 2011 after the complete data was available. Additionally, PCWA improved the quality of the analysis completed for the 2010 UWMP by using GIS software to examine census tracts rather than relying on hand marking on maps.[35] This GIS effort analyzed both the 2000 and 2010 census results to improve accuracy of boundary analysis. The result of the analysis provided a new population value for 2010 and, based upon the prior connection data, new population estimates for the period 1995 through 2010. In addition to improvements in population analysis, discrepancies in the gross water use numbers were identified. New population values divided into the revised gross water values provided revised GPCD values for this period. **Table 4-1** provides a comparison of the population and GPCD estimates from the 2010 UMWP and as revised using 2010 Census data.

Notably, the population was recalculated lower than the original values presented in the 2010 UWMP and the demand was revised slightly higher. This resulted in higher annual GPCD values than previously determined.

Using the revised annual GPCDs, new values were calculated for the six 10-year time periods ending no earlier than December 31, 2004 and no later than December 31, 2009. The comparative results are shown in **Table 4-2**. ***As expected, the use of 2010 Census data and revised gross water use data did have a significant effect on the estimated baseline values, increasing the highest average baseline value from 298 gpcd to a new value of 322 gpcd.*** Using the Method 4 target approach, discussed further below, the modified baseline GPCD generates a modified 2015 Interim GPCD Target and 2020 GPCD Target.

Pursuant to CWC 10608.20(g) PCWA may choose to select a different method for calculating its 2020 GPCD target. Upon review of the analysis in the 2010 UMWP that resulted in the choice of Method 4, and a reassessment of the Method 4 results using the updated baseline and population data, PCWA finds no reason to vary from the prior method choice. Thus, PCWA is officially using Method 4 to establish its 2020 GPCD target.

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[34] According to CWC Section 10608.20(g), PCWA may also re-assess the methodology chosen to determine its 2015 and 2020 GPCD targets and update these targets, even if the 2010 population data was appropriate.

[35] Hand analysis was the only method in 2010 that PCWA could do to comply with the Appendix A Alternative Methodology for Service Area Population of the 2010 UWMP Guidebook. The GIS based effort was able to complete a more accurate analysis in a similar method without the human error transposing between maps.

However, to accurately reflect the use of the 2010 Census data, PCWA will modify its 2020 GPCD Target to be 261 gpcd and its 2015 Interim GPCD Target to be 292 gpcd.

Table 4-1 – Revised Annual GPCD using 2010 Census Data

	From 2010 UWMP			For 2015 UWMP		
Year	Gross Water Use	Population	GPCD	Revised Gross Water Use	Revised Population	Revised GPCD
1995	19,004	60,000	283	19,004	54,744	310
1996	19,758	61,800	285	19,760	56,504	312
1997	22,976	63,800	321	22,976	58,458	351
1998	19,780	65,500	270	19,792	59,544	297
1999	24,022	69,000	311	24,061	62,851	342
2000	26,023	73,650	315	23,497	67,321	312
2001	26,815	78,294	306	26,918	72,056	334
2002	28,018	83,632	299	28,471	76,923	330
2003	27,846	87,941	283	27,911	81,149	307
2004	30,931	91,116	303	30,957	84,273	328
2005	27,657	92,770	266	27,632	85,942	287
2006	27,968	95,442	262	27,976	88,676	282
2007	29,313	96,909	270	29,338	90,312	290
2008	31,336	97,444	287	31,371	90,977	308
2009	28,671	97,887	261	28,671	91,832	279

Table 4-2 – Comparison of baseline and target values

Baseline Period	Baseline Values	
	Original	Revised
1995-2004	298	322
1996-2005	296	320
1997-2006	294	317
1998-2007	288	311
1999-2008	290	312
2000-2009	285	306

4.2 Compliance with 2015 Interim Target

Pursuant to CWC Section 10608.40, PCWA is to report to DWR on its progress in meeting its urban water use targets as part of its 2015 UWMP. As part of the progress reports, PCWA should include its "compliance daily per capita water use" (Compliance Value), which is the gross water use during the final year of the reporting period, reported in gallons per capita

per day (gpcd).[36] Documentation of the Compliance Value must include the basis for determining the estimates, including references to supporting data. Furthermore, pursuant to CWC Section 10608.24(a), PCWA must demonstrate that it has met its 2015 Interim GPCD Target as of December 31, 2015 through its calculation of its 2015 Compliance Value.

Extending the population analysis that was revised during the reassessment of the baseline GPCD, PCWA is able to calculate its 2015 Compliance Value. **Table 4-3** presents the extended population calculation for 2011 through 2015, the associated gross water use in each year, and the resulting annual GPCD.[37] As demonstrated, PCWA's 2015 Compliance Value is 203 gpcd, which is significantly below the 2015 Interim GPCD value of 292.

Table 4-3 – Annual GPCD for 2010 through 2015

Year	Population	Gross Water Use (af/yr)	GPCD
2010	91,648	26,518	258
2011	92,230	25,472	247
2012	92,994	28,135	270
2013	93,777	30,397	289
2014	96,004	24,773	230
2015	98,128	22,366	203

Though the 2015 Compliance Value seems impressive, PCWA recognizes this does not represent the actual progress toward its 2020 GPCD Target conditions due to two factors: (1) weather conditions in 2015, and (2) mandatory conservation requirements imposed by the State Water Resources Control Board. While normalizing for weather is recognized and suggested in statute,[38] with a tool available from DWR to perform the calculation, the State mandated conservation likely had a greater downward effect on the 2015 Compliance Value.

Although adjustments for weather are allowed, they are not required.[39] Because PCWA's 2015 Compliance Value demonstrates that PCWA is in compliance with the statutes, it has elected to not adjust the 2015 Compliance Value for weather. However, it has chosen to adjust the value to understand what 2015 GPCD conditions may have been absent the State conservation mandate so that it can appropriately assess progress toward its 2020 Target GPCD.

One option for PCWA to understand its progress toward the 2020 Target GPCD is to look at the most recent "average" year, which would be 2012 or 2013. In both of these years there

[36] CWC § 10608.12(e).
[37] PCWA's gross water use value is calculated as the total water entering PCWA's treatment plants minus the sales to wholesale treated water customers.
[38] CWC Section 10608.24(d)(1)(A)
[39] CWC Section 10608.24(d)(2)

were no mandatory conservation measures, weather was not significantly different than average conditions (though 2013 was the beginning of the current drought cycled), and the region was recovering from the recent recession. The GPCD values for 2012 and 2013 were 270 and 289 gpcd respectively, already below the revised 2015 Interim Target GPCD value of 292 gpcd and moving toward the revised 2020 GPCD Target of 261 gpcd (see **Table 4-3**).

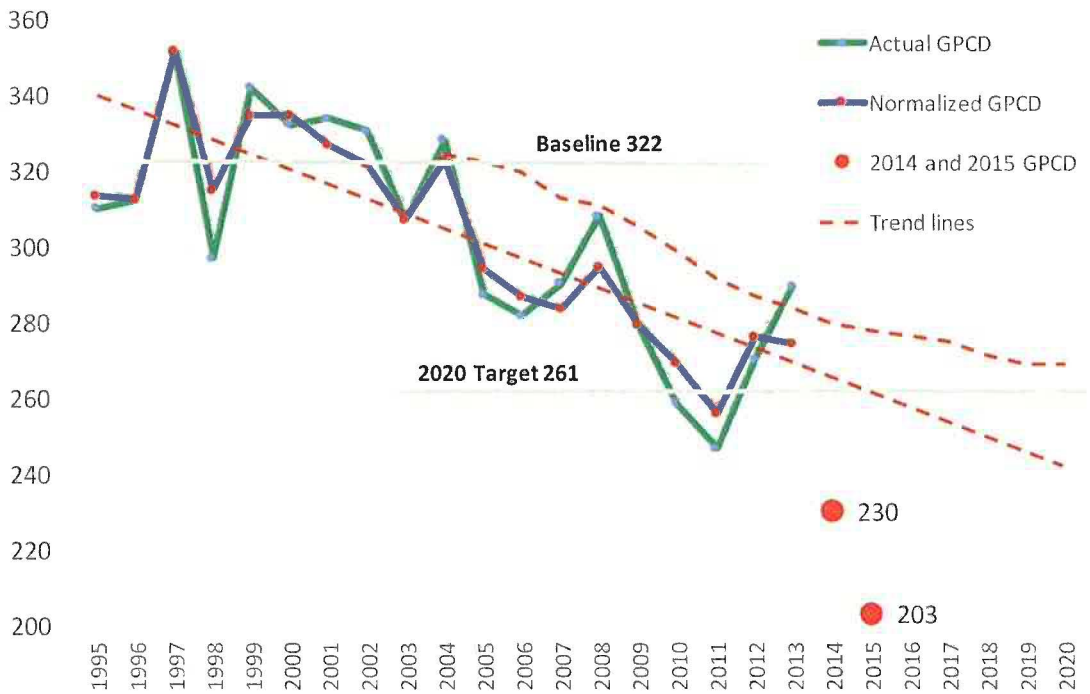
Another option is to adjust the 2015 GPCD value to remove the conservation achieved by PCWA during its efforts to comply with the State's mandate. The State had mandated PCWA meet a 32 percent conservation goal between June 2015 and February 2016. Through December 2015, PCWA successfully achieved a 31.5 percent cumulative savings (compared to 2013 conditions – which was the State's baseline).[40] There are multiple methods to normalize the 2015 water use for the months of June through December. Using a few simple multiplier approaches the actual gross water production in 2015 of 22,366 acre-feet could have increased to between 28,000 and 29,500, depending on the amount of "normalized" wholesale treated water deliveries that are also subtracted. But for illustrative purposes, using both of these values, the 2015 GPCD would adjust from 203 gpcd to between 255 and 268 gpcd. This normalized value is still well below the 2015 Interim GPCD Target, but either side of the 2020 GPCD Target.

A third option is to perform a weather normalized trend analysis of the GPCD values up to and including 2013. Using DWR's weather normalization tool, PCWA performed an analysis to determine allowable adjustments to each annual GPCD from 1995 through 2013. The results are displayed in **Figure 4-1**. The figure plots the actual GPCD value, the weather normalized value, the actual 2014 and 2015 GPCD values (as single points), and trend lines. Notably, because of many variables, even the normalized GPCD results in trends that indicate the likely success of meeting the 2020 GPCD Target, but just as likely to miss the target. The two depicted trend lines use (1) a linear trend extending the 1995 through 2013 normalized GPCD values through 2020, and (2) a 10-year running average for the same data set.

From the results of these three optional evaluations of trending, PCWA concludes that it is likely to achieve its 2020 GPCD Target when it reports the 2020 Compliance Value in its next UWMP update. But, it also recognizes that relaxing its current conservation efforts would create unnecessary risk.

[40]Based on report from the SWRCB available at: http://www.waterboards.ca.gov/water_issues/programs/conservation_portal/docs/2016feb/suppliercompliance_020216.pdf

Figure 4-1 – Analysis of Annual GPCDs and Potential Trends



4.3 Derivation of PCWA Retail Unit Demand Factors

A fundamental function of the 2015 UWMP is forecasting the future water demands of existing and new customers. Key to this derivation are "unit demand factors" that define the expected water use by residential dwelling unit or by non-residential acreage or account.

For PCWA's wholesale customers, these factors are less important since the demands are driven by contract or by the retail purveyor's own determinations of forecast demands (likely using its own unit demand factors). However, for PCWA's retail treated water customers, the unit demand factors are necessary for reasoned demand forecasting, and, more importantly, customer meter data is available that can help PCWA understand unit demands as they may vary throughout their service area and among differing land-use classifications.

There are several factors that affect the development of unit water demand for future new customers, which in turn affect the forecasted water demand for these customers. These factors also influence the future unit demand factors for existing customers, but to a lesser extent as explained later. Primary drivers affecting the unit demand factors for new customers – especially residential – range from state mandates such as the Cal Green Code and MWELO, to changes in the types of housing products being offered. The derivation and

resulting demand factors for existing customers and for new customers are explained under the respective subsections later in this chapter.

The following provides a brief description of the drivers that are generally recognized to result in lower per unit demand factors for future residential and non-residential customers than PCWA currently recognizes for existing customers.

4.3.1 Water Conservation Objectives:

On November 10, 2009, Governor Arnold Schwarzenegger signed SBX7-7, which required each urban water supplier to reduce their per-capita water use by 2020, with a statewide goal of achieving a 20-percent reduction by 2020.[41] As discussed previously, the PCWA has established a 2020 Target GPCD in response to this requirement and is tracking toward compliance with that target by 2020.

Achieving PCWA's 2020 conservation target will require the PCWA to continue its on-going conservation efforts, and perhaps enhance efforts to maintain success experienced in 2014 (though not as drastically as mandated by the State in 2015). New customers will likely further reduce PCWA's annual GPCD since the factors described below are designed to further reduce per capita water use.

4.3.2 Indoor Infrastructure Requirements

In January 2010, the California Building Standards Commission adopted the statewide mandatory Green Building Standards Code (hereafter the "CAL Green Code") that requires the installation of water-efficient indoor infrastructure for all new projects beginning after January 1, 2011. The Cal Green Code was revised in 2013 with the revisions taking effect on January 1, 2014. However these revisions do not have substantial implications to the water use already contemplated by the 2010 Cal Green Code.[42] The CAL Green Code applies to the planning, design, operation, construction, use and occupancy of every newly constructed building or structure.

All new developments must satisfy the indoor water use standards directed by the CAL Green Code, which essentially require new buildings and structures reduce overall potable water use by 20 percent. Expected future customers will satisfy the standards through the use of appliances and fixtures such as high-efficiency toilets, faucet aerators, on-demand water heaters, or other fixtures as well as Energy Star and California Energy Commission-approved appliances.

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[41] California Water Code § 10608.20

[42] "The 2010 CAL Green Code was evaluated for updates during the 2012 Triennial Code Adoption Cycle. The state evaluated stakeholder input, changes in technology, implementation of sustainable building goals in California, and changes in statutory requirements. As such, the scope of the CAL Green Code was increased to include both low-rise and high-residential structures, additions and alterations." *Guide to the 2013 California Green Building Standards Code (Residential)*, California Department of Housing and Community Development, 2013.

4.3.3 California Model Water Efficient Landscape Ordinance

The Water Conservation in Landscaping Act was enacted in 2006, requiring the California Department of Water Resources (DWR) to update the Model Water Efficient Landscape Ordinance (MWELO).[43] In 2009, the Office of Administrative Law (OAL) approved the updated MWELO, which required a retail water supplier or a county to adopt the provisions of the MWELO by January 1, 2010, or enact its own provisions equal to or more restrictive than the MWELO provisions.[44]

In response to the Governor's executive order dated April 1, 2015, (EO B-29-15), DWR updated the MWELO and the California Water Commission approved the revised MWELO on July 15, 2015. The changes include a reduction to 55 percent for the maximum amount of water that may be applied to a landscape for residential projects, which reduces the landscape area that can be planted with high water use plants, such as turf. The MWELO applies to new construction with a landscape area greater than 500 square feet (the prior MWELO applied to landscapes greater than 2,500 sf).[45] For residential projects, the coverage of high water use plants is reduced to 25 percent of the landscaped area (down from 33 percent in the 2010 MWELO).

It is difficult to predict the ultimate impact of the MWELO requirements on future water demand. While the requirement is for development of a landscape design plan that uses plants and features that are estimated to use no more than 55 percent of ETo, some provision must be made for the inherent tendency to over-water even with irrigation controllers installed, piecemeal changes in landscape design, reductions in irrigation efficiency through product use, and limited resources for enforcement in the absence of dedicated irrigation meters.

4.3.4 California Urban Water Conservation Council BMPs

PCWA is a signatory to the California Urban Water Conservation Council (CUWCC) Best Management Practices (BMP) Memorandum of Understanding (MOU). Due to this affiliation, PCWA has implemented CUWCC BMPs. These practices further reduce PCWA's demands. Further details on PCWA's conservation efforts can be found in **Chapter 5**.

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[43] Gov. Code §§ 65591-65599

[44] California Code of Regulations (CCR), Tit. 23, Div. 2, Ch. 27, Sec. 492.4. The MWELO provides the local agency discretion to calculate the landscape water budget assuming a portion of landscape demand is met by precipitation, which would further reduce the outdoor water budget. For purposes of this 2015 UWMP, precipitation is not assumed to satisfy a portion of the outdoor landscape requirement because the determination of an appropriate effective precipitation factor is highly uncertain given the various landscape slopes, terrain composition, concurrent watering schedules, etc.

[45] CCR Tit. 23, Div. 2, Ch. 27, Sec. 490.1.

4.4 Western Area Water Demands

Although considered independent water service areas by PCWA, Zone 1 and Zone 5 are presented together in anticipation of future urban growth in Zone 1, which will displace some of the land uses currently in Zone 5 – a zone that currently only includes raw water demands for commercial agricultural and rural irrigation. The geographic service areas of San Juan Water District, Sacramento Suburban Water District, and the City of Roseville are also included, since these purveyors share in the use of Middle Fork water rights (see Chapter 3). As presented in **Chapter 2** (see **Figure 2-1**), Zone 1 is the largest zone in the PCWA service area and extends from the Placer County line south of the city of Roseville north to Lincoln and east to Auburn. Zone 5 is an agricultural area west of Zone 1 that stretches north nearly to Camp Far West Reservoir.

Currently, approximately thirty percent of the water demands in Zone 1 is treated water for urban uses, while the remaining two thirds is for raw water used for commercial agricultural and rural residential irrigation, or is sold to other agencies within the Western Area. Zone 5 is supplied through Zone 1 facilities and is completely untreated agricultural water.[46] Anticipated urban development westward from Zone 1 into Zone 5 could potentially affect both the ratio of service type in Zone 1 as well as add a treated water demand into Zone 5.

The discussion that follows has been subdivided into the following sections to facilitate the presentation of data and methods used to derive the future demand projections for these service areas:

- Historical water demands – this includes information on demands and trends from the historical records.
- Retail treated water demands – this includes information on current and future land-uses and service connections, current and future unit demand factors, and projected future demands.
- Other Retail Canal Deliveries – this includes information on customer type as well as current and future demands for many of the rural customers that receive raw water delivered through PCWA's network of canals and ditches.
- Wholesale treated water demands – this includes information on the contractual obligations to water purveyors as well as current and future demands.
- Wholesale raw water demands – this includes information on the contractual obligations to San Juan Water District, Sacramento Suburban Water District and the City of Roseville, as well as current and future demands.

[46] Based on approximation from 2013 Water Sales Report

4.4.1 Historical Demands in the Western Area

Based on available records for water production, water sales and deliveries, **Table 4-4** reflects the magnitude and trends in the four types of water demands present in the Western Area of PCWA's service area.[47] Records for demands in Zone 5 only exist back to the year 2000 when Zone 5 was created to supply raw surface water to agriculture and rural areas of western Placer County.

Table 4-4 – Western Area Overall Historic Water Demands

Customer Classification	2011	2012	2013	2014	2015
Zone 1					
Retail treated	24,784	27,345	29,628	24,096	20,240
Retail untreated	50,596	55,421	60,612	43,622	44,820
Wholesale treated sales	7,914	8,712	11,115	9,389	7,921
Zone 5					
Commercial Agriculture	1,210	12,031	12,433	95	10,137
Zone 1/5 Subtotal	84,504	103,509	113,788	77,202	83,118
Wholesale untreated sales	24,591	12,133	20,327	21,089	18,638
Western Area Total	**109,095**	**115,642**	**134,115**	**98,291**	**101,756**

4.4.2 Retail Treated Water Demand in Zone 1

Retail treated water demands are a significant component of PCWA's long-term planning. Although representing less than one quarter of PCWA's current demands in the Western Area, this demand category will see the greatest percentage increase over the next several decades as a result of anticipated growth of urban areas within Placer County. Because of this anticipated increase in total water demand, understanding the characteristics of current demands and the anticipated characteristics of future demands requires detailed analysis. The primary characteristics that define retail treated demand are (1) the urban land uses and associated water service connections, and (2) the unit demand factors associated with each class of land use. **Chapter 2** presented the anticipated growth in the urban land use classifications within each of the PCWA retail service subareas in Zone 1, along with a brief description of Zone 3 land use projections.

As the largest retail service zone in PCWA's system, the importance of accuracy of retail treated analysis in Zone 1 is important. The calculated values in Zone 1 treated retail have

[47] The Western Area includes retail treated, irrigation and wholesale treated deliveries in Zone 1, irrigation deliveries in Zone 5, and untreated water sales to other agencies within or adjacent to Zone 1 and Zone 5.

the most impact on usage numbers as changes in values of other service areas result in only slight variances. Zone 1 retail treated water demands account for over 96 percent of the retail treated demands in the entire PCWA service area.[48]

4.4.2.1 Existing Retail Treated Water Customers

Table 2-5 presented the representative existing and build-out residential dwelling units and non-residential acres anticipated to occur within the PCWA Zone 1 subareas (see **Figure 2-2**).

These existing customers have certain characteristics in their existing water use, as represented by existing unit demand factors (see **Section 4.3**). Using account information and meter data, PCWA used its GIS tools to link the lot size designations with 2013 customer meter data, generating average demand factors for each lot-size for both the upper and lower portions of Zone 1. This information provides a baseline for estimating the future demands of existing customers. **Table 4-5** provides the baseline demand factors for each land use category using 2013 account and meter data. The land use categories are presented by residential lot size for upper Zone 1 customers and lower Zone 1 customers, since these areas have varied climates and demographics, as described previously. Additionally, for purposes of estimating average existing demand factors by lot size, PCWA grouped the lot-size data from each of the Zone 1 subareas to generate an average unit demand factor for each unique residential lot size as well as several non-residential land-use types. This grouping is reflected in **Table 4-5**.

PCWA believes 2013 was more representative of average conditions, and understood that the data would be skewed if 2014 or 2015 customer use data were used for baseline conditions.

Existing customers' future unit demand factors are assumed to change mostly from drivers such as general homeowner fixture replacements and upgrades, PCWA's conservation awareness and incentive programs, and other factors affecting a general increased awareness of water conservation (see **Section 4.3**). A reflection of the impact of these drivers is presented as the unit demand factors for new residences. The future unit demand factors reflect a reduction from the current value in all categories resulting from conservation rates indicated in the far right column of the table. This reduction is reasonable as it reflects expected benefits of on-going PCWA and customer conservation efforts, coupled with the use of 2013 for baseline conditions.

[48] Based on 2013 PCWA sales report.

Table 4-5 – Existing Customer Characteristics

	Land-class	Existing Customers: Current Number of Connections or Acres	Current Demand Factors (af/unit)	Future Demand Factors (af/unit)	Conservation
Upper Zone 1	Residential (dwelling units)				
	<2.9k (SF 1)	259	0.16	0.16	0%
	2.9k-4.4k (SF 2)	197	0.25	0.25	1%
	4.4k-5.5k (SF 3)	201	0.28	0.27	3%
	5.5k-7k (SF 4)	487	0.32	0.31	2%
	7k-10k (SF 5)	1,463	0.42	0.41	3%
	10k-17k (SF 6)	2,356	0.55	0.54	2%
	17k-35k (SF 7)	1,066	0.69	0.67	2%
	35k-90k (SF 8)	350	0.65	0.62	4%
	>90k (SF 9)	332	0.67	0.64	4%
Lower Zone 1	Residential (dwelling units)				
	<2.9k (SF 1)	581	0.18	0.17	5%
	2.9k-4.4k (SF 2)	693	0.30	0.29	4%
	4.4k-5.5k (SF 3)	1,000	0.39	0.38	2%
	5.5k-7k (SF 4)	4,454	0.47	0.46	2%
	7k-10k (SF 5)	6,725	0.54	0.52	3%
	10k-17k (SF 6)	4,086	0.68	0.66	3%
	17k-35k (SF 7)	1,495	0.88	0.85	4%
	35k-90k (SF 8)	1,093	1.30	1.26	3%
	>90k (SF 9)	1,044	0.99	0.96	3%
All Zone 1	Multi-family (dwelling units)				
	MF 20.1+ DU/Ac.	2,662	0.22	0.21	5%
	MF 15.1-20 DU/Ac.	6,210	0.23	0.22	4%
	Non-residential (accounts and acres)				
	Commercial	1,750	1.72	1.63	5%
	Industrial	173	2.40	2.40	0%
	Municipal	1,044	1.15	1.15	0%
	Landscape-Greenbelt	1,044	2.20	2.09	5%

4.4.2.2 Future Retail Treated Water Customers

As previously indicated, the Zone 1 retail service will experience the largest growth of all PCWA customer categories, with urban retail customer growth as represented in **Table 2-5**.

When considering the various factors discussed in **Section 4.3**, coupled with a review of current customer use characteristics discussed in the prior section, PCWA has established unit demand factors it expects represent the average needs of each new customer. These assumed unit demand factors are presented in **Table 4-6** along with the representative future

increment of new customers within each land-use classification for the upper and lower areas of Zone 1.

Table 4-6 – Anticipated New Retail Customers and Demand Factors

	Land-class	New Customers (Accounts or Acres)	Future Demand Factors (af/account)
Upper Zone 1	Residential (dwelling units)		
	<2.9k (SF 1)	--	0.16
	2.9k-4.4k (SF 2)	2,369	0.22
	4.4k-5.5k (SF 3)	568	0.25
	5.5k-7k (SF 4)	1,139	0.30
	7k-10k (SF 5)	1,409	0.40
	10k-17k (SF 6)	1,015	0.50
	17k-35k (SF 7)	19	0.60
	35k-90k (SF 8)	--	0.60
	>90k (SF 9)	1,570	0.60
Lower Zone 1	Residential (dwelling units)		
	<2.9k (SF 1)	--	0.16
	2.9k-4.4k (SF 2)	16,474	0.26
	4.4k-5.5k (SF 3)	6,914	0.35
	5.5k-7k (SF 4)	825	0.44
	7k-10k (SF 5)	731	0.48
	10k-17k (SF 6)	2,112	0.60
	17k-35k (SF 7)	938	0.80
	35k-90k (SF 8)	2,065	1.10
	>90k (SF 9)	144	0.85
All Zone 1	Multi-family (dwelling units)		
	MF 20.1+ DU/Ac.	60	0.20
	MF 15.1-20 DU/Ac.	9,682	0.04
	Non-residential (accounts and acres)		
	Commercial	1,872	1.25
	Industrial	3,745	2.00
	Municipal	480	1.15
	Landscape-Greenbelt	1,295	1.20

Coupling the demand factors with the increment of new customers provides a basis for estimating new Zone 1 retail customer demands at build-out. However, **Table 2-5** only presented the expected build-out conditions for each Zone 1 subarea, not incremental growth aligned with the required 5-year demand forecasting time horizons. To develop demand forecasts for each 5-year horizon, PCWA needed to identify an incremental annual growth rate. Because growth is unlikely to be consistent throughout the many different residential and non-residential land classifications, or within the various subareas, PCWA established

unique growth assumptions by land classification for the generalized lower and upper Zone 1 areas. These values are presented in **Table 4-7**.

Table 4-7 – Assumed Growth Rates for Demand Forecasting

	Land-class	Incremental Growth to 2020	Annual Growth Rate beyond 2020	Resulting 5-year Growth Rate
Upper Zone 1	Residential (dwelling units)			
	<2.9k (SF 1)	0%	0%	0%
	2.9k-4.4k (SF 2)	5%	4%	19%
	4.4k-5.5k (SF 3)	3%	3%	16%
	5.5k-7k (SF 4)	2%	3%	16%
	7k-10k (SF 5)	1%	4%	19%
	10k-17k (SF 6)	2%	2%	10%
	17k-35k (SF 7)	2%	3%	16%
	35k-90k (SF 8)	0%	0%	0%
	>90k (SF 9)	0%	3%	16%
Lower Zone 1	Residential (dwelling units)			
	<2.9k (SF 1)	0%	0%	0%
	2.9k-4.4k (SF 2)	15%	3%	16%
	4.4k-5.5k (SF 3)	10%	3%	16%
	5.5k-7k (SF 4)	5%	1%	5%
	7k-10k (SF 5)	3%	4%	19%
	10k-17k (SF 6)	1%	2%	10%
	17k-35k (SF 7)	1%	3%	16%
	35k-90k (SF 8)	1%	5%	28%
	>90k (SF 9)	1%	1%	5%
All Zone 1	Multi-family (dwelling units)			
	MF 20.1+ DU/Ac.	0%	20%	100%
	MF 15.1-20 DU/Ac.	3%	4%	12%
	Non-residential (accounts and acres)			
	Commercial	3%	3%	15%
	Industrial	3%	2%	10%
	Municipal	3%	2%	10%
	Landscape-Greenbelt	0%	3%	15%

The resulting 5-year incremental new customer demands are presented in the next section.

4.4.2.3 Zone 1 Retail Distribution System Losses

The demand factors presented in the *Zone 1 Retail Demand Summary* represent the demand for water at each customer location. To fully represent the demand, distribution system losses must also be included. Often, distribution system losses water represents water that is lost due to system leaks, fire protection, construction water, unauthorized connections, and inaccurate meters. Essentially, this is the water that is treated by PCWA that does not make it to the customer – either as a real loss or an apparent loss (e.g. such as may result when a customer meter underreports actual use).

In most instances, the predominant source of distribution system losses is from leaks that inevitably exist throughout the many miles of pipes and fitting that bring water to PCWA's customers.

Pursuant to CWC 10631(e)(3)(B), PCWA must quantify and report the distribution system loss for 2015 using methodology developed by the American Water Works Association (AWWA) and provided as a worksheet through DWR. Using the available worksheet, PCWA calculated a loss equal to 8.2 percent of the water supplied into the distribution system. The AWWA spreadsheets are included as **Appendix A-4**.

For purposes of estimating future demand from new connections, the distribution system loss is assumed to be 8 percent to reflect on-going PCWA programs to find and fix identified system leaks and to address meter inaccuracies.[49]

4.4.2.4 Summary of Zone 1 Retail Demands

Water demand projections within PCWA's service area reflect the combination of continued conservation by existing customers and the addition of new customers over the planning horizon. **Table 4-8a** and **Table 4-8b** provide the summation of this analysis and the resulting expected demands for each 5-year planning horizon by the designated land classifications. This information meets the requirements of the UWMPA.[50]

However, as a more usable representation of build-out demand forecasts, PCWA redistributed the grouped land-use based estimates back into their respective Zone 1 subareas (see **Figure 2-2**). Redistributing these demands to each Zone 1 subarea provides a practical comparison of existing and future demands by subarea. **Table 4-9** presents the results.

[49] For purposes of estimating this quantity when viewed from the customer meter looking back to the "beginning" of the water supply distribution system, a slightly higher value is multiplied by the customer demands, then added to those demands to reflect a total projected demand.
[50] CWC Section 10631(e)(2).

Table 4-8a – Zone 1 Retail Treated Demand Summary (Part 1)

	Land-class		Forecast Demand (af/yr)						
			2020	2025	2030	2035	2040	2045	Buildout
Upper Zone 1	Single Family (dwelling units)								
	<2.9k (SF 1)	Existing	42	42	42	42	42	42	42
		Future	0	0	0	0	0	0	0
	2.9k-4.4k (SF 2)	Existing	49	49	49	49	49	49	49
		Future	26	124	222	320	418	516	521
	4.4k-5.5k (SF 3)	Existing	54	54	54	54	54	54	54
		Future	4	27	49	72	95	117	142
	5.5k-7k (SF 4)	Existing	151	151	151	151	151	151	151
		Future	7	61	116	170	224	279	342
	7k-10k (SF 5)	Existing	600	600	600	600	600	600	600
		Future	4	114	224	334	444	554	564
	10k-17k (SF 6)	Existing	1,272	1,272	1,272	1,272	1,272	1,272	1,272
		Future	24	146	269	391	508	508	507
	17k-35k (SF 7)	Existing	714	714	714	714	714	714	714
		Future	4	11	11	11	11	11	11
	35k-90k (SF 8)	Existing	217	217	217	217	217	217	217
		Future	0	0	0	0	0	0	0
	>90k (SF 9)	Existing	213	213	213	213	213	213	213
		Future	0	150	300	449	599	749	942
Lower Zone 1	Single Family (dwelling units)								
	<2.9k (SF 1)	Existing	99	99	99	99	99	99	99
		Future	0	0	0	0	0	0	0
	2.9k-4.4k (SF 2)	Existing	201	201	201	201	201	201	201
		Future	373	768	1,163	1,558	1,953	2,348	2,484
	4.4k-5.5k (SF 3)	Existing	380	380	380	380	380	380	380
		Future	242	627	1,012	1,396	1,781	2,166	2,420
	5.5k-7k (SF 4)	Existing	2,049	2,049	2,049	2,049	2,049	2,049	2,049
		Future	98	198	197	197	197	197	363
	7k-10k (SF 5)	Existing	3,497	3,497	3,497	3,497	3,497	3,497	3,497
		Future	11	76	142	208	274	340	351
	10k-17k (SF 6)	Existing	2,697	2,697	2,697	2,697	2,697	2,697	2,697
		Future	25	279	534	789	1,044	1,244	1,267
	17k-35k (SF 7)	Existing	1,271	1,271	1,271	1,271	1,271	1,271	1,271
		Future	12	202	392	582	750	750	750
	35k-90k (SF 8)	Existing	1,377	1,377	1,377	1,377	1,377	1,377	1,377
		Future	12	344	676	1,008	1,340	1,671	2,272
	>90k (SF 9)	Existing	1,002	1,002	1,002	1,002	1,002	1,002	1,002
		Future	14	59	104	122	122	122	123

Table 4-8b – Zone 1 Retail Treated Demand Summary (Part 2)[51]

Land-class			Forecast Demand (af/yr)						
			2020	2025	2030	2035	2040	2045	Buildout
All Zone 1	Multi-family (dwelling units)								
	MF 20.1+ DU/Ac.	Existing	559	559	559	559	559	559	559
		Future	0	12	12	12	12	12	12
	MF 15.1-20 DU/Ac.	Existing	1,366	1,366	1,366	1,366	1,366	1,366	1,366
		Future	58	290	523	755	988	1,220	1,936
	Non-residential (accounts and acres)								
	Commercial	Existing	2,853	2,853	2,853	2,853	2,853	2,853	2,853
		Future	70	421	1,272	2,123	3,271	3,622	4,137
	Industrial	Existing	415	415	415	415	415	415	415
		Future	225	974	1,723	2,472	3,221	3,970	7,490
	Municipal	Existing	1,200	1,200	1,200	1,200	1,200	1,200	1,200
		Future	17	72	127	182	237	293	552
	Landscape-Greenbelt	Existing	2,181	2,181	2,181	2,181	2,181	2,181	2,181
		Future	4	53	212	509	877	1,179	1,319
	Other Uses	Existing	500	500	500	500	500	500	500
		Future	50	125	250	375	500	500	500
Totals	Total Residential	Existing	17,809	17,809	17,809	17,809	17,809	17,809	17,809
		Future	912	3,489	5,946	8,376	10,760	12,805	15,007
	Total Non-Residential	Existing	7,149	7,149	7,149	7,149	7,149	7,149	7,149
		Future	366	1,645	3,584	5,662	8,106	9,563	13,998
	Total	Existing	24,959	24,959	24,959	24,959	24,959	24,959	24,959
		Future	1,278	5,134	9,529	14,038	18,866	22,368	29,005
	Total Zone 1 Customer Demands		**26,200**	**30,100**	**34,500**	**39,000**	**43,800**	**47,300**	**54,000**
	Distribution System Losses		2,360	2,710	3,110	3,510	3,940	4,260	4,900
	Regional Buffer						2,000	3,000	4,000
	Zone 1 Retail Treated System Demand		**28,600**	**32,800**	**37,600**	**42,500**	**49,700**	**54,600**	**63,000**

4.4.2.5 Zone 1 Regional Demand Buffer

Table 4-9 represents estimated land-use growth and demand by the subareas defined in **Figure 2-2**. Because the planning horizon assumed by the land-planning authorities in the County is not always consistent (e.g. projections vary from 2030 to 2050), and some anticipated projects emerge and disappear between UWMP updates (e.g. the proposed Curry Creek project was in the 2010 UWMP but is currently inactive), future land-planning updates may identify growth in the Western Area not currently contemplated. To accommodate this potential additional demand, PCWA has established a placeholder of 2,000 acre-feet of annual demand beginning in 2040, expanding to 4,000 acre-feet by build-out conditions.[52]

[51] The forecast commercial value includes demands for the Regional University, a proposed mixed-use project that includes residential and non-residential features. The project's estimated demand is presented in Table 4-9.
[52] The assumed buffer of 2,000 acre-feet through 2040 is the approximate difference between PCWA's prior estimate of the Curry Creek area, which included the Regional University area, and the current estimate of only the Regional University area (see Table 4-9). The next 2,000 acre-feet of buffer accounts for infill between master planned development projects between 2040 and buildout.

Table 4-9 – Summary of Zone 1 Retail Treated Demand by Subarea

Zone 1 Subarea	Customer Demand		System Demand	
	Existing Demand	Future Demand	Existing (10% loss)	Future (8% loss)
Upper Zone 1	(acre-feet/year)			
Auburn/Bowman	1,736	4,109	1,927	4,478
City of Auburn	2,615	3,510	2,903	3,826
City of Auburn (Airport)	173	480	192	523
Newcastle/Ophir	2	432	2	471
Unincorp. Area C (Newcastle)	440	2,266	488	2,470
Lower Zone 1				
Bickford Ranch	0	1,318	0	1,437
Horseshoe Bar/Penryn	669	3,448	742	3,758
Unincorp. Area B (Loomis Basin)	2	81	2	88
Town of Loomis	1,665	2,812	1,848	3,065
Granite Bay	670	763	744	832
City of Rocklin	12,551	17,378	13,932	18,942
Whitney Ranch	943	2,156	1,047	2,350
City of Roseville (PCWA)	490	624	544	681
Sunset Industrial Area	1,505	8,859	1,670	9,656
Total Zone 1				
Regional University	0	1,796	0	1,958
		Greenbelts	2,180	3,820
		Regional Buffer	0	4,000
		Other	500	1,000
		Grand Total Retail	**28,700**	**63,000**

4.4.3 Irrigation (Untreated) Water Demand in Zone 1 and Zone 5

Irrigation water is sold by PCWA directly to end-users. This supply is a non-potable supply generally used for commercial agriculture, irrigation customers, landscape greenbelts, and metered irrigation. The information presented below provides further details about these customers, their current demands, and projections of future demands. The resulting demand forecasts are included in **Table 4-10**. In total, the Zone 1 and Zone 5 irrigation water service currently represents about 70 percent of the total Zone 1 and Zone 5 water sales by volume, but represents many fewer accounts – about 3,600 accounts compared to 33,000 retail treated water accounts.[53]

[53] 2013 PCWA "Water Revenue and Sales Report"

- Commercial Agriculture - Commercial agriculture is supplied to a little over 300 accounts and represents nearly 30 percent of the Zone 1 and Zone 5 irrigation water demands.[54] With planned growth by the City of Lincoln westward into Zone 5, PCWA expects the Zone 5 demands to decrease over the next twenty to thirty years – dropping from a current area of about 4,400 acres to about 1,800 acres.[55] This has an associated reduction in demand over time, as presented. In contrast to Zone 5, the water demands from the Zone 1 commercial agricultural customers are expected to remain similar to current sales and are kept constant through this UWMPs planning horizon.
- Irrigation Customers – With over 3,100 accounts, irrigation customers represent nearly 60 percent of the Zone 1 irrigation water sales.[56] These customers include the many rural residences within Zone 1 that receive "ditch water" for use in gardens, for landscaping, for small pastures, to maintain stock water sources and small ponds, and other rural residential needs. For purposes of long-term planning, PCWA anticipates the demands from this class of customers to be similar to recent sales, with expected annual variations depending on the length of the irrigation season.[57] To further support this assumption, sales to this customer class only varied by +/- 2 percent between 2011 and 2014 even though rainfall amounts and climate conditions varied over this period.
- Landscape – The landscape designation is used by PCWA to represent greenbelts irrigated with irrigation water supplies. With only about 30 active accounts, this category of "customer" still represents a sizable quantity of demand – accounting for approximately 15 percent of the current Zone 1 irrigation demand. The demand of existing customers is expected to decrease over time with on-going conservation measures implements. But, even with adoption of the updated Model Water Landscape Efficiency Ordinance, new urban growth is anticipated to add new landscape accounts, adding to the total demand. For purposes of long-term planning, PCWA anticipates this demand to remain consistent with existing total sales. This value is represented by the average sales recorded for this category between 2011 and 2015, which ranged between 10,103 to 11,864 acre-feet annually.[58]

[54] Based on 2013 PCWA "Water Revenue and Sales Report"
[55] Although Zone 5 covers a large geographic area of rural western Placer County (see **Figure 2-1**), only about 4,400 acres currently receive irrigation water from PCWA. Many of these lands are within the identified westward growth area of the City of Lincoln and will be displaced with urban uses served by the City of Lincoln. However, unlike assumptions made for the 2010 UWMP, the *Placer County Conservation Plan*, adopted by Placer County in 2013, resulted in lands previously assumed to convert to urban uses and served by the City of Lincoln to instead remain as irrigated agriculture.
[56] There are no "irrigation" customers in Zone 5, only "commercial agricultural" customers.
[57] It is PCWA's experience that irrigation water deliveries to irrigation customers vary depending on the timing of spring rainfall. When the rainy season is short, irrigation events begin earlier, increasing annual demand when compared to years when rain continues well into spring.
[58] Based upon 2011 through 2015 PCWA "Water Revenue and Sales Reports."

- Metered – This classification of irrigation demand has very insignificant demands, reflecting less than 1 percent of recent annual irrigation deliveries. PCWA anticipates these demands will remain consistent into the future.

Table 4-10 – Irrigation Demands for Zone 1 and Zone 5

Category	Current	2020	2025	2030	2035	2040	2045	BO
Zone 5 Agriculture	12,433	11,238	10,022	8,810	7,597	6,382	5,169	5,169
Zone 1 Canal Customers*	60,612	60,612	60,612	60,612	60,612	60,612	60,612	60,612
Total	73,045	71,850	70,634	69,422	68,209	66,994	65,781	65,781
Distribution Losses	3,842	3,779	3,715	3,652	3,588	3,524	3,460	3,460
Total System Demand	**76,900**	**75,600**	**74,300**	**73,100**	**71,800**	**70,500**	**69,200**	**69,200**

*Note: Zone 1 Canal Customers includes the demands for customers designated as: commericial agriculture, irrigation, landscape, and metered.

4.4.4 Wholesale Treated Water Demands in Zone 1

In addition to being a retail purveyor of treated and raw water suppliers, PCWA also wholesales treated water to a number of retail water systems located within Zone 1. This section presents the current and projected demands associated with these wholesale arrangements, and the basis for those projections. The resulting demand forecasts are included in **Table 4-11**.

- City of Lincoln – The City of Lincoln is the largest retail customer of wholesale treated water from PCWA, receiving about 90 percent of the wholesale treated water currently sold by PCWA. The City has a renewable contract with the PCWA for treated surface water. PCWA, based on the City's current General Plan, will supply to the City limits, on a "first-come- first-served" basis, the volume of potable surface water required to meet maximum day demands for build-out of the City limits. With significant growth occurring over the last decade, the City has steadily increased its demand for treated water from PCWA under the first-come-first served basis. During the course of this 2015 UWMP preparation, PCWA coordinated with the City to understand its most recent forecast for future demands. According to discussions with the City, the City anticipates total potential demands estimated to be about 37,400 acre-feet annually to serve the entire City's projected growth.[59] While some of this demand may be met with other City water assets under some circumstances, the City primarily plans for this demand to be served by PCWA supplies.

[59] This demand is significantly lower than the 53,000 acre-feet the City had initially estimated in its 2008 General Plan. The reduction is primarily a result of on-going conservation efforts coupled with building and plumbing code requirements, the State's Model Water Efficient Landscape Ordinance, and low-water using appliances and fixtures.

- California American Water – With multiple retail service areas around greater Sacramento, California American (Cal-Am) specifically receives wholesale treated supplies from PCWA for its West Placer community (located in western Placer County just southwest of the City of Roseville). Currently, this Cal-Am service area receives about 10 percent of the PCWA wholesale treated supplies. The general area of Cal-Am's West Placer service area is anticipated to grow, resulting in an expanded wholesale agreement with Cal-Am. For purposes of PCWA's long-term planning, the anticipated growth in this general area is represented within this category of PCWA customers, and is subdivided into two growth areas: (1) Placer Vineyards and (2) Existing Cal-Am.

    1. Placer Vineyards: This currently undeveloped region is slated for significant growth, with over 13,000 new residential units expected over the planning horizon. Demands for this project were estimated using the project's 2006 study as a baseline, then reducing demands to reflect the various unit demand factor drivers discussed in Section 4.3.[60] PCWA reduced the project's overall demand of 11,400 acre-feet by about 25 percent to reflect today's estimated water demand for the same project.

    2. Existing Cal-Am: This includes the existing service of about 1,000 acre-feet annually, with an expected slight reduction through customer conservation activities over time, and significant new growth. Combined, this portion of Cal-Am's service is expected to increase to nearly 2,400 acre-feet.

- Other Retailers – Several small community retail water systems exist within Zone 1 (there are no retail suppliers in Zone 5). Generally organized as homeowner associations, these small retail systems include Folsom Lake Mutual Water Company, Golden Hills Mutual Water Company, Hidden Valley Community Association, Lakeview Hills Community Association, and Willow-Glen Water Company. Golden Hills Mutual Water Company, Hidden Valley Community Association, and Willow-Glen Water Company are each served by PCWA with a single master meter. Usage in these areas with master meters is averaged over the number of parcels served to calculate unit demands. These three systems also have a parallel raw water system that reduces treated demand. With most of these small retail systems serving communities that are built-out or are nearly build-out, PCWA does not anticipate growth within this category of wholesale treated water. Rather, PCWA anticipates future demands to be reduced slightly with the implementation of conservation measures over time. For purposes of projected demands, conservation is expected to reduce the current demand by 5 percent by 2020, with an additional 2 percent by 2025.

[60] MacKay & Somps Civil Engineers, Water Supply and Distribution Master Plan for Placer Vineyards Specific Plan, March 2006.

Table 4-11 – Wholesale Treated Water Demand for Zone 1

Category	Current	2020	2025	2030	2035	2040	2045	BO
City of Lincoln	9,690	13,239	15,421	18,335	21,187	25,533	30,260	37,392
Amoruso Ranch	--	150	500	800	1,100	1,100	1,100	1,100
California American	1,090	1,178	1,404	1,684	1,965	2,385	2,385	2,385
Placer Vineyards (Cal-Am)	--	--	1,688	3,376	5,064	6,752	8,440	8,440
Hidden Valley HOA	80	78	77	75	75	75	75	75
Lakeview Hills HOA	10	10	10	9	9	9	9	9
Folsom Lake Mutual Water Co.	60	58	57	55	55	55	55	55
Golden Hills Mutual Water Co.	35	33	32	30	30	30	30	30
Willow Glen Water Co.	150	147	143	140	140	140	140	140
Total System Demand	11,115	14,894	19,331	24,505	29,625	36,079	42,494	49,626
Distribution System Losses	416	116	313	510	707	891	1,037	1,037
Total System Demand	**11,500**	**15,000**	**19,600**	**25,000**	**30,300**	**37,000**	**43,500**	**50,700**

4.4.5 Western Area Untreated Water Demands

In addition to being a retail purveyor of treated and raw water suppliers, PCWA also wholesales treated water to a number of retail water systems located within Zone 1. This section presents the current and projected demands associated with these wholesale arrangements, and the basis for those projections. PCWA has contracts with San Juan Water District (SJWD), Sacramento Suburban Water District (SSWD), and the City of Roseville (Roseville) to provide each with raw water supplies up to quantities as defined in each contract. The resulting demand forecasts are included in **Table 4-12**.

4.4.5.1 San Juan Water District

PCWA's current contract with SJWD includes an annual entitlement of 25,000 acre-feet of water from the Middle Fork Project (MFP). SJWD's available surface water supply from the MFP is subject to terms in its PCWA contract, combined with Water Forum Agreement restrictions that limit the amount of water that SJWD is able to divert from the American River. SJWD also has an agreement with the City of Roseville (the City) to supply 4,000 acre-feet of its PCWA contract supply to the City in wet years, as defined in the Water Forum Agreement.

According to SJWD's Water Forum Purveyor Specific Agreement, SJWD's American River diversion restrictions are dependent upon the projected March through November Unimpaired Inflow into Folsom Reservoir (UIFR). SJWD can divert its full 82,200 acre-feet per year from the American River in wet years (when projected March through November UIFR is greater than 950,000 acre-feet). This would include the 25,000 acre-feet MFP supply from PCWA. During drier years when the UIFR is between 950,000 and 400,000 acre-feet, SJWD decreases its diversion amounts from 82,200 acre-feet per year to 54,200 acre-feet per year, which includes a reduction of the MFP supply to 10,000 ac-ft. During the

driest years when projected March through November UIFR is less than 400,000 acre-feet, the Water Forum signatories have agreed to meet and confer to develop a plan for water use.

The MFP supply will be delivered to SJWD pursuant to its contract with PCWA and Water Forum Agreement commitments, as described above. In the future, if SJWD amends its current Warren Act Contract with the U.S. Bureau of Reclamation to include delivery of MFP water into its Sacramento County retail service area, PCWA will reevaluate SJWD's build-out demand and update in future UWMP projections. PCWA intends to meet all obligations of its contract with SJWD as future conditions and contract terms evolve.

Based on coordination with SJWD during preparation of each purveyor's 2015 UWMP, SJWD's demand projections through 2040 estimate total retail demand of 20,672 acre-feet.[61] PCWA's interpretation of SJWD's 2040 demand for MFP water in its Placer County retail service area in wet and normal years is 15,500 acre-feet[62] plus an additional 4,000 acre-feet (Roseville supply). For purposes of this UWMP, the Roseville supply is not available in single-dry and multi-dry conditions. The primary SJWD supply is assumed to remain at 15,500 acre-feet under multi-dry year conditions, but drop to 10,000 acre-feet in driest years.

For purposes of demand forecasting, the 2040 demand is reached incrementally, growing from the current estimated 11,300 acre-feet (the 2013 delivered quantity) at a rate of 1.5 percent annually to 2040, then remaining at the maximum value through the remainder of PCWA's planning horizon.

4.4.5.2 Sacramento Suburban Water District

PCWA's current contract with SSWD includes an annual entitlement of 29,000 acre-feet of water from the MFP.[63] SSWD's available surface water supply from the MFP is subject to terms in its PCWA contract, combined with Water Forum Agreement restrictions that limit the amount of water that SSWD is able to divert from the American River.

According to SSWD's Water Forum Purveyor Specific Agreement, SSWD's American River diversion restrictions are dependent upon the projected March through November UIFR. SSWD can divert 29,000 acre-feet per year of MFP water from Folsom Reservoir in wet years (when projected March through November UIFR is greater than 1,600,000 acre-feet). During drier years when the UIFR is less than 1,600,000 acre-feet, SSWD does not receive MFP water from PCWA.

[61] PCWA continued coordination with SJWD during the course of preparation of this plan, resulting in demand forecasts that may have varied from those originally stated in the 60-day notification letter (see **Appendix B-3**).
[62] The Placer County portion is approximately 75 percent of SJWD's retail service area, which would be 15,504 acre-feet of SJWD's estimated demand of 20,672 acre-feet.
[63] For further details about the contract please contact PCWA

MFP water will be delivered pursuant to SSWD's contact with PCWA and Water Forum Agreement commitments, as described above. PCWA intends to meet all obligations of its contract with SSWD as future conditions and contract terms evolve. Based on coordination with SSWD during preparation of this 2015 UWMP, PCWA's interpretation of SSWD's build-out demand for MFP water in normal years is 29,000 acre-feet, reducing to zero acre-feet in single dry and multiple dry years.

For planning purposes, PCWA is assuming the full demand will occur by 2025, and continue to exist throughout PCWA's 2015 UWMP planning horizon.

4.4.5.3 City of Roseville

PCWA's current contract with the City of Roseville (Roseville) includes an annual entitlement of 30,000 acre-feet of water from the Middle Fork Project (MFP). Roseville's available surface water supply from the MFP is subject to terms in its PCWA contract, combined with Water Forum Agreement restrictions that limit the amount of water that Roseville is able to divert from the American River.

According to Roseville's Water Forum Purveyor Specific Agreement, Roseville's American River diversion restrictions are dependent upon the projected March through November UIFR. Roseville can divert 54,900 acre-feet per year from the American River in wet years (when projected March through November UIFR is greater than 950,000 acre-feet). During drier years when the UIFR is between 950,000 and 400,000 acre-feet, Roseville decreases its diversion amounts from 54,900 acre-feet per year down to 39,800 acre-feet per year. During the driest years when projected March through November UIFR is less than 400,000 acre-feet, the Water Forum signatories have agreed to meet and confer to develop a plan for water use.

The MFP supply will be delivered to Roseville pursuant to its contract with PCWA and Water Forum Agreement commitments, as described above. PCWA intends to meet all obligations of its contract with Roseville as future conditions and contract terms evolve. Based on coordination with Roseville during preparation of this 2015 UWMP, PCWA's interpretation of Roseville's contractual demand for MFP water is 30,000 acre-feet in all year types.

For purposes of demand forecasting, the 2040 demand is reached incrementally, growing from the current estimated 8,500 acre-feet (the 2013 delivered quantity) at a rate of 5 percent annually to 2040, then remaining at the maximum value through the remainder of PCWA's planning horizon.

Table 4-12 – Untreated Water Demand for Western Area

Untreated User	Year-Type	Current	2020	2025	2030	2035	2040	2045	BO
San Juan Water District	Average	11,302	12,150	13,061	14,040	15,093	15,500	15,500	15,500
	Multi-dry		12,150	13,061	14,040	15,093	15,500	15,500	15,500
	Single-dry		10,000	10,000	10,000	10,000	10,000	10,000	10,000
San Juan Water District (Roseville)	Average	0	4,000	4,000	4,000	4,000	4,000	4,000	4,000
	Multi-dry		0	0	0	0	0	0	0
	Single-dry		0	0	0	0	0	0	0
Sacramento Suburban Water District *[recent has ranged from zero to +14,000]*	Average	[ranges]	20,000	29,000	29,000	29,000	29,000	29,000	29,000
	Multi-dry		0	0	0	0	0	0	0
	Single-dry		0	0	0	0	0	0	0
City of Roseville	Average	8,537	10,671	13,339	16,674	20,842	30,000	30,000	30,000
	Multi-dry		10,671	13,339	16,674	20,842	30,000	30,000	30,000
	Single-dry		10,671	13,339	16,674	20,842	30,000	30,000	30,000
Total	**Average**	--	**46,821**	**59,400**	**63,714**	**68,936**	**78,500**	**78,500**	**78,500**
	Multi-dry		**22,821**	**26,400**	**30,714**	**35,936**	**45,500**	**45,500**	**45,500**
	Single-dry		**20,671**	**23,339**	**26,674**	**30,842**	**40,000**	**40,000**	**40,000**

4.4.6 Summary of Western Area Demands

As shown in **Table 4-13**, the total water demands for the Western Area anticipated by 2045, the planning horizon for the 2015 UWMP, indicate a growth in total demand of about 50 percent.

Table 4-13 – Summary of Western Area Water Demands

Category	Demand (acre-feet/year)						
	2020	2025	2030	2035	2040	2045	BO
Retail Treated	28,600	32,800	37,600	42,500	49,700	54,600	63,000
Retail Untreated (Irrigation)	75,600	74,300	73,100	71,800	70,500	69,200	69,200
Wholesale Treated	15,000	19,600	25,000	30,300	37,000	43,500	50,700
Wholesale Untreated (Avg year)	46,821	59,400	63,714	68,936	78,500	78,500	78,500
Total Demand	**166,021**	**186,100**	**199,414**	**213,536**	**235,700**	**245,800**	**261,400**

4.5 Zone 3 Water Demands

Zone 3 is the second largest zone in the PCWA system and extends through Applegate, Weimer, Meadow Vista, Colfax, Gold Run, Monte Vista, Dutch Flat, and Alta (see **Figure 2-3**). The predominant demand in Zone 3 is for untreated water, with only about 1,280 accounts served with retail treated water.[64]

4.5.1 Historical Demands

The data in **Table 4-14** indicates the rate of growth in the number of retail treated water connections and associated water treatment plant production serving the connections.

Table 4-14 – Zone 3 Historic Connections and Treated Water Deliveries

Year	Number of Connections	Customer Demand (AF/yr)	Average Connection Demand (AF/yr)
2011	1,277	505	0.40
2012	1,283	537	0.42
2013	1,280	567	0.44
2014	1,280	484	0.38
2015	1,294	442	0.34

4.5.2 Retail Treated Water Demand

As with Zone 1, retail treated water demands in Zone 3 are an important component of PCWA's long-term planning. Representing only a fraction of PCWA's current demands, this demand category will only increase slightly over the next several decades as a result of nominal growth of mountain communities within Placer County, coupled with some conservation by existing customers. This category for Zone 3 is small amounting to about 10 percent of the Zone 3 demands and just 3 percent of the total retail treated service demands of Zone 1 and Zone 3 combined.[65] Changes in this zone are unlikely to have significant impacts on the expected increase in total demands served by PCWA.

4.5.3 Irrigation Water Demand in Zone 3

Irrigation water is sold by PCWA directly to end-users in Zone 3. This supply is a non-potable supply generally used for commercial agriculture, irrigation customers, landscape greenbelts, and metered irrigation. The information presented below provides further details about these customers, their current demands, and projections of future demands. In total, the Zone 3 irrigation water service currently represents over 90 percent of the total Zone 3

[64] Based on approximation from 2013 Water Sales Report
[65] Based on 2013 Water Sales Report.

water sales by volume, but represents fewer accounts – about 500 accounts compared to 1,280 retail treated water accounts.[66]

- Commercial Agriculture - Commercial agriculture is supplied to only 17 accounts and represents only 8 percent of the Zone 3 irrigation water demands.[67] Demands from the Zone 3 commercial agricultural customers are expected to remain similar to current sales.
- Irrigation Customers – With nearly 300 accounts, irrigation customers represent about 60 percent of the Zone 3 irrigation water sales. These customers include the many rural residences within Zone 3 that receive "ditch water" for use in gardens, for landscaping, for small pastures, to maintain stock water sources and small ponds, and other rural residential needs. For purposes of long-term planning, PCWA anticipates the demands from this class of customers to be similar to recent sales, with expected annual variations depending on the length of the irrigation season.[68]
- Landscape – The landscape designation is used by PCWA to represent greenbelts irrigated with irrigation water supplies. With only a few active accounts, this category of "customer" still represents a sizable quantity of demand – accounting for approximately 25 percent of the current Zone 3 irrigation demand. With adoption of MWLEO, the demand of existing customers is expected to decrease, but new urban growth is anticipated to add new landscape accounts, adding to the total demand. For purposes of long-term planning, PCWA anticipates this demand to remain consistent with existing total sales.
- Metered – This classification of irrigation demand has about 200 active accounts, but very insignificant demands, reflecting less than 1 percent of recent annual irrigation deliveries. PCWA anticipates these demands will remain consistent into the future.

4.5.4 Untreated Water Sales to Other Agencies in the Central Area

This section presents the existing and anticipated future water demand of five small water purveyors that purchase about 2,150 acre-feet annually of untreated water from PCWA for treatment and delivery. These purveyors include: Alpine Meadows Water Association, Dutch Flat Water Association, Heather Glen CSD, Meadow Vista County Water District, and Weimar Water Company. Recent sales to these retail agencies have remained fairly consistent. For purposes of long-term planning, PCWA anticipates these demands to remain consistent with recent sales.

[66] Based on 2013 Water Sales Report
[67] Based on 2013 Water Sales Report
[68] It is PCWA's experience that irrigation water deliveries to irrigation customers vary depending on the timing of spring rainfall. When the rainy season is short, irrigation events begin earlier, increasing annual demand when compared to years when rain continues well into spring.

4.5.5 Summary of Zone 3 Water Demands

As shown in **Table 4-15**, the total water demands for Zone 3 anticipated by 2030, the planning horizon for the 2010 UWMP, indicate a very nominal growth in total demand of about one percent. This small increase is the result of limited growth and the adoption of conservation measures. Absent the growth, the demands in Zone 3 would likely decrease from existing quantities simply due to on-going conservation measures.

Table 4-15 – Summary of Forecast Demands for Zone 3

Category	Demand (acre-feet/year)						
	2020	2025	2030	2035	2040	2045	BO
Retail Treated	760	730	740	720	750	780	810
Retail Untreated (Irrigation)	8,420	7,970	7,650	7,650	7,650	7,330	7,330
Wholesale Untreated (Avg year)	2,150	2,150	2,150	2,150	2,150	2,150	2,150
Total Demand	**11,330**	**10,850**	**10,540**	**10,520**	**10,550**	**10,260**	**10,290**

4.6 Total PCWA Demand

As detailed in the previous sections, PCWA has many different customer types with different projected growth representations. Existing customers throughout Zone 1, Zone 3 and Zone 5 combine to demand about 140,000 acre-feet annually. Over the planning horizon represented by this 2015 UWMP, that demand is expected to nearly double by 2045. **Table 4-16** provides the total PCWA customer demand summary for the 5-year planning horizons.

Table 4-16 – Summary of All PCWA Demands

Category	Demand (acre-feet/year)						
	2020	2025	2030	2035	2040	2045	BO
Zone 1 and 5 (Table 4-13)	166,021	186,100	199,414	213,536	235,700	245,800	261,400
Zone 3 (Table 4-15)	11,330	10,850	10,540	10,520	10,550	10,260	10,290
Total Demand	**177,351**	**196,950**	**209,954**	**224,056**	**246,250**	**256,060**	**271,690**

4.7 Low Income Demand

CWC Section 10631.1 requires water suppliers to include a projection of water use by lower income households as defined by Health and Safety Code Section 50097.5. The housing element of the Placer County General Plan provides the income distribution used for this analysis. This housing element uses data from U.S. Census Bureau 2005-2009 American Community Survey. The income limits for "lower income" come from U.S. Department of

Housing and Urban Development's 2009 income guidelines. The median household income in Placer County in 2009 was $74,447, which was significantly higher than California's median income of $60,883. In 2009 38,420 households in Placer County were below the threshold for low income out of a total of 149,685 households, resulting in a weighted average between incorporated and unincorporated areas of 25.7 percent. For lack of more detailed income distributions, this percentage is assumed to remain constant into the future. Using 25.7 percent of the projected population, a persons-per-household from the 2010 county average of 2.60, and an averaged demand factor from the single and multi-family housing units that ramps down into the future from 0.40 to 0.34 by 2040, the current and future demand from "lower income" customers is estimated (see **Table 4-17**).

Table 4-17 – Lower Income Demands

	2020	2025	2030	2035	2040	2045
Projected Population	103,885	110,387	117,368	125,384	133,706	141,365
Low Income Population	26,698	28,370	30,164	32,224	34,362	36,331
Calculated Demands	**4,107**	**4,201**	**4,293**	**4,400**	**4,494**	**4,751**

CHAPTER 5. WATER DEMAND MANAGEMENT MEASURES

5.1 District Participation

CWC § 10631 requires that an UWMP include a description of the urban water supplier's water demand management measures. CWC § 10631 also provides that members of the California Urban Water Conservation Council shall be deemed in compliance with the UWMPA demand management measure requirements by complying with all the provisions of the CUWCC MOU and by submitting the annual reports.

The CUWCC MOU for Best Management Practices is organized into five categories. Two categories, utility operations and education, are "Foundational BMPs" because they are considered to be essential water conservation activities by any utility and are adopted for implementation by all signatories to the MOU as ongoing practices with no time limits. The remaining BMPs are "Programmatic BMPs" and are organized into residential indoor and landscape, commercial/industrial/institutional (CII) indoor and landscape, and CII dedicated large landscape categories. All the categories are outlined in **Table 5-1.**

PCWA signed the MOU in 2003. As a signatory to the CUWCC MOU, PCWA is committed to implement best management practices designed to achieve water conservation across existing and future demand sectors. PCWA has submitted annual reports to the CUWCC, complying with CWC § 10631. A copy of the most recent report from 2013-2014 is available in **Appendix C-1**. The CUWCC MOU requires that a water utility implement only the BMPs that are economically feasible. PCWA's continued implementation of the CUWCC BMPs should reduce some of the unit demand factors for its existing connections and help maintain the unit demand factors for future connections.

Table 5-1 – CUWCC BPM Requirements[69]

FOUNDATIONAL BMPS
1. Utility Operations Programs
1.1 Operations Practices
Staff and maintain the position of a trained conservation coordinator
Enact and enforce an ordinance designed to prevent water waste
Enact and enforce an ordinance designed to promote water efficient design in new development
Enact and enforce an ordinance designed to facilitate water shortage response measures
1.2 Water Loss Control
Compile a standard water audit and balance annually
Improve data accuracy and completeness of water audit during first four years
During 5th through 10th year, demonstrate progress in water loss control
1.3 Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections
Initiate volumetric billing for all metered customers within one year after signing MOU
Complete meter installations for all connections no later than July 1, 2012
Assess feasibility of moving mixed-use metered landscape uses to dedicated landscape meters
Develop a written plan, policy or program to test, repair or replace meters
1.4 Retail Conservation Pricing
Develop water rates such that 70% of revenue is generated from volumetric billing
Develop conservation pricing for retail sewer service
2. Education Programs
2.1 Public Information Programs
Implement public information programs to promote water conservation and water-conservation benefits
2.2 School Education Programs
Educate students about water conservation and efficient water use
PROGRAMMATIC BMPS
3. Residential
Develop a Residential Assistance Program - including leak detection assistance, conservation surveys, and efficiency suggestions, as well as provision of high-efficiency appliances
Perform site-specific landscape water surveys
Provide financial incentives for, or institute ordinances requiring, purchase of efficient clothes washers
Provide incentives or ordinances for replacement of toilets using 3.5 or more gallons per flush
4. Commercial, Industrial and Institutional
Implement measures to achieve water savings for Commercial, Industrial and Institutional (CII) accounts of 10% compared to baseline water use (i.e., 2008 water use by CII accounts)
5. Landscape
Identify accounts with at least one dedicated irrigation meter and assign an ETo based budget of no more than an average of 70% of ETo for metered irrigation uses; "Recreational" areas may be so designated and may use up to 100% of ETo
Provide notices to irrigation meter customers comparing actual use to the water budget
Offer site-specific technical assistance to those accounts at least 20% over budget
Target and market landscape surveys to CII accounts with mixed-use meters, and those CII accounts with large landscapes and offer financial incentives to both

[69]https://www.cuwcc.org/Resources/BMP-Resources

CHAPTER 6. WATER SHORTAGE CONTINGENCY PLAN

PCWA adopted its most recent Water Shortage Contingency Plan (WSCP) in 2015. The WSCP became a critical tool to help PCWA manage conditions during the recent drought cycle, especially as necessary to meet the State-mandated conservation target. The WSCP also guides PCWA's actions during supply shortages caused by infrastructure constraints such as the Bear River Canal failure in 2011. The complete version of the Water Shortage Contingency Plan can be found in **Appendix C-2**.

PCWA's WSCP identifies four levels of water conditions. The plan also identifies a demand reduction goal to meet the projected supply in each stage. PCWA used the following principles to develop the demand reduction requirements for each stage:

- Maintain water quality, safe operating conditions, and fire flow capability at all times;
- Provide flexibility to residential customers to allow them to choose the best use of their water during decreased demand requirements;
- Preserve landscaping as much as possible, with permanent plantings such as trees and shrubs receiving more importance than replaceable plantings such as turf and annuals;
- Maintain public playing fields as long as possible; and
- Minimize economic impact to commercial, industrial, and institutional customers.

6.1 Stages of Action

In the event of a shortage, water conservation is implemented in stages based on the quantity of the supply available compared to the projected demand. Rationing stages may be triggered by a shortage in a single water source or a combination of sources, or resulting from state-imposed regulatory actions. PCWA has separate conservation measures to address shortages in its irrigation canal systems and its treated water systems.

6.1.1 Irrigation Canal Shortage Actions

To conserve water in the canal system, the PCWA Board may take preapproved actions. These actions may include shrinking the diversion orifices utilized to transfer and deliver water to customers as well as rolling canal outages among PCWA's delivery system. In the event of a shortage, the Board of Directors would declare the level of required conservation for the canal system and provide specific guidelines to customers and staff on how to meet the conservation goals. Any declaration made by the Board of Directors will require a resolution providing the level of conservation. For the full text regarding irrigation canal shortage actions see **Appendix C-2**.

6.1.2 Treated Water Shortage Actions and Prohibitions

In the event of a shortage affecting PCWA's treated water occurs, the WSCP outlines specific stages of actions to be taken. **Table 6-1** summarizes the plan stages as defined in WSCP for the treated water systems. The WSCP attached in **Appendix C-2** provides greater detail for the exact methods of reaching the reduction goals for each stage.

PCWA's WSCP contains a response plan to achieve the demand reduction goals for each stage. The response plan includes specific prohibitions and recommended actions for PCWA depending on the water supply conditions. As water supply conditions become worse, the water use restrictions become more severe in an attempt to align available supplies with anticipated water demands.

PCWA uses increasingly strict water use prohibitions to manage water demands as detailed below. For example, no landscape watering is allowed 48 hours after measurable rainfall, automatic shut-off devices are required on all hoses and unauthorized use of hydrants is prohibited. As conservation stages are implemented the time of day when landscape watering is allowed will become more restrictive until landscape irrigation is prohibited altogether in Stage 4. Note that every complete water use prohibition from an earlier stage applies to a later stage as well.

6.1.2.1 Stage 1

During Stage 1, a *Water Alert*, PCWA will seek to reduce demand by up to 20 percent. This will be accomplished by having turf watering limited to 3 days a week, restaurants provide water only upon request, and hotels offer an option to not have towels and linens laundered.

6.1.2.2 Stage 2

During Stage 2, a *Water Warning*, PCWA will seek to reduce demand by up to 30 percent. New landscape installations will be limited to native and drought tolerant plants. Moreover, water features shall be drained and kept dry and a drought surcharge may be implemented. Turf watering under this stage will be limited to two days a week and construction will not be allowed to use water for dust control.

6.1.2.3 Stage 3

When implementing WSCP Stage 3, a *Water Crisis*, PCWA will seek to reduce demand by up to 40 percent. This will include limiting turf watering to once a week. Existing pools shall not be emptied and refilled unless required by public health and safety purposes. Only car washing with a low volume commercial carwash will be allowed. Furthermore, no new landscape can be installed.

6.1.2.4 Stage 4

During Stage 4, a *Water Emergency*, PCWA will require up to 50 percent, and greater if necessary, demand reduction. In this instance water will only be used for health and safety purposes. In addition to the prohibitions in Stages 1 through 3, Stage 4 will prohibit all landscape irrigation and any other uses that impede public health and safety objectives. The incorporated WSCP includes greater details on the specific actions that would implement the demand reduction requirements.

Table 6-1 – Treated Water Shortage Contingency Plan Stages

Stage	Water Supply Conditions	Target	Response Actions
Normal	Normal supply	None	Water use efficiency
1 – Water Alert	Slightly restricted water supplies	Up to 20%	Mandatory actions as provided
2 – Water Warning	Moderately restricted water supplies	Up to 30%	Mandatory actions as provided
3 – Water Crisis	Severly restricted water suplies	Up to 40%	Mandatory actions as provided
4 – Water Emergency	Extremely restricted water supplies	Up to 50% and greater	Mandatory actions as provided

6.2 Prohibitions, Penalties and Charges

The WSCP also outlines the available penalties should a customer violate provisions of the ordinance. The penalties and the associated stage when the penalties take effect are listed in **Table 6-2**. PCWA specifically provides that the amount of irrigation water a customer may purchase can be reduced by PCWA, and that if the customer is notified of a water waste occurrence and fails to eliminate the waste, PCWA may permanently reduce the size of the customer's delivery until the waste is addressed.[70] For treated water customers, PCWA notifies customers of waste and unreasonable water use which can ultimately result in a lock-out of service.

While PCWA's Water Shortage Contingency Plan does rely on specific prohibitions and the potential for penalties to manage demands, the Water Shortage Contingency Plan relies heavily on consumption reduction mechanisms designed to engage customers in a cooperative fashion and also improve the efficiency of their water delivery infrastructure. As

[70] PCC 41221.

noted in *Normal* conditions "Voluntary Conservation" is the preferred action and consumer cooperation is the most effective mechanism to achieve conservation objectives.

Table 6-2 – Penalties for Violations of Contingency Plan

Occurance	Penalty
First	personal/written notification
Second	Writing warning and notice of correction
Third	$75 fine
Fourth	$75 fine and service disconnection

6.3 Revenue and Expenditure Impacts Under the WSCP

PCWA's WSCP recognizes the potential costs associated with drought stage implementation and also the potential need to use drought surcharge rates to not only influence customer behavior but to cover the general reduction in revenue that is likely to result with a reduction in water demand. Additional budgets will also be needed to cover implementation of additional drought measures throughout different stages of action. PCWA has established reserve funds to supplement the reduced revenue during a water shortage. This would help prevent the need to implement drought pricing. As of the end of 2014, this fund totaled just over $8.5 million. For any of this reserve money to be utilized, the Board of Directors must approve its usage. The other option available to the Board would be to establish drought rates.

6.4 Measuring Consumption Reduction

PCWA will use its available resources at each stage to monitor water use and assess the effectiveness of existing demand management measures and the potential need to exert a greater level of effort to control water demand. PCWA is fully metered, allowing it to monitor actual water usage data during shortages and compare to previous usage to determine the reductions in use.

6.5 Minimum Supply Available

As discussed in **Chapter 3**, PCWA has highly reliable water supplies. Currently, PCWA is not projecting a shortage in its water supplies for 2016, with full allocation being available from PG&E. This is consistent with the values shown for 2020 in **Table 3-3**. For 2017 and 2018, PCWA is representing its minimum supply available as a slightly modified version of the multiple dry-year supplies shown in **Table 3-5**. The only change from that table is to the PG&E supplies. This supply was modified to reflect deliveries from PG&E during 2014 and 2015, which were about 68 percent of the average year rather than the estimated 75 percent used in **Table 3-5**. **Table 6-3** shows the total estimated minimum supply in AFY available

for the next three years that is used by PCWA to meet its wholesale and retail customer demands.

Table 6-3 – Three-Year Minimum Supply Available

Supply Source (values in acre-feet/yr)	2016	2017	2018
MFP	120,000	120,000	120,000
CVP Contract	0	0	0
PG&E Agreements	110,400	75,000	75,000
Pre 1914 Appropriations	3,400	1,700	1,700
Recycled Water	0	0	0
Groundwater	0	0	0
Total Supply	233,800	196,700	196,700

6.6 Catastrophic Interruption

The Agency's water systems are susceptible to interruption in water supply due to catastrophic events. In particular, fire, landslides, major pipeline failures, power outages, and earthquakes are risks to PCWA water supply infrastructure.

Water supplied by PG&E is delivered through a canal system that traverses hillsides and crosses valleys using raised flumes and pipelines. The Agency has established a Renewal and Replacement Program to replace aging infrastructure along the canal system; however, this program is phased over a long period of time. The remaining supplies are delivered through pumping stations that have back-up power, with the exception of the American River and Ophir Road Pump Stations.

The Agency has prepared an Emergency Response Plan. The Emergency Response Plan provides general procedures for responding to catastrophic supply interruption (i.e. infrastructure failure).

6.7 Current Drought

As discussed in previous sections, the current drought has impacted PCWA's water supply and approach to usage. The State's 2020 goal for a 20 percent reduction in water use encourages irrigation districts and end users to conserve more water. Throughout the drought, PCWA has taken action to ensure it is able to reduce water use and continue providing water to all of its customers. PCWA initially declared itself in a drought in

February 2014, then in June of 2015, under Resolution 15-10, the PCWA Board of Directors declared a drought emergency and instituted Stage 2 at a 25 percent conservation level. Subsequent to adopting Resolution 15-10, the SWRCB required PCWA to achieve 32 percent water use reduction, prompting a new resolution incorporating this conservation goal. PCWA's consistent application of water reductions was successful in conserving water and allowed PCWA to emerge from the drought conditions in 2016.

CHAPTER 7. SUPPLY & DEMAND INTEGRATION

The purpose of this chapter is to compare the total water supply sources available to PCWA with the total projected water use over the next 25 years, in five-year increments, for a normal water year, a single-dry water year, and multiple dry water years.[71] Water supply and demand data presented in this section is presented in prior sections of this 2015 UWMP.

Also, because PCWA's demand characteristics detailed in **Chapter 4** include more than just the needs of its urban clients, the integration takes a holistic look at the availability and reliability of supplies to meet the full complement of demands.

7.1 Average Water Year Conditions

Under this water supply scenario, PCWA would anticipate full availability of its supplies as detailed in Chapter 3. The resulting total supplies from **Table 3-3** and the forecasted demands from **Table 4-16** are shown in **Table 7-1**. As demonstrated, PCWA has sufficient water supplies through projected build-out conditions during an average year.

Table 7-1 – Supply and Demand Comparison (Average Year)

Average	2020	2025	2030	2035	2040	2045	BO
Supply	233,800	268,300	270,800	272,800	273,800	274,800	274,800
Demand	177,351	196,950	209,954	224,056	246,250	256,060	271,690
Difference	56,449	71,350	60,846	48,744	27,550	18,740	3,110

7.2 Single Dry Year Conditions

In a single dry year condition, PCWA anticipates reductions to its surface water supplies consistent with the projection in **Table 3-4**.

For purposes of this 2015 UWMP, PCWA includes the following assumptions regarding demands in a single dry year:

- Retail treated water demands are increased by 5 percent for each 5-year increment to account for customers demanding supplies earlier in the spring than during a normal year when rainfall would otherwise satisfy landscape irrigation water needs. PCWA has experienced this phenomenon in the past. However, PCWA also anticipates earlier triggering of its WSCP during extreme single dry conditions such as reflected in the constraints to supplies discussed in Chapter 3. To reflect this assumption, the

[71] This is consistent with CWC Section 10635, but extends the period an additional 5 years to provide "20-year" analysis coverage for the intervening years between UWMP updates.

now-increased retail treated demands are reduced by 30 percent, consistent with Stage 2 of the WSCP.

- Retail untreated (irrigation) customers are expected to absorb the largest reduction in demand when supplies are significantly constrained under this type of condition. For purposes of this 2015 UWMP, this class of retail customers, often agricultural customers, are expected to reduce demand for PCWA supplies by 50 percent.
- Wholesale treated demands are also anticipated to diminish, but only as governed by the retail purveyor's own shortage actions. For purposes of this 2015 UWMP, this class of customer's demand is conservatively assumed to reduce only 25 percent from the normal condition.
- Wholesale untreated demands during this type of supply shortage condition are governed by the contracts. The assumed single-dry year values are detailed in **Table 4-12**.

Table 7-2 details the results of these demand reduction assumptions in comparison to available supplies under single dry year conditions. As demonstrated, and with the represented demand adjustments, PCWA has sufficient water supplies through projected build-out conditions during the single driest year.

Table 7-2 – Supply and Demand Comparison (Single Driest-Year)

Single Dry	2020	2025	2030	2035	2040	2045	BO
Supply	138,450	156,950	161,450	163,450	165,450	166,450	166,450
Demand	98,673	106,892	116,988	128,069	146,915	154,538	166,133
Difference	39,777	50,058	44,462	35,381	18,536	11,912	317

7.3 Multiple Dry Year Conditions

For purposes of this UMWP, PCWA has assessed a three-year series of dry conditions that mimic supply conditions from 1990 through 1992. The supplies available during this series of multiple dry years were not as constrained as during the representative single dry year condition. Although, as experienced with this most recent drought period, actual water supply availability over multiple years is dependent on many factors that will require flexibility for PCWA to manage supplies and implementation of its WSCP stages accordingly.

The supply assumptions for the multi-dry year condition are presented in **Table 3-5**. Because these supplies are less constrained, modifications to demand are also less constrained than assumed for the single-dry year condition. For purposes of this 2015 UWMP, the following demand modifications are assumed:

- Retail treated demands are still expected to increase, consistent with the single-dry year assumption. To reflect this condition, average water demands for this customer class are increased by 5 percent. But, because supplies are less restricted, PCWA is assumed to only implement Stage 1 of its WSCP, seeking a 20 percent reduction from these elevated demands. However, for this 2015 UWMP, demands are only reduced by a conservative value of 10 percent.
- To maintain parody among retail customers, the retail untreated (irrigation) customers are also only reduced by 10 percent (e.g. 90 percent of their demand is planned to be met).
- Wholesale treated water customers are conservatively only assumed to reduce by 5 percent.
- Wholesale untreated demands during this type of supply shortage condition are governed by the contracts. The assumed multi-dry year values are detailed in **Table 4-12.**

This resulting analysis has been represented in **Table 7-3**. PCWA anticipates adequate water supplies being available. As demonstrated, and with the represented demand adjustments, PCWA has sufficient water supplies through projected build-out conditions during a series of multiple dry year conditions.

Table 7-3 – Supply and Demand Comparison (multiple dry years)

Multi-Dry	2020	2025	2030	2035	2040	2045	BO
Supply	204,500	231,000	233,500	235,500	236,500	237,500	237,500
Demand	142,335	152,651	165,272	178,971	200,562	209,936	224,741
Difference	62,165	78,349	68,228	56,529	35,939	27,564	12,759

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APPENDICES

Appendix A

This appendix section shall contain all compliance and reporting related documents

Appendix A-1	DWR Recommended Tables
Appendix A-2	DWR Checklist
Appendix A-3	SBX7-7 Compliance Form
Appendix A-4	AWWA Water Audit Form

Appendix B

This appendix section shall contain all agency related documents

Appendix B-1	Resolution Adopting the 2015 UWMP
Appendix B-2	Copies of General Notice of Availability
Appendix B-3	Copies of Notification Letters

Appendix C

This appendix section shall contain supply related documents

Appendix C-1	CUWCC Report
Appendix C-2	Water Shortage Contingency Plan

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Appendix A-1: DWR Recommended Tables

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NOTES FOR REGIONAL URBAN WATER MANAGEMENT PLANS (RUWMPs)

RUWMPs will report data for each agency in the RUWMP, requiring duplicates of the standardized tables. The supplier will copy the needed tables and notate each of the copies with the name of the agency, or some other designation, identifying the table with the corresponding agency.
WUEdata upload tool for RUWMPs
RUWMPs will submit data to the WUEdata upload tool on an individual agency basis.
If the RUWMP contains a Regional Alliance, the Regional Alliance information will be uploaded separately from the individual agency information.

Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
CA3110124	CWA Monte Vista	See note	See note
CA3110040	CWA Binachi	See note	See note
CA3110050	CWA Applegate	See note	See note
CA3110024	CWA Alta	See note	See note
CA3110006	CWA Colfax	See note	See note
CA3110005	CWA Auburn/Bowman	See note	See note
CA3110025	CWA Foothill	See note	See note
	TOTAL	35,394	26,790
NOTES: See Chapter 2. The total number of connections for PCWA's entire system is 35,394 with a total volume of 26,790 AFY in 2015.			

Table 2-2: Plan Identification			
Select Only One	**Type of Plan**		**Name of RUWMP or Regional Alliance** *if applicable* *drop down list*
☒	**Individual UWMP**		
	☐	Water Supplier is also a member of a RUWMP	
	☐	Water Supplier is also a member of a Regional Alliance	
☐	**Regional Urban Water Management Plan (RUWMP)**		
NOTES: See Chapter 1			

Table 2-3: Agency Identification	
Type of Agency (select one or both)	
☒	Agency is a wholesaler
☒	Agency is a retailer
Fiscal or Calendar Year (select one)	
☒	UWMP Tables Are in Calendar Years
☐	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Date that the Fiscal Year Begins (mm/dd)	
Units of Measure Used in UWMP (select from Drop down)	
Unit	AF
NOTES: PCWA provides both retail and wholesale services. These services include both treated and untreated water supplies. PCWA manages customer demands and water supplies dynamically to meet all customer types.	

Table 2-4 Retail: Water Supplier Information Exchange
The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with CWC 10631.
Wholesale Water Supplier Name *(Add additional rows as needed)*
NOTES: PCWA provides both retail and wholesale water supply services. It has coordinated with its wholesale agencies as discussed in Section 1.2

Table 2-4 Wholesale: Water Supplier Information Exchange (select one)	
☒	Supplier has informed more than 10 other water suppliers of water supplies available in accordance with CWC 10631. Completion of the table below is optional. If not completed include a list of the water suppliers that were informed.
See Chapter 1.2	**Provide page number for location of the list.**
☐	Supplier has informed 10 or fewer other water suppliers of water supplies available in accordance with CWC 10631. **Complete the table below.**
Water Supplier Name *(Add additional rows as needed)*	
NOTES:See Chapter 1.2	

Table 3-1 Retail: Population - Current and Projected						
Population Served	2015	2020	2025	2030	2035	2040*(opt)*
	98,128	103,885	110,387	117,368	133,706	141,365
NOTES: See Chapter 2. Populations shown are for retail treated service.						

Table 3-1 Wholesale: Population - Current and Projected						
Population Served	2015	2020	2025	2030	2035	2040*(opt)*
	98,128	103,885	110,387	117,368	133,706	141,365
NOTES: See Chapter 2. Populations shown are for retail treated service.						

Table 4-1 Retail: Demands for Potable and Raw Water - Actual			
Use Type *(Add additional rows as needed)*	2015 Actual		
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool	Additional Description *(as needed)*	Level of Treatment When Delivered *Drop down list*	Volume
Single Family		Drinking Water	11,477
Multi-Family		Drinking Water	1,615
Commercial		Drinking Water	2,465
Industrial		Drinking Water	441
Institutional/Governmental	Municipal	Drinking Water	842
Landscape		Drinking Water	1,618
Other	Commercial ag, other canal deliveries, and landscape and recreation, including losses	Raw Water	62,258
Losses		Drinking Water	2,751
		TOTAL	83,467
NOTES: See Chapter 4. Values in this table are for 2015, which was significantly lower than used for planning. Values are for Zone 1, Zone 2, Zone 3 and Zone 5.			

Table 4-1 Wholesale: Demands for Potable and Raw Water - Actual			
Use Type *(Add additional rows as needed)*	2015 Actual		
Drop down list *May select each use multiple times* *These are the only use types that will be recognized by the WUE data online submittal tool*	Additional Description *(as needed)*	Level of Treatment When Delivered *Drop down list*	Volume
Sales to other agencies	See Section 4.4.4	Drinking Water	6,424
Sales to other agencies	See Section 4.4.5	Raw Water	20,148
		TOTAL	26,572
NOTES: See Chapter 4. Values in this table are for 2015, which was significantly lower than used for planning.			

Table 4-2 Retail: Demands for Potable and Raw Water - Projected						
Use Type *(Add additional rows as needed)* *Drop down list* *May select each use multiple times* *These are the only Use Types that will be recognized by the WUEdata online submittal tool*	Additional Description *(as needed)*	Projected Water Use *Report To the Extent that Records are Available*				
		2020	2025	2030	2035	2040-opt
Other	Zone 1, and 2 treated demand total including multi-family, single family, commercial, industrial, municipal, landscape and losses	**28,600**	**32,800**	**37,600**	**42,500**	**49,700**
Other	Zone 1 and Zone 5 Raw Demand total agriculture, canal customers and losses	**75,600**	**74,300**	**73,100**	**71,800**	**70,500**
Other	Zone 3 treated demand total including multi-family, single family, commercial, industrial, municipal, landscape and losses	**760**	**730**	**740**	**720**	**750**
Other	Zone 3 Raw Demand total agriculture, canal customers and losses	**8,420**	**7,970**	**7,650**	**7,650**	**7,650**
	TOTAL	113,380	115,800	119,090	122,670	128,600
NOTES: See Chapter 4 for in-depth discussion of the projected water demands.						

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Table 4-2 Wholesale: Demands for Potable and Raw Water - Projected

Use Type *(Add additional rows as needed)* ***Drop down list*** *May select each use multiple times* *These are the only Use Types that will be recognized by the WUEdata online submittal tool.*	Additional Description *(as needed)*	Projected Water Use *Report To the Extent that Records are Available*				
		2020	2025	2030	2035	2040 *(opt)*
Other	Wholesale treated demand for Zone 1 including losses. See Table 4-11.	15,000	19,600	25,000	30,300	37,000
Other	Western Area Untreated Raw Water demands including losses. See Table 4-12.	46,821	59,400	63,714	68,936	78,500
Other	Zone 3	2,150	2,150	2,150	2,150	2,150
	TOTAL	63,971	81,150	90,864	101,386	117,650

NOTES: See Chapter 4 for in-depth discussion of the projected water demands.

Table 4-3 Retail: Total Water Demands						
	2015	2020	2025	2030	2035	2040 *(opt)*
Potable and Raw Water *From Tables 4-1 and 4-2*	83,467	113,380	115,800	119,090	122,670	128,600
Recycled Water Demand* *From Table 6-4*	0	0	0	0	0	0
TOTAL WATER DEMAND	83,467	113,380	115,800	119,090	122,670	128,600
**Recycled water demand fields will be blank until Table 6-4 is complete.*						
NOTES: See Chapter 4						

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Table 4-3 Wholesale: Total Water Demands						
	2015	2020	2025	2030	2035	2040*(opt)*
Potable and Raw Water *From Tables 4-1 and 4-2*	26,572	63,971	81,150	90,864	101,386	117,650
Recycled Water Demand* *From Table 6-4*	0	0	0	0	0	0
TOTAL WATER DEMAND	26,572	63,971	81,150	90,864	101,386	117,650
**Recycled water demand fields will be blank until Table 6-4 is complete.*						
NOTES: See Chapter 4						

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Table 4-4 Retail: 12 Month Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
01/2014	1949
** Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.*	
NOTES: See Appendix A-4. This is the 2014 Audit value. A data issue for 2015 is still being resolved and the 2015 Audit form is pending	

Table 4-4 Wholesale: 12 Month Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
n/a	See notes
** Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.*	
NOTES: PCWA provides both retail and wholesale services. These services include both treated and untreated water supplies. PCWA manages customer demands and water supplies dynamically to meet all customer types. PCWA only prepares the AWWA Audit form for its retail treated water system. PCWA separately tracks losses with its retail raw, wholesale treated and wholesale raw customers.	

Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) *Drop down list (y/n)*	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc... utilized in demand projections are found.	Section 4.3
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes
NOTES: See Chapter 4	

Table 5-1 Baselines and Targets Summary
Retail Agency or Regional Alliance Only

Baseline Period	Start Year	End Year	Average Baseline GPCD*	2015 Interim Target *	Confirmed 2020 Target*
10-15 year	*1995*	*2004*	*322*	*292*	*261*
5 Year	*2004*	*2008*	*299*		

*All values are in Gallons per Capita per Day (GPCD)

NOTES:

Table 5-2: 2015 Compliance
Retail Agency or Regional Alliance Only

Actual 2015 GPCD*	2015 Interim Target GPCD*	Optional Adjustments to 2015 GPCD Enter "0" if no adjustment is made *From Methodology 8*					2015 GPCD* *(Adjusted if applicable)*	Did Supplier Achieve Targeted Reduction for 2015? Y/N
		Extraordinary Events*	Economic Adjustment*	Weather Normalization*	TOTAL Adjustments*	Adjusted 2015 GPCD*		
203	292	0	0	0	0	203	203	Yes

**All values are in Gallons per Capita per Day (GPCD)*

NOTES: See Chapter 4

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Table 6-1 Retail: Groundwater Volume Pumped						
☒	Supplier does not pump groundwater. The supplier will not complete the table below.					
Groundwater Type *Drop Down List* *May use each category multiple times*	Location or Basin Name	2011	2012	2013	2014	2015
Add additional rows as needed						
	TOTAL	0	0	0	0	0
NOTES: See Chapter 3						

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Table 6-1 Wholesale: Groundwater Volume Pumped						
☒	Supplier does not pump groundwater. The supplier will not complete the table below.					
Groundwater Type *Drop Down List* *May use each category multiple times*	Location or Basin Name	2011	2012	2013	2014	2015
	TOTAL	0	0	0	0	0

NOTES: PCWA has two wells that are in place for use during extreme dry conditions as a backup and emergency water supply

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Table 6-2 Retail: Wastewater Collected Within Service Area in 2015						
☒	There is no wastewater collection system. The supplier will not complete the table below.					
	Percentage of 2015 service area covered by wastewater collection system *(optional)*					
	Percentage of 2015 service area population covered by wastewater collection system *(optional)*					
Wastewater Collection			**Recipient of Collected Wastewater**			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? *Drop Down List*	Volume of Wastewater Collected from UWMP Service Area 2015	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? *Drop Down List*	Is WWTP Operation Contracted to a Third Party? *(optional)* *Drop Down List*
Add additional rows as needed						
Total Wastewater Collected from Service Area in 2015:		0				
NOTES: PCWA is working with the City of Lincoln and the City of Roseville to strategically plan for regional recycled water opportunities through the plants operated by the two cities.						

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Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015

☒ No wastewater is treated or disposed of within the UWMP service area.
The supplier will not complete the table below.

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)*	Method of Disposal *Drop down list*	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level *Drop down list*	2015 volumes			
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
Add additional rows as needed										
						Total	0	0	0	0

NOTES: PCWA is working with the City of Lincoln and the City of Roseville to strategically plan for regional recycled water opportunities through the plants operated by the two cities.

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Table 6-3 Wholesale: Wastewater Treatment and Discharge Within Service Area in 2015

IX	Wholesale supplier neither distributes nor provides supplemental treatment to recycled water. The supplier will not complete the table below.

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)*	Method of Disposal *Drop down list*	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level *Drop down list*	2015 volumes			
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
Add additional rows as needed										
						Total	0	0	0	0

NOTES: PCWA is working with the City of Lincoln and the City of Roseville to strategically plan for regional recycled water opportunities through the plants operated by the two cities.

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Table 6-4 Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area

☒	Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.

Name of Agency Producing (Treating) the Recycled Water:	
Name of Agency Operating the Recycled Water Distribution System:	
Supplemental Water Added in 2015	
Source of 2015 Supplemental Water	

Beneficial Use Type	General Description of 2015 Uses	Level of Treatment *Drop down list*	2015	2020	2025	2030	2035	2040 (opt)
Agricultural irrigation								
Landscape irrigation (excludes golf courses)								
Golf course irrigation								
Commercial use								
Industrial use	Industrial Reuse							
Geothermal and other energy production								
Seawater intrusion barrier								
Recreational impoundment								
Wetlands or wildlife habitat								
Groundwater recharge (IPR)*								
Surface water augmentation (IPR)*								
Direct potable reuse								
Other *(Provide General Description)*								
		Total:	0	0	0	0	0	0

**IPR - Indirect Potable Reuse*

NOTES: See Chapter 3 for discussion of potential recycled water opportunities.

PCWA-023

Table 6-4 Wholesale: Current and Projected Retailers Provided Recycled Water Within Service Area							
☒	Recycled water is not directly treated or distributed by the supplier. The supplier will not complete the table below.						
Name of Receiving Supplier or Direct Use by Wholesaler	Level of Treatment *Drop down list*	2015	2020	2025	2030	2035	2040 *(opt)*
Add additional rows as needed							
	Total	0	0	0	0	0	0
NOTES: PCWA is working with the City of Lincoln and the City of Roseville to strategically plan for regional recycled water opportunities through the plants operated by the two cities.							

Table 6-5 Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual	
☒	Recycled water was not used in 2010 nor projected for use in 2015. The supplier will not complete the table below.

Use Type		2010 Projection for 2015	2015 Actual Use
Agricultural irrigation			
Landscape irrigation (excludes golf courses)			
Golf course irrigation			
Commercial use			
Industrial use			
Geothermal and other energy production			
Seawater intrusion barrier			
Recreational impoundment			
Wetlands or wildlife habitat			
Groundwater recharge (IPR)			
Surface water augmentation (IPR)			
Direct potable reuse			
Other	*Type of Use*		
Total		0	0

NOTES: PCWA is working with the City of Lincoln and the City of Roseville to strategically plan for regional recycled water opportunities through the plants operated by the two cities.

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Table 6-5 Wholesale: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual		
☒	Recycled water was not used or distributed by the supplier in 2010, nor projected for use or distribution in 2015. The wholesale supplier will not complete the table below.	
Name of Receiving Supplier or Direct Use by Wholesaler	2010 Projection for 2015	2015 actual use
Add additional rows as needed		
Total	0	0

NOTES: PCWA is working with the City of Lincoln and the City of Roseville to strategically plan for regional recycled water opportunities through the plants operated by the two cities.

Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Add additional rows as needed			
Supply reliability	Regional recylced water projects being developed with City of Lincoln and City of Roseville	2025	2,500
		Total	2,500
NOTES: See Section 3.			

Table 6-7 Retail: Expected Future Water Supply Projects or Programs						
☐	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.					
☒	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
Sect. 3.6 & 3.7.4	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other agencies?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type *Drop Down List*	Expected Increase in Water Supply to Agency *This may be a range*
	Drop Down List (y/n)	*If Yes, Agency Name*				
Add additional rows as needed						
NOTES: See Section 3.6 and Section 3.7.4						

Table 6-7 Wholesale: Expected Future Water Supply Projects or Programs						
☐	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.					
☒	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
Sect. 3.6 & 3.7.4	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other agencies?		Description *(if needed)*	Planned Implementation Year	Planned for Use in Year Type *Drop Down list*	Expected Increase in Water Supply to Agency
	Drop Down Menu	*If Yes, Agency Name*				
Add additional rows as needed						
NOTES: See Section 3.6 and Section 3.7.4						

Table 6-8 Retail: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2015		
Drop down list *May use each category multiple times.* *These are the only water supply categories that will be recognized by the WUEdata online submittal tool*		Actual Volume	Water Quality *Drop Down List*	Total Right or Safe Yield *(optional)*
Add additional rows as needed				
Surface water	MFP	42,346	Raw Water	
Purchased or Imported Water	PG&E Agreements	66,176	Raw Water	
Surface water	Pre 1914 Appropriations	1,496	Raw Water	
	Total	110,018		0
NOTES: See detailed discussion of PCWA supplies in Chapter 3. These values are managed dynamically as PCWA's overall supply to meet it retail treated, retail raw, wholesale treated and wholesale raw customer demands. These values are the same as reported on Table 6-8W.				

Table 6-8 Wholesale: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2015		
Drop down list *May use each category multiple times.These are the only water supply categories that will be recognized by the WUEdata online submittal tool*		Actual Volume	Water Quality *Drop Down List*	Total Right or Safe Yield *(optional)*
Add additional rows as needed				
Surface water	MFP	42,346	Raw Water	
Purchased or Imported Water	PG&E Agreements	66,176	Raw Water	
Surface water	Pre 1914 Appropriations	1,496	Raw Water	
	Total	110,018		0
NOTES: See detailed discussion of PCWA supplies in Chapter 3. These values are managed dynamically as PCWA's overall supply to meet it retail treated, retail raw, wholesale treated and wholesale raw customer demands. These values are the same as reported on Table 6-8R.				

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Table 6-9 Retail: Water Supplies — Projected

Water Supply	Additional Detail on Water Supply	Projected Water Supply *Report To the Extent Practicable*									
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool		2020		2025		2030		2035		2040 *(opt)*	
		Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*
Add additional rows as needed											
Surface water	MFP	120,000		120,000		120,000		120,000		120,000	
Purchased or Imported Water	CVP Contract	0		32,000		32,000		32,000		32,000	
Purchased or Imported Water	PG&E Agreements	110,400		110,400		110,400		110,400		110,400	
Surface water	Pre 1914 Appropriations	3,400		3,400		3,400		3,400		3,400	
Recycled Water	from City of Lincoln/Roseville	0		2,500		5,000		7,000		8,000	
Groundwater	Sunset Industrial Area	0		0		0		0		0	
	Total	233,800	0	268,300	0	270,800	0	272,800	0	273,800	0

NOTES: See detailed discussion of PCWA supplies in Chapter 3. These values are managed dynamically as PCWA's overall supply to meet it retail treated, retail raw, wholesale treated and wholesale raw customer demands. Groundwater is only used during dry-years. These values are the same as reported on Table 6-9W.

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Table 6-9 Wholesale: Water Supplies — Projected

Water Supply	Additional Detail on Water Supply	Projected Water Supply *Report To the Extent Practicable*									
		2020		2025		2030		2035		2040 *(opt)*	
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool		Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*
Add additional rows as needed											
Surface water	MFP	120,000		120,000		120,000		120,000		120,000	
Purchased or Imported Water	CVP Contract	0		32,000		32,000		32,000		32,000	
Purchased or Imported Water	PG&E Agreements	110,400		110,400		110,400		110,400		110,400	
Surface water	Pre 1914 Appropriations	3,400		3,400		3,400		3,400		3,400	
Recycled Water	from City of Lincoln/Roseville	0		2,500		5,000		7,000		8,000	
Groundwater	Sunset Industrial Area	0		0		0		0		0	
Total		233,800	0	268,300	0	270,800	0	272,800	0	273,800	0

NOTES: See detailed discussion of PCWA supplies in Chapter 3. These values are managed dynamically as PCWA's overall supply to meet it retail treated, retail raw, wholesale treated and wholesale raw customer demands. Groundwater is only used during dry-years. These values are the same as reported on Table 6-9R.

Table 7-1 Retail: Basis of Water Year Data			
Year Type	**Base Year** *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000*	**Available Supplies if Year Type Repeats**	
		☒ Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location **See Section 3.7**	
		☐ Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available	**% of Average Supply**
Average Year			100%
Single-Dry Year			
Multiple-Dry Years 1st Year			
Multiple-Dry Years 2nd Year			
Multiple-Dry Years 3rd Year			
Multiple-Dry Years 4th Year *Optional*			
Multiple-Dry Years 5th Year *Optional*			
Multiple-Dry Years 6th Year *Optional*			

Agency may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If an agency uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.

NOTES: See detailed discussion of PCWA supplies in Section 3.7. Each supply is governed by various hydrologic assumptions or contractual conditions, which PCWA has characterized for purposes of this UWMP. These values are the same as reported on Table 7-1W.

Table 7-1 Wholesale: Basis of Water Year Data			
Year Type	**Base Year** *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000*	**Available Supplies if Year Type Repeats**	
		☒ Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location **See Section 3.7**	
		☐ Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available	**% of Average Supply**
Average Year			100%
Single-Dry Year			
Multiple-Dry Years 1st Year			
Multiple-Dry Years 2nd Year			
Multiple-Dry Years 3rd Year			
Multiple-Dry Years 4th Year *Optional*			
Multiple-Dry Years 5th Year *Optional*			
Multiple-Dry Years 6th Year *Optional*			

Agency may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If an agency uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table. Suppliers may create an additional worksheet for the additional tables.

NOTES: See detailed discussion of PCWA supplies in Section 3.7. Each supply is governed by various hydrologic assumptions or contractual conditions, which PCWA has characterized for purposes of this UWMP. These values are the same as reported on Table 7-1R.

Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 *(Opt)*
Supply totals *(autofill from Table 6-9)*	233,800	268,300	270,800	272,800	273,800
Demand totals *(autofill from Table 4-3R and 4-3W)*	177,351	196,950	209,954	224,056	246,250
Difference	56,449	71,350	60,846	48,744	27,550
NOTES: See detailed discussion of supply and demand integration in Chapter 7. Because PCWA manages its supplies and wholesale and retail demands collectively, these values are the same as reported on Table 7-2W.					

Table 7-2 Wholesale: Normal Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 *(Opt)*
Supply totals *(autofill from Table 6-9)*	233,800	268,300	270,800	272,800	273,800
Demand totals *(autofill from Table 4-3R and 4-3W)*	177,351	196,950	209,954	224,056	246,250
Difference	56,449	71,350	60,846	48,744	27,550
NOTES: See detailed discussion of supply and demand integration in Chapter 7. Because PCWA manages its supplies and and wholesale and retail demands collectively, these values are the same as reported on Table 7-2R.					

Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 (Opt)
Supply totals	138,450	156,950	161,450	163,450	165,450
Demand totals	98,673	106892.06	116,988	128,069	146,915
Difference	39,777	50,058	44,462	35,381	18,536
NOTES: See detailed discussion of supply and demand integration in Chapter 7. Because PCWA manages its supplies and and wholesale and retail demands collectively, these values are the same as reported on Table 7-3W.					

Table 7-3 Wholesale: Single Dry Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 (Opt)
Supply totals	138,450	156,950	161,450	163,450	165,450
Demand totals	98,673	106892.06	116,988	128,069	146,915
Difference	39,777	50,058	44,462	35,381	18,536
NOTES: See detailed discussion of supply and demand integration in Chapter 7. Because PCWA manages its supplies and and wholesale and retail demands collectively, these values are the same as reported on Table 7-3R.					

Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	204,500	231,000	233,500	235,500	236,500
	Demand totals	142,335	152,651	165,272	178,971	200,562
	Difference	62,165	78,349	68,228	56,529	35,939
Second year	Supply totals	204,500	231,000	233,500	235,500	236,500
	Demand totals	142,335	152,651	165,272	178,971	200,562
	Difference	62,165	78,349	68,228	56,529	35,939
Third year	Supply totals	204,500	231,000	233,500	235,500	236,500
	Demand totals	142,335	152,651	165,272	178,971	200,562
	Difference	62,165	78,349	68,228	56,529	35,939
NOTES: See detailed discussion of supply and demand integration in Chapter 7. Because PCWA manages its supplies and and wholesale and retail demands collectively, these values are the same as reported on Table 7-4W.						

Table 7-4 Wholesale: Multiple Dry Years Supply and Demand Comparison						
		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	204,500	231,000	233,500	235,500	236,500
	Demand totals	142,335	152,651	165,272	178,971	200,562
	Difference	62,165	78,349	68,228	56,529	35,939
Second year	Supply totals	204,500	231,000	233,500	235,500	236,500
	Demand totals	142,335	152,651	165,272	178,971	200,562
	Difference	62,165	78,349	68,228	56,529	35,939
Third year	Supply totals	204,500	231,000	233,500	235,500	236,500
	Demand totals	142,335	152,651	165,272	178,971	200,562
	Difference	62,165	78,349	68,228	56,529	35,939
NOTES: See detailed discussion of supply and demand integration in Chapter 7. Because PCWA manages its supplies and and wholesale and retail demands collectively, these values are the same as reported on Table 7-4R.						

Table 8-1 Retail Stages of Water Shortage Contingency Plan		
Stage	Complete Both	
	Percent Supply Reduction[1] *Numerical value as a percent*	Water Supply Condition *(Narrative description)*
Add additional rows as needed		
Normal	0%	see Section 6.1.2
Stage 1	up to 20%	see Section 6.1.2
Stage2	up to 30%	see Section 6.1.2
Stage 3	up to 40%	see Section 6.1.2
Stage 4	up to 50% and greater	see Section 6.1.2
[1] One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.		
NOTES: See Chapter 6 and Appendix C-3		

Table 8-1 Wholesale Stages of Water Shortage Contingency Plan		
Stage	Complete Both	
	Supply Reduction[1]	Water Supply Condition (*Narrative description*)
Add additional rows as needed		
See Notes		
[1] *One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.*		
NOTES: Wholesale deliveries are governed by contractual arrangements with identified shortage provisions. See Chapters 3 and 6 for further details		

Table 8-2 Retail Only: Restrictions and Prohibitions on End Uses			
Stage	Restrictions and Prohibitions on End Users ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? *Drop Down List*
Add additional rows as needed			
Stage 1	Landscape - Restrict or prohibit runoff from landscape irrigation		
Stage 1	Landscape - Limit landscape irrigation to specific times		
Stage 1	Landscape - Limit landscape irrigation to specific days		
Stage 1	CII - Lodging establishment must offer opt out of linen service		
Stage 1	CII - Restaurants may only serve water upon request		
Stage 2	Landscape - Other landscape restriction or prohibition		
Stage 2	Water Features - Restrict water use for decorative water features, such as fountains		
Stage 2	CII - Other CII restriction or prohibition		
Stage 3	Landscape - Other landscape restriction or prohibition		
Stage 3	CII - Other CII restriction or prohibition		
Stage 4	Landscape - Other landscape restriction or prohibition		
NOTES: See Chapter 6 and Appendix C-3 for more details			

Table 8-3 Retail Only: Stages of Water Shortage Contingency Plan - Consumption Reduction Methods		
Stage	Consumption Reduction Methods by Water Supplier *Drop down list* *These are the only categories that will be accepted by the WUEdata online submittal tool*	Additional Explanation or Reference *(optional)*
Add additional rows as needed		
Stage 1	Expand Public Information Campaign	The Board will direct staff as necessary under each stage
Stage 1	Other	See Chapter 6 and Appendix D-3
NOTES: See Chapter 6 and Appendix C-3 for more details		

Table 8-4 Retail: Minimum Supply Next Three Years			
	2016	2017	2018
Available Water Supply	233,800	196,700	196,700
NOTES: See Section 6.5. Because PCWA manages its supply portfolio to meet both retail and wholesale demands, these are the same values presented in Table 8-4W.			

Table 8-4 Wholesale: Minimum Supply Next Three Years			
	2016	2017	2018
Available Water Supply	233,800	196,700	196,700
NOTES: See Section 6.5. Because PCWA manages its supply portfolio to meet both retail and wholesale demands, these are the same values presented in Table 8-4R.			

Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Roseville	☒	☒
Lincoln	☒	☒
Rocklin	☒	☒
Loomis	☒	☒
Auburn	☒	☒
Colfax	☒	☒
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Placer County	☒	☒
Sacramento County	☒	☒
NOTES: See Chapter 1 and Appendix B-3 for additional entities that are not cities or counties.		

Table 10-1 Wholesale: Notification to Cities and Counties (select one)		
☒	Supplier has notified more than 10 cities or counties in accordance with CWC 10621 (b) and 10642. **Completion of the table below is not required. Provide a separate list of the cities and counties that were notified.**	
	Provide the page or location of this list in the UWMP.	
	Supplier has notified 10 or fewer cities or counties. **Complete the table below.**	
City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Roseville	☒	☒
Lincoln	☒	☒
Rocklin	☒	☒
Loomis	☒	☒
Auburn	☒	☒
Colfax	☒	☒
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Sacramento County	☒	☒
Placer County	☒	☒
NOTES: See Chapter 1 and Appendix B-3 for additional entities that are not cities or counties.		

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Appendix A-2: DWR Checklist

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2015 UWMP Checklist

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location *(Optional Column for Agency Use)*
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	**Section 1.1**
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	**Section 1.2, Appendix B-3**
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	**Section 1.2, Appendix B-3**
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	**Section 2.1**
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	**Section 2.1.2**
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	**Section 2.1.3**
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	**Section 2.1**
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	**Section 2.1.3**
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	**Section 4.4**
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	**Section 4.4, Appendix A-4**
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	**Section 4.7**
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	**Section 4.1**
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target,	Baselines and Targets	Chapter 5 and App E	**Section 4.1, 4.2,**

	interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.			**Appendix A-3**
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	**Section 4.1, 4.2, Appendix A-3**
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	**Section 4.2, Appendix A-3**
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	**Section 4.2, Appendix A-3**
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	**Section 5.1, Appendix D-2**
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	**Section 4.1, 4.2, and Appendix A-3**
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	**Section 3.6**
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	**Section 3.2, 3.6, and Appendix C-2**
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	**Section 3.2, Appendix C-2**
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	**Section 2.1, 3.2 and Appendix C-2**
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	**Section 3.2, Appendix C-2**
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the	System Supplies	Section 6.2.3	**Section 3.2, Appendix**

	basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.			**C-2**
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	System Supplies	Section 6.2.4	**Section 3.2, Appendix C-2**
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	**Section 3.2, Appendix C-2**
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	**Section 3.5**
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	**Section 3.6, 3.7**
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	**Section 3.3**
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	**Section 1.2, Appendix B-3**
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	**Section 1.2, Appendix B-3**
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	**Section 3.4, 3.6**
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	**Section 3.4**
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	**Section 3.4**
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	**Section 3.4**
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination	System Supplies (Recycled	Section 6.5.4	**Section 3.4, 3.6, 3.7**

	of the technical and economic feasibility of those uses.	Water)		
10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6.5.4	**Section 3.4, 3.6**
10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.5	**Section 3.4, 3.6**
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	**Section 3.4, 3.6, Appendix C-2**
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	**Section 3.5, 3.6, 3.7**
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	**Section 3.7**
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	**Section 3.7**
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	**Section 3.7**
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	**Section 3.7**
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	**Chapter 7**
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	**Section 6.1**
10632(a)(2)	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency.	Water Shortage Contingency Planning	Section 8.9	**Section 6.5**
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	**Section 6.6**
10632(a)(4)	Identify mandatory prohibitions against	Water Shortage	Section 8.2	**Section 6.2,**

	specific water use practices during water shortages.	Contingency Planning		**Appendix A-1**
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	**Section 6.1, Appendix A-1**
10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	**Section 6.2**
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	**Section 6.3**
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	**Appendix D-3**
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	**Section 6.4, Appendix D-3**
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	**Section 5.1, Appendix D-2**
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	**Section 5.1, Appendix D-2**
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	**Section 5.1, Appendix D-2**
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	**Section 1.3, Appendix B-3**
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	**Section 1.3, Appendix B-3**
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	**Section 1.3**
10635(b)	Provide supporting documentation that	Plan Adoption,	Section 10.4.4	**Chapter 6,**

	Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Submittal, and Implementation		**Appendix B-2**
10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	**Section 1.3, Appendix B-2**
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	**Section 1.3, Appendix B-2, B-3**
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	**Section 1.3, Appendix B-1**
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	**Section 1.3**
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 1.3**
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	**Section 1.3**
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	**Section 1.3**

Appendix A-3: SBX7-7 Compliance Forms

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SB X7-7 Verification Form Version FINAL.1

Table 4-C.4 has been modified from the FINAL version.

WUEdata Entry Exceptions
The data from the tables below will not be entered into WUEdata tables (the tabs for these tables' worksheets are colored **purple**). These tables will be submitted as separate uploads, in Excel, to WUEdata.
Process Water Deduction SB X7-7 tables 4-C, 4-C.1, 4-C.2, 4-C.3, 4-C.4 and 4-D A supplier that will use the process water deduction will complete the appropriate tables in Excel, submit them as a separate upload to the WUE data tool, and include them in its UWMP.
Target Method 2 SB X7-7 tables 7-B, 7-C, and 7-D A supplier that selects Target Method 2 will contact DWR (gwen.huff@water.ca.gov) for SB X7-7 tables 7-B, 7-C, and 7-D.
Target Method 4 These tables are only available online at http://www.dwr.water.ca.gov/wateruseefficiency/sb7/committees/urban/u4/ptm4.cfm A supplier that selects Target Method 4 will save the tables from the website listed above, complete the tables, submit as a separate upload to WUE data, and include them with its UWMP.

SB X7-7 Table 0: Units of Measure Used in UWMP* *(select one from the drop down list)*
Acre Feet
**The unit of measure must be consistent with Table 2-3*
NOTES:

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	**Parameter**	**Value**	**Units**
10- to 15-year baseline period	2008 total water deliveries	31,336	Acre Feet
	2008 total volume of delivered recycled water	-	Acre Feet
	2008 recycled water as a percent of total deliveries	0.00%	Percent
	Number of years in baseline period[1, 2]	10	Years
	Year beginning baseline period range	1995	
	Year ending baseline period range[3]	2004	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2004	
	Year ending baseline period range[4]	2008	

[1] If the 2008 recycled water percent is less than 10 percent, then the first baseline period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first baseline period is a continuous 10- to 15-year period. *[2] The Water Code requires that the baseline period is between 10 and 15 years. However, DWR recognizes that some water suppliers may not have the minimum 10 years of baseline data.*

[3] The ending year must be between December 31, 2004 and December 31, 2010.

[4] The ending year must be between December 31, 2007 and December 31, 2010.

NOTES:

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
☐	**1. Department of Finance** (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
☐	**2. Persons-per-Connection Method**
☒	**3. DWR Population Tool**
☐	**4. Other** DWR recommends pre-review
NOTES: See Section 4.1	

SB X7-7 Table 3: Service Area Population		
Year		Population
10 to 15 Year Baseline Population		
Year 1	1995	54,744
Year 2	1996	56,504
Year 3	1997	58,458
Year 4	1998	59,544
Year 5	1999	62,851
Year 6	2000	67,321
Year 7	2001	72,056
Year 8	2002	76,923
Year 9	2003	81,149
Year 10	2004	84,273
5 Year Baseline Population		
Year 1	2004	84,273
Year 2	2005	85,942
Year 3	2006	88,676
Year 4	2007	90,312
Year 5	2008	90,977
2015 Compliance Year Population		
2015		98,128
NOTES: See Section 4.1		

SB X7-7 Table 4: Annual Gross Water Use *								
Baseline Year *Fm SB X7-7 Table 3*		Volume Into Distribution System *This column will remain blank until SB X7-7 Table 4-A is completed.*	Deductions					Annual Gross Water Use
			Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water *This column will remain blank until SB X7-7 Table 4-B is completed.*	Water Delivered for Agricultural Use	Process Water *This column will remain blank until SB X7-7 Table 4-D is completed.*	
10 to 15 Year Baseline - Gross Water Use								
Year 1	1995	19,004			-		-	19,004
Year 2	1996	19,760			-		-	19,760
Year 3	1997	22,976			-		-	22,976
Year 4	1998	19,792			-		-	19,792
Year 5	1999	24,061			-		-	24,061
Year 6	2000	23,497			-		-	23,497
Year 7	2001	26,918			-		-	26,918
Year 8	2002	28,471			-		-	28,471
Year 9	2003	27,911			-		-	27,911
Year 10	2004	30,957			-		-	30,957
10 - 15 year baseline average gross water use								**24,335**
5 Year Baseline - Gross Water Use								
Year 1	2004	30,957			-		-	30,957
Year 2	2005	27,632			-		-	27,632
Year 3	2006	27,976			-		-	27,976
Year 4	2007	29,338			-		-	29,338
Year 5	2008	31,371			-		-	31,371
5 year baseline average gross water use								**29,455**
2015 Compliance Year - Gross Water Use								
2015		22,366	-		-		-	**22,366**

* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3

NOTES: See Section 4.1

SB X7-7 Table 4-A: Volume Entering the Distribution System(s)
Complete one table for each source.

Name of Source	All Retail Treated Water in Zone 1 and Zone 3
This water source is:	
	The supplier's own water source
	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1995	19,004		19,004
Year 2	1996	19,760		19,760
Year 3	1997	22,976		22,976
Year 4	1998	19,792		19,792
Year 5	1999	24,061		24,061
Year 6	2000	23,497		23,497
Year 7	2001	26,918		26,918
Year 8	2002	28,471		28,471
Year 9	2003	27,911		27,911
Year 10	2004	30,957		30,957
5 Year Baseline - Water into Distribution System				
Year 1	2004	30,957		30,957
Year 2	2005	27,632		27,632
Year 3	2006	27,976		27,976
Year 4	2007	29,338		29,338
Year 5	2008	31,371		31,371
2015 Compliance Year - Water into Distribution System				
2015		22,366		22,366

** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES: See Table 4-1 in Section 4.1

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Annual Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1995	54,744	19,004	310
Year 2	1996	56,504	19,760	312
Year 3	1997	58,458	22,976	351
Year 4	1998	59,544	19,792	297
Year 5	1999	62,851	24,061	342
Year 6	2000	67,321	23,497	312
Year 7	2001	72,056	26,918	334
Year 8	2002	76,923	28,471	330
Year 9	2003	81,149	27,911	307
Year 10	2004	84,273	30,957	328
10-15 Year Average Baseline GPCD				**322**
5 Year Baseline GPCD				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use
Year 1	2004	84,273	30,957	328
Year 2	2005	85,942	27,632	287
Year 3	2006	88,676	27,976	282
Year 4	2007	90,312	29,338	290
Year 5	2008	90,977	31,371	308
5 Year Average Baseline GPCD				**299**
2015 Compliance Year GPCD				
2015		98,128	22,366	**203**
NOTES:				

SB X7-7 Table 6: Gallons per Capita per Day *Summary From Table SB X7-7 Table 5*	
10-15 Year Baseline GPCD	322
5 Year Baseline GPCD	299
2015 Compliance Year GPCD	203
NOTES:	

SB X7-7 Table 7: 2020 Target Method *Select Only One*		
Target Method		Supporting Documentation
☐	Method 1	SB X7-7 Table 7A
☐	Method 2	SB X7-7 Tables 7B, 7C, and 7D *Contact DWR for these tables*
☐	Method 3	SB X7-7 Table 7-E
☒	Method 4	Method 4 Calculator
NOTES:		

SB X7-7 Table 7-A: Target Method 1 20% Reduction	
10-15 Year Baseline GPCD	**2020 Target GPCD**
322	**258**
NOTES:	

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD *From SB X7-7 Table 5*	Maximum 2020 Target[1]	Calculated 2020 Target[2]	**Confirmed 2020 Target**
299	284	261	**261**

[1] *Maximum 2020 Target is 95% of the 5 Year Baseline GPCD* [2] *2020 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.*

NOTES:

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target *Fm SB X7-7 Table 7-F*	10-15 year Baseline GPCD *Fm SB X7-7 Table 5*	**2015 Interim Target GPCD**
261	322	**292**
NOTES:		

SB X7-7 Table 9: 2015 Compliance								
Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments *(in GPCD)* Enter "0" if Adjustment Not Used: Extraordinary Events	Weather Normalization	Economic Adjustment	TOTAL Adjustments	Adjusted 2015 GPCD	2015 GPCD *(Adjusted if applicable)*	**Did Supplier Achieve Targeted Reduction for 2015?**
203	292	-	-	*From Methodology 8 (Optional)*	-	203	203	**YES**
NOTES: See Section 4.2								

PCWA-023

Appendix A-4: AWWA Water Audit Form

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AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0

Click to access definition
Click to add a comment

Water Audit Report for: Placer County Water Agency
Reporting Year: 2014 1/2014 - 12/2014

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

WATER SUPPLIED

<---------- Enter grading in column 'E' and 'J' ---------->

			Master Meter and Supply Error Adjustments		
			Pcnt:	Value:	
Volume from own sources:	7	32,475.280 acre-ft/yr	7 -1.00%		acre-ft/yr
Water imported:	7	1,138.800 acre-ft/yr	6 0.00%		acre-ft/yr
Water exported:	7	10,011.600 acre-ft/yr	6 0.00%		acre-ft/yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: 23,930.513 acre-ft/yr

AUTHORIZED CONSUMPTION

Click here: for help using option buttons below

			Pcnt:	Value:	
Billed metered:	7	21,969.000 acre-ft/yr			
Billed unmetered:	7	0.000 acre-ft/yr			
Unbilled metered:	7	0.000 acre-ft/yr			
Unbilled unmetered:	7	12.310 acre-ft/yr		12.310	acre-ft/yr

Use buttons to select percentage of water supplied OR value

AUTHORIZED CONSUMPTION: 21,981.310 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption) 1,949.203 acre-ft/yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:		59.826 acre-ft/yr	0.25%		acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	7	915.375 acre-ft/yr	4.00%		acre-ft/yr
Systematic data handling errors:	8	0.001 acre-ft/yr		0.001	acre-ft/yr

Apparent Losses: 975.202 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 974.001 acre-ft/yr

WATER LOSSES: 1,949.203 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 1,961.513 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	628.0	miles
Number of active AND inactive service connections:	8	35,837	
Service connection density:		57	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line: (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: 7 80.0 psi

COST DATA

Total annual cost of operating water system:	7	$45,597	$/Year
Customer retail unit cost (applied to Apparent Losses):	7	$1.56	$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	7	$358.94	$/acre-ft

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 70 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Volume from own sources
2: Billed metered
3: Unauthorized consumption

PCWA-023

PCWA-023

AWWA Free Water Audit Software:
System Attributes and Performance Indicators

Water Audit Report for: Placer County Water Agency
Reporting Year: 2014 | 1/2014 - 12/2014

*** YOUR WATER AUDIT DATA VALIDITY SCORE IS: 70 out of 100 ***

System Attributes:

	Apparent Losses:	975.202	acre-ft/yr
+	Real Losses:	974.001	acre-ft/yr
=	**Water Losses:**	**1,949.203**	acre-ft/yr
?	Unavoidable Annual Real Losses (UARL):	786.16	acre-ft/yr
	Annual cost of Apparent Losses:	$662,685	
	Annual cost of Real Losses:	$349,608	Valued at **Variable Production Cost**

Return to Reporting Worksheet to change this assumpiton

Performance Indicators:

Financial:	Non-revenue water as percent by volume of Water Supplied:	8.2%	
	Non-revenue water as percent by cost of operating system:	2229.8%	Real Losses valued at Variable Production Cost
Operational Efficiency:	Apparent Losses per service connection per day:	24.29	gallons/connection/day
	Real Losses per service connection per day:	24.26	gallons/connection/day
	Real Losses per length of main per day*:	N/A	
	Real Losses per service connection per day per psi pressure:	0.30	gallons/connection/day/psi
	From Above, Real Losses = Current Annual Real Losses (CARL):	974.00	acre-feet/year
?	Infrastructure Leakage Index (ILI) [CARL/UARL]:	1.24	

* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline

PCWA-023

AWWA Free Water Audit Software: Water Balance

WAS v5.0

Water Audit Report for:	Placer County Water Agency
Reporting Year:	2014 (1/2014 - 12/2014)
Data Validity Score:	70

Own Sources (Adjusted for known errors): 32,803.313

Water Imported: 1,138.800

System Input: 33,942.113

Water Exported: 10,011.600

Water Supplied: 23,930.513

Authorized Consumption: 21,981.310

- Billed Authorized Consumption: 21,969.000
  - Billed Metered Consumption (water exported is removed): 21,969.000
  - Billed Unmetered Consumption: 0.000
- Unbilled Authorized Consumption: 12.310
  - Unbilled Metered Consumption: 0.000
  - Unbilled Unmetered Consumption: 12.310

Water Losses: 1,949.203

- Apparent Losses: 975.202
  - Unauthorized Consumption: 59.826
  - Customer Metering Inaccuracies: 915.375
  - Systematic Data Handling Errors: 0.001
- Real Losses: 974.001
  - Leakage on Transmission and/or Distribution Mains: Not broken down
  - Leakage and Overflows at Utility's Storage Tanks: Not broken down
  - Leakage on Service Connections: Not broken down

Billed Water Exported: 10,011.600

Revenue Water: 10,011.600

- Revenue Water: 21,969.000

Non-Revenue Water (NRW): 1,961.513

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Appendix B-1: Resolution Adopting the 2015 UWMP

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RESOLUTION 16-17 OF THE BOARD OF DIRECTORS OF THE PLACER COUNTY WATER AGENCY ADOPTING THE 2015 UPDATE OF THE AGENCY'S URBAN WATER MANAGEMENT PLAN

Whereas, in 1984 the California Legislature enacted the Urban Water Management Act, requiring every urban water supplier to adopt and submit to the California Department of Water Resources an Urban Water Management Plan and to update it every five years; and

Whereas, Placer County Water Agency has, pursuant to the Act, prepared an Urban Water Management Plan in 1985 and updated it in 1992, 1997, 2000, 2005, and 2010; and

Whereas, this agency has prepared a draft update of its Urban Water Management Plan for 2015 for public review and for consideration to be adopted by this board; and

Whereas, a public hearing regarding the proposed update was held on the date of this resolution and notice of this hearing was given in accordance with the law beginning on May 19, 2016; and

Whereas, this board has received a report on the updated plan, considered plan contents, considered any public comments received, and requested such changes to the updated plan as it has deemed warranted.

Now therefore, be it resolved that the 2015 update to the Agency's Urban Water Management Plan, with any changes incorporated by this board as a result of the hearing, is hereby adopted and staff is directed to transmit a copy of the adopted document to the California Department of Water Resources by the prescribed due date.

This resolution was duly adopted at a meeting of the Board of Directors of the Placer County Water Agency held on June 2, 2016, by the following vote on roll call:

AYES: Robert Dugan, Primo Santini, III, and Chair Michael "Mike" Lee

NOES: None

ABSENT: Graham "Gray" Allen and Joshua Alpine

Signed and approved by me after its adoption this 2nd day of June, 2016.

Mike Lee, Chair of the Board
Placer County Water Agency

ATTEST:

Cheri Sprunck
Clerk to the Board

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Appendix B-2: Copies of General Notice of Availability

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16620072

LEGAL NOTICE

16620072

LEGAL NOTICE
NOTICE OF AVAILABILITY OF PLACER COUNTY WATER AGENCY DRAFT 2015 URBAN WATER MANAGEMENT PLAN UPDATE AND PUBLIC HEARING TO RECEIVE COMMENTS

NOTICE IS HEREBY GIVEN that the Placer County Water Agency's Draft 2015 Urban Water Management Plan Update (Draft Update) is available for public review and comment, and that the Board of Directors of the Placer County Water Agency (PCWA) has set a public hearing to receive comments on the Draft Update. The public hearing is to be conducted on June 2, 2016 at 2:00 pm at the regularly scheduled meeting of the PCWA Board of Directors, which will be held at its Business Center. The Business Center is located at 144 Ferguson Road, Auburn, CA, 95604.

NOTICE IS FURTHER GIVEN that, as part of the public hearing on the Draft Update, PCWA will conduct a public hearing to: (1) adopt a method, pursuant to California Water Code (CWC) § 10608.20, for determining its urban water use target in 2020, (2) allow community input regarding its plan for achieving its urban water use target, and (3) consider the economic impacts of its plan for achieving its urban water use target.

Copies of the Draft Update are available for public review at www.pcwa.net on and after Tuesday May 24, 2016 or available in hard copy at the Agency's Business Center for review on-site. Members of the public are invited to present their views on the Draft Update. Comments may be presented during the public hearing or may be submitted in writing prior to the hearing, addressed to Tony Firenzi, Deputy Director of Technical Services, mailed to Placer County Water Agency, PO Box 6570, Auburn, CA, 95604 or emailed to engineering@pcwa.net.

PUBLISHED IN AUBURN JOURNAL: MAY 19, 26, 2016

The above space is reserved for Court/County Filed Date Stamp

PROOF OF PUBLICATION
(2015.5 C.C.P.)

STATE OF CALIFORNIA
County of Placer

I am a citizen of the United States and employed by a publication in the County aforesaid. I am over the age of eighteen years, and not a party to the mentioned matter. I am the principal clerk of **The Auburn Journal**, a newspaper of general circulation, in the **City of Auburn**, which is printed and published in the **County of Placer**. This newspaper has been judged a newspaper of general circulation by the Superior Court of the State of California, in and for the **County of Placer**, on the date of May 26, 1952 (Case Number 17407). The notice, of which the attached is a printed copy (set in type not smaller than nonpareil) has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

MAY 19, 26

I certify, under penalty of perjury, that the foregoing is true and correct.

Terry Clark

Dated in Auburn, California

MAY 26, 2016

PROOF OF PUBLICATION
THE AUBURN JOURNAL
1030 HIGH STREET
AUBURN, CA 956-5910

Tony Firenzi

From: Stephanie Wens
Sent: Tuesday, May 17, 2016 12:08 PM
To: Tony Firenzi
Subject: FW: PCWA Public Notice for 2016 Urban Water Management Plan

FYI...

From: Legals [mailto:Legals@goldcountrymedia.com]
Sent: Tuesday, May 17, 2016 11:22 AM
To: Stephanie Wens
Subject: RE: PCWA Public Notice for 2016 Urban Water Management Plan

Stephanie,

This order has been completed and is scheduled as requested, **in AJ 5/19, & 26, 2016** .
The order number is 16620072. If you have any questions on this order please include the order number in the email.

Thank you for your business,

Terry Clark :)
Sr. Legal Clerk
916 774-7902

From: Stephanie Wens [mailto:swens@pcwa.net]
Sent: Friday, May 13, 2016 4:28 PM
To: Legals
Cc: Brent Smith; bcmartin1@sbcglobal.net; Brian Rickards; Greg Young (gyoung@tullyandyoung.com)
Subject: PCWA Public Notice for 2016 Urban Water Management Plan

Attn: Terry
Auburn Journal
PO Box 5910
Auburn, CA 95603
Fax: 885.7235

Customer # 15PL480

RE: PCWA Public Notice for 2016 Urban Water Management Plan

Dear Terry:

Please publish the attached Public Notice in the legal notice section of the Auburn Journal on:

- Thursday, May 19,2016
- Thursday, May 26,2016

Telephone me at (530) 823-4886 if there is a problem with the requested publication dates.

Please confirm receipt of this email and order number along with proof of publication when available.

Thank you,

Stephanie Wens
Administrative Aide
Technical Services Department
Engineering Division
Placer County Water Agency
(530) 823-4801
(530) 823-4884 fax
swens@pcwa.net

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Appendix B-3: Copies of Notification Letter

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PCWA
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PLACER COUNTY WATER AGENCY
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March 11, 2016
File No.: UWMP

Alan Johnston
Folsom Lake Mutual Water Company
6514 Mimus Lane
Granite Bay, CA 95746

Dear Alan Johnston:

The Placer County Water Agency (PCWA) is reviewing and updating its Urban Water Management Plan (UWMP) as required by the California Water Code (CWC). This effort must be completed by July 1, 2016. Pursuant to CWC §10621(b), PCWA must notify any city, county, and other interested parties within which it delivers water at least 60 days prior to a public hearing on the updated UWMP. This letter provides that notification. You will also be notified as to the hearing date, time, and location (anticipated to be held in June), and have access to a copy of the updated UWMP for review. The public hearing will allow: (1) community input regarding PCWA's implementation plan for included water conservation provisions, (2) consideration of the economic impacts of complying with CWC statutes governing the UWMP and (3) PCWA to adopt a method, pursuant to subdivision (b) of Section 10608.26, for determining its urban water use target.

If you have any questions regarding this notification or PCWA's UWMP update process, please contact me at (530) 823-4886.

Sincerely,

Anthony L. Firenzi, PE
Deputy Director of Technical Services

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March 11, 2016
File No.: UWMP

Gerry LaBudde
Christian Valley Park CSD
PO Box 3138
Auburn, CA 95604

Dear Gerry LaBudde:

The Placer County Water Agency (PCWA) is reviewing and updating its Urban Water Management Plan (UWMP) as required by the California Water Code (CWC). This effort must be completed by July 1, 2016. Pursuant to CWC §10621(b), PCWA must notify any city, county, and other interested parties within which it delivers water at least 60 days prior to a public hearing on the updated UWMP. This letter provides that notification. You will also be notified as to the hearing date, time, and location (anticipated to be held in June), and have access to a copy of the updated UWMP for review. The public hearing will allow: (1) community input regarding PCWA's implementation plan for included water conservation provisions, (2) consideration of the economic impacts of complying with CWC statutes governing the UWMP and (3) PCWA to adopt a method, pursuant to subdivision (b) of Section 10608.26, for determining its urban water use target.

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March 11, 2016
File No.: UWMP

Rick LaFrance
Lakeview Hills Community Association
1739 Creekside Drive
Folsom, CA 95630

Dear Rick LaFrance:

The Placer County Water Agency (PCWA) is reviewing and updating its Urban Water Management Plan (UWMP) as required by the California Water Code (CWC). This effort must be completed by July 1, 2016. Pursuant to CWC §10621(b), PCWA must notify any city, county, and other interested parties within which it delivers water at least 60 days prior to a public hearing on the updated UWMP. This letter provides that notification. You will also be notified as to the hearing date, time, and location (anticipated to be held in June), and have access to a copy of the updated UWMP for review. The public hearing will allow: (1) community input regarding PCWA's implementation plan for included water conservation provisions, (2) consideration of the economic impacts of complying with CWC statutes governing the UWMP and (3) PCWA to adopt a method, pursuant to subdivision (b) of Section 10608.26, for determining its urban water use target.

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March 11, 2016
File No.: UWMP

Paul Schmidt
Hidden Valley Community Association
7072 Pine Gate Way
Granite Bay, CA 95746

Dear Paul Schmidt:

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March 11, 2016
File No.: UWMP

President
Willo-Glen Water Co
PO Box 659
Loomis, CA 95650

Dear President:

The Placer County Water Agency (PCWA) is reviewing and updating its Urban Water Management Plan (UWMP) as required by the California Water Code (CWC). This effort must be completed by July 1, 2016. Pursuant to CWC §10621(b), PCWA must notify any city, county, and other interested parties within which it delivers water at least 60 days prior to a public hearing on the updated UWMP. This letter provides that notification. You will also be notified as to the hearing date, time, and location (anticipated to be held in June), and have access to a copy of the updated UWMP for review. The public hearing will allow: (1) community input regarding PCWA's implementation plan for included water conservation provisions, (2) consideration of the economic impacts of complying with CWC statutes governing the UWMP and (3) PCWA to adopt a method, pursuant to subdivision (b) of Section 10608.26, for determining its urban water use target.

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March 11, 2016
File No.: UWMP

David Mintline
Dutch Flat Mutual Water Company
PO Box 50
Dutch Flat, CA 95714

Dear David Mintline:

The Placer County Water Agency (PCWA) is reviewing and updating its Urban Water Management Plan (UWMP) as required by the California Water Code (CWC). This effort must be completed by July 1, 2016. Pursuant to CWC §10621(b), PCWA must notify any city, county, and other interested parties within which it delivers water at least 60 days prior to a public hearing on the updated UWMP. This letter provides that notification. You will also be notified as to the hearing date, time, and location (anticipated to be held in June), and have access to a copy of the updated UWMP for review. The public hearing will allow: (1) community input regarding PCWA's implementation plan for included water conservation provisions, (2) consideration of the economic impacts of complying with CWC statutes governing the UWMP and (3) PCWA to adopt a method, pursuant to subdivision (b) of Section 10608.26, for determining its urban water use target.

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March 11, 2016
File No.: UWMP

Max Bailey
Heather Glen CSD
PO Box 715
Applegate, CA 95703

Dear Max Bailey:

The Placer County Water Agency (PCWA) is reviewing and updating its Urban Water Management Plan (UWMP) as required by the California Water Code (CWC). This effort must be completed by July 1, 2016. Pursuant to CWC §10621(b), PCWA must notify any city, county, and other interested parties within which it delivers water at least 60 days prior to a public hearing on the updated UWMP. This letter provides that notification. You will also be notified as to the hearing date, time, and location (anticipated to be held in June), and have access to a copy of the updated UWMP for review. The public hearing will allow: (1) community input regarding PCWA's implementation plan for included water conservation provisions, (2) consideration of the economic impacts of complying with CWC statutes governing the UWMP and (3) PCWA to adopt a method, pursuant to subdivision (b) of Section 10608.26, for determining its urban water use target.

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March 11, 2016
File No.: UWMP

Norman Dean
Meadow Vista County Water District
PO Box 278
Meadow Vista, CA 95722

Dear Norman Dean:

The Placer County Water Agency (PCWA) is reviewing and updating its Urban Water Management Plan (UWMP) as required by the California Water Code (CWC). This effort must be completed by July 1, 2016. Pursuant to CWC §10621(b), PCWA must notify any city, county, and other interested parties within which it delivers water at least 60 days prior to a public hearing on the updated UWMP. This letter provides that notification. You will also be notified as to the hearing date, time, and location (anticipated to be held in June), and have access to a copy of the updated UWMP for review. The public hearing will allow: (1) community input regarding PCWA's implementation plan for included water conservation provisions, (2) consideration of the economic impacts of complying with CWC statutes governing the UWMP and (3) PCWA to adopt a method, pursuant to subdivision (b) of Section 10608.26, for determining its urban water use target.

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March 11, 2016
File No.: UWMP

Gerry LaBudde
Weimar Water Co.
PO Box 598
Weimar, CA 95736

Dear Gerry LaBudde:

The Placer County Water Agency (PCWA) is reviewing and updating its Urban Water Management Plan (UWMP) as required by the California Water Code (CWC). This effort must be completed by July 1, 2016. Pursuant to CWC §10621(b), PCWA must notify any city, county, and other interested parties within which it delivers water at least 60 days prior to a public hearing on the updated UWMP. This letter provides that notification. You will also be notified as to the hearing date, time, and location (anticipated to be held in June), and have access to a copy of the updated UWMP for review. The public hearing will allow: (1) community input regarding PCWA's implementation plan for included water conservation provisions, (2) consideration of the economic impacts of complying with CWC statutes governing the UWMP and (3) PCWA to adopt a method, pursuant to subdivision (b) of Section 10608.26, for determining its urban water use target.

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March 11, 2016
File No.: UWMP

Jason Tiffany
Midway Heights County Water District
PO Box 596
Meadow Vista, CA 95722

Dear Jason Tiffany:

The Placer County Water Agency (PCWA) is reviewing and updating its Urban Water Management Plan (UWMP) as required by the California Water Code (CWC). This effort must be completed by July 1, 2016. Pursuant to CWC §10621(b), PCWA must notify any city, county, and other interested parties within which it delivers water at least 60 days prior to a public hearing on the updated UWMP. This letter provides that notification. You will also be notified as to the hearing date, time, and location (anticipated to be held in June), and have access to a copy of the updated UWMP for review. The public hearing will allow: (1) community input regarding PCWA's implementation plan for included water conservation provisions, (2) consideration of the economic impacts of complying with CWC statutes governing the UWMP and (3) PCWA to adopt a method, pursuant to subdivision (b) of Section 10608.26, for determining its urban water use target.

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March 11, 2016
File No.: UWMP

David Muscarella
Golden Hills Mutual Water Co.
4061 Miners Drive
Loomis, CA 95650

Dear David Muscarella:

The Placer County Water Agency (PCWA) is reviewing and updating its Urban Water Management Plan (UWMP) as required by the California Water Code (CWC). This effort must be completed by July 1, 2016. Pursuant to CWC §10621(b), PCWA must notify any city, county, and other interested parties within which it delivers water at least 60 days prior to a public hearing on the updated UWMP. This letter provides that notification. You will also be notified as to the hearing date, time, and location (anticipated to be held in June), and have access to a copy of the updated UWMP for review. The public hearing will allow: (1) community input regarding PCWA's implementation plan for included water conservation provisions, (2) consideration of the economic impacts of complying with CWC statutes governing the UWMP and (3) PCWA to adopt a method, pursuant to subdivision (b) of Section 10608.26, for determining its urban water use target.

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March 11, 2016
File No.: UWMP

Rick Horst
City of Rocklin
3970 Rocklin Road
Rocklin, CA 95677

Dear Rick Horst:

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March 11, 2016
File No.: UWMP

Rick Angelocci
Town of Loomis
3665 Taylor Road
Loomis, CA 95650

Dear Rick Angelocci:

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March 11, 2016
File No.: UWMP

Tim Rundel
City of Auburn
1225 Lincoln Way
Auburn, CA 95603

Dear Tim Rundel:

The Placer County Water Agency (PCWA) is reviewing and updating its Urban Water Management Plan (UWMP) as required by the California Water Code (CWC). This effort must be completed by July 1, 2016. Pursuant to CWC §10621(b), PCWA must notify any city, county, and other interested parties within which it delivers water at least 60 days prior to a public hearing on the updated UWMP. This letter provides that notification. You will also be notified as to the hearing date, time, and location (anticipated to be held in June), and have access to a copy of the updated UWMP for review. The public hearing will allow: (1) community input regarding PCWA's implementation plan for included water conservation provisions, (2) consideration of the economic impacts of complying with CWC statutes governing the UWMP and (3) PCWA to adopt a method, pursuant to subdivision (b) of Section 10608.26, for determining its urban water use target.

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March 11, 2016
File No.: UWMP

Mark Miller
City of Colfax
PO Box 702
Colfax, CA 95713

Dear Mark Miller:

The Placer County Water Agency (PCWA) is reviewing and updating its Urban Water Management Plan (UWMP) as required by the California Water Code (CWC). This effort must be completed by July 1, 2016. Pursuant to CWC §10621(b), PCWA must notify any city, county, and other interested parties within which it delivers water at least 60 days prior to a public hearing on the updated UWMP. This letter provides that notification. You will also be notified as to the hearing date, time, and location (anticipated to be held in June), and have access to a copy of the updated UWMP for review. The public hearing will allow: (1) community input regarding PCWA's implementation plan for included water conservation provisions, (2) consideration of the economic impacts of complying with CWC statutes governing the UWMP and (3) PCWA to adopt a method, pursuant to subdivision (b) of Section 10608.26, for determining its urban water use target.

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March 11, 2016
File No.: UWMP

Remleh Scherzinger
Nevada Irrigation District
1036 West Main Street
Grass Valley, CA 95945

Dear Remleh Scherzinger:

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March 11, 2016
File No.: UWMP

David Boesch
Placer County CEO
175 Fulweiler Avenue
Auburn, CA 95603

Dear David Boesch:

The Placer County Water Agency (PCWA) is reviewing and updating its Urban Water Management Plan (UWMP) as required by the California Water Code (CWC). This effort must be completed by July 1, 2016. Pursuant to CWC §10621(b), PCWA must notify any city, county, and other interested parties within which it delivers water at least 60 days prior to a public hearing on the updated UWMP. This letter provides that notification. You will also be notified as to the hearing date, time, and location (anticipated to be held in June), and have access to a copy of the updated UWMP for review. The public hearing will allow: (1) community input regarding PCWA's implementation plan for included water conservation provisions, (2) consideration of the economic impacts of complying with CWC statutes governing the UWMP and (3) PCWA to adopt a method, pursuant to subdivision (b) of Section 10608.26, for determining its urban water use target.

If you have any questions regarding this notification or PCWA's UWMP update process, please contact me at (530) 823-4886.

Sincerely,

Anthony L. Firenzi, PE
Deputy Director of Technical Services

ALF:zh

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Auburn, CA 95604
PHONE
(530) 823-4850
(800) 464-0030
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March 11, 2016
File No.: UWMP

Nav Gill
Sacramento County CEO
700 H Street, Room 7650
Sacramento, CA 95814

Dear Nav Gill:

The Placer County Water Agency (PCWA) is reviewing and updating its Urban Water Management Plan (UWMP) as required by the California Water Code (CWC). This effort must be completed by July 1, 2016. Pursuant to CWC §10621(b), PCWA must notify any city, county, and other interested parties within which it delivers water at least 60 days prior to a public hearing on the updated UWMP. This letter provides that notification. You will also be notified as to the hearing date, time, and location (anticipated to be held in June), and have access to a copy of the updated UWMP for review. The public hearing will allow: (1) community input regarding PCWA's implementation plan for included water conservation provisions, (2) consideration of the economic impacts of complying with CWC statutes governing the UWMP and (3) PCWA to adopt a method, pursuant to subdivision (b) of Section 10608.26, for determining its urban water use target.

If you have any questions regarding this notification or PCWA's UWMP update process, please contact me at (530) 823-4886.

Sincerely,

Anthony L. Firenzi, PE
Deputy Director of Technical Services

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March 11, 2016
File No.: UWMP

Mr. Jim Mulligan
Water Utility Manager
City of Roseville
Environmental Utilities Department
2005 Hilltop Circle
Roseville, CA 95747

Dear Mr. Mulligan:

As you are well aware, 2015 UWMP updates are being prepared by both of our agencies for submittal to DWR by July 1, 2016. As a PCWA wholesale raw water customer, we want to officially notify you of our UWMP update efforts, pursuant to California Water Code §10621(b). But more importantly, we want to provide for your review our current representation of your future demands on our water system. We would expect that our representation would match values you will use to characterize our supply in your UWMP.

The values in the table below represent conditions derived based upon the following paragraphs. If you do not agree with this representation or with our explanation, please contact us immediately and we can collaborate on refined characterizations.

Basis[1]: PCWA's current contract with the City of Roseville (Roseville) includes an annual entitlement of 30,000 acre-feet (ac-ft) of water from the Middle Fork Project (MFP). Roseville's available surface water supply from the MFP is subject to terms in its PCWA contract, combined with Water Forum Agreement restrictions that limit the amount of water that Roseville is able to divert from the American River.

According to Roseville's Water Forum Purveyor Specific Agreement, Roseville's American River diversion restrictions are dependent upon the projected March through November Unimpaired Inflow into Folsom Reservoir (UIFR). Roseville can divert 54,900 ac-ft/year from the American River in wet years (when projected March through November UIFR is greater than 950,000 ac-ft). During drier years when the UIFR is between 400,000 ac-ft and 950,000, Roseville decreases its diversion amounts from 54,900 ac-ft/year down to 39,800 ac-ft/year. During the driest years, when projected March through November UIFR is less than 400,000 ac-ft, the Water Forum signatories have agreed to meet and confer to develop a plan for water use.

[1] The following language will likely be included as drafted within our 2015 UWMP to provide needed explanatory text.

The following buildout uses of PCWA's MFP supply have been assumed from these terms of American River diversion for the City of Roseville:

- Normal Year Conditions – 30,000 ac-ft
- Single-Dry Year Conditions – 23,800 ac-ft
- Multi-Dry Year Conditions – 30,000 ac-ft

PCWA characterizes a single-dry year event as more critical, less supply, than a multi-dry year event. We believe this characterization to be more fitting in the American River water supply system, which tends to operate on a year-to-year basis for water supply.

The MFP supply will be delivered to Roseville pursuant to its contract with PCWA and Water Forum Agreement commitments, as described above. PCWA intends to meet all obligations of its contract with Roseville as future conditions and contract terms evolve. Based on Roseville's 2010 UWMP, PCWA's interpretation of Roseville's build-out demand for MFP water in wet and dry years is 30,000 ac-ft, decreasing to 23,800 ac-ft in driest years.

Please let us know if we have, or have not, characterized these buildout demands correctly. If possible, we would like to be provided a growth curve of these demands starting in 2020 and going to buildout in 5-year increments. Please provide this for inclusion in our UWMP.

We hope that by providing this information early in our UMWP development process we can quickly obtain your review and concurrence to facilitate our continued analytical work. The values provided above represent our planned characterization we have used to assess the reliability of our deliveries as part of our UWMP process and for our Middle Fork water right permit EIR effort.

In addition to the above coordination actions, we also want to notify you that we will hold a public hearing to adopt our 2015 UWMP and will provide the specific information regarding date, time, and location (anticipated to be held in June) at a later time.

If you have any questions or concerns regarding our current representation of your demands, or ideas for additional collaboration steps, please contact me at (530) 823-4886. We appreciate your on-going efforts to help us both incorporate the most representative information in our respective UWMPs.

Sincerely,

Anthony L. Firenzi, PE
Deputy Director of Technical Services

ALF:zh

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Tony Firenzi

From: Tony Firenzi
Sent: Wednesday, April 27, 2016 4:56 PM
To: 'McKinney, Kelye'
Cc: Mulligan, Jim; Boak, Colleen; Brent Smith; Andy Fecko; Ben Ransom
Subject: RE: UWMP

Kelye,

We will revise the value to 30,000 as you requested.

Regards,
Tony

-----Original Message-----
From: McKinney, Kelye [mailto:KMcKinney@roseville.ca.us]
Sent: Wednesday, April 27, 2016 7:33 AM
To: Tony Firenzi <tfirenzi@pcwa.net>
Cc: Mulligan, Jim <JMulligan@roseville.ca.us>; Boak, Colleen <CBoak@roseville.ca.us>; Brent Smith <BSmith@pcwa.net>
Subject: UWMP

Hi Tony I understand you sent Roseville a letter on what is being put in your UWMP for Roseville supplies. Please use 30,000 in all year types. That is what we have been showing in past UWMPs and on our 2015 update which we took to our PUC last night.

Please let me know if we need to discuss at all.

Thanks
Kelye

Sent from my iPhone

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Auburn, CA 95604
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WWW.PCWA.NET

March 11, 2016
File No.: UWMP

Keith Durkin
Assistant General Manager
San Juan Water District
9935 Auburn Folsom Road
Granite Bay, CA 95746

Dear Mr. Durkin:

As you are well aware, 2015 UWMP updates are being prepared by both of our agencies for submittal to DWR by July 1, 2016. As a PCWA wholesale raw water customer, we want to officially notify you of our UWMP update efforts, pursuant to California Water Code §10621(b). But more importantly, we want to provide for your review our current representation of your future demands on our water system. We would expect that our representation would match values you will use to characterize our supply in your UWMP.

The values in the table below represent conditions derived based upon the following paragraphs. If you do not agree with this representation or with our explanation, please contact us immediately and we can collaborate on refined characterizations.

Basis[1]: PCWA's current contract with San Juan Water District (SJWD) includes an annual entitlement of 25,000 acre-feet (ac-ft) of water from the Middle Fork Project (MFP). SJWD's available surface water supply from the MFP is subject to terms in its PCWA contract, combined with Water Forum Agreement restrictions that limit the amount of water that SJWD is able to divert from the American River. SJWD also has an agreement with the City of Roseville to supply 4,000 ac-ft of the District's PCWA contract supply to the City in wet years, as defined in the Water Forum Agreement.

According to SJWD's Water Forum Purveyor Specific Agreement, SJWD's American River diversion restrictions are dependent upon the projected March through November Unimpaired Inflow into Folsom Reservoir (UIFR). SJWD can divert its full 82,200 ac-

[1] The following language will likely be included as drafted within our 2015 UWMP to provide needed explanatory text.

ft/year from the American River in wet years (when projected March through November UIFR is greater than 950,000 ac-ft). This would include the 25,000 ac-ft MFP supply from PCWA. During drier years when the UIFR is between 400,000 ac-ft and 950,000, SJWD decreases its diversion amounts from 82,200 ac-ft/year to 54,200 ac-ft/year, which includes a reduction of the MFP supply to 10,000 ac-ft. During the driest years, when projected March through November UIFR is less than 400,000 ac-ft, the Water Forum signatories have agreed to meet and confer to develop a plan for water use.

The following buildout uses of PCWA's MFP supply have been assumed from these terms of American River diversion for San Juan Water District:

- Normal Year Conditions – 12,461 ac-ft plus 4,000 ac-ft to the City for a total of 16,461 ac-ft
- Single-Dry Year Conditions – 10,000 ac-ft
- Multi-Dry Year Conditions – 12,461 ac-ft

PCWA characterizes a single-dry year event as more critical, less supply, than a multi-dry year event. We believe this characterization to be more fitting in the American River water supply system, which tends to operate on a year-to-year basis for water supply.

The MFP supply will be delivered to SJWD pursuant to its contract with PCWA and Water Forum Agreement commitments, as described above. In the future, if SJWD amends its current Warren Act Contract with the U.S. Bureau of Reclamation to include delivery of MFP water into its Sacramento County retail service area, PCWA will reevaluate SJWD's build-out demand and update in future UWMP projections. PCWA intends to meet all obligations of its contract with SJWD as future conditions and contract terms evolve.

Based on SJWD's 2010 UWMP, PCWA's interpretation of SJWD's build-out demand for MFP water in its Placer County retail service area in wet years is 12,461 ac-ft[2] plus an additional 4,000 ac-ft (Roseville supply) and 10,000 ac-ft in driest years.
For planning purposes, PCWA is assuming the full build-out demand will occur by 2020, and continue to exist throughout PCWA's UWMP planning horizon. Please let us know if this assumption is incorrect.

We hope that by providing this information early in our UMWP development process we can quickly obtain your review and concurrence to facilitate our continued analytical work. The values provided above represent our planned characterization we have used to assess the reliability of our deliveries as part of our UWMP process and for our Middle Fork water right permit EIR effort.

---

[2] The Placer County portion is approximately 75% of SJWD's retail service area. SJWD's 2010 UWMP identified build-out retail demand to be 16,615 ac-ft, with 75% equal to 12,461 ac-ft.

In addition to the above coordination actions, we also want to notify you that we will hold a public hearing to adopt our 2015 UWMP and will provide the specific information regarding date, time, and location (anticipated to be held in June) at a later time.

If you have any questions or concerns regarding our current representation of your demands, or ideas for additional collaboration steps, please contact me at (530) 823-4886. We appreciate your on-going efforts to help us both incorporate the most representative information in our respective UWMPs.

Sincerely,

Anthony L. Firenzi, PE
Deputy Director of Technical Services

ALF:zh

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Tony Firenzi

From: Tony Firenzi
Sent: Thursday, March 24, 2016 1:35 PM
To: 'Greg Young' (gyoung@tullyandyoung.com)
Cc: Brian Rickards; Brian Martin (Home) (bcmartin1@sbcglobal.net)
Subject: FW: PCWA UWMP

Greg,

Response from SJWD, for your use.

Tony

From: Keith Durkin [mailto:kdurkin@sjwd.org]
Sent: Thursday, March 24, 2016 1:33 PM
To: Lisa Brown <lbrown@sjwd.org>
Cc: Tony Firenzi <tfirenzi@pcwa.net>
Subject: RE: PCWA UWMP

Lisa – please ask KJ if they have our retail population information by county.

Tony – you are correct that our Placer County service area is nearly built-out. Table 3-1b indicates the population isn't even going to increase by 10% by 2040. This suggests the area is at least 90% built-out. Considering that, your assumptions are probably within the margin of error. Also, it appears our consultant used the Granite Bay Community Plan for growth rate assumptions. You may want to reference that document for more information.

From: Tony Firenzi [mailto:tfirenzi@pcwa.net]
Sent: Thursday, March 24, 2016 1:23 PM
To: Keith Durkin
Cc: Lisa Brown
Subject: RE: PCWA UWMP

Thanks Keith and Lisa! The assumption of buildout by 2020 was only for SJWD in Placer County, which I thought may almost be built-out at this point. Are you able to provide a table similar to that below for only Placer County?
Thanks again!
Tony

From: Keith Durkin [mailto:kdurkin@sjwd.org]
Sent: Thursday, March 24, 2016 1:19 PM
To: Tony Firenzi <tfirenzi@pcwa.net>
Cc: Lisa Brown <lbrown@sjwd.org>
Subject: PCWA UWMP

Hi Tony,

Thank you for your letter dated March 11 regarding your 2015 UWMP update and the information you intend to include that quantifies SJWD's use of MFP supply. We agree with the assumptions you've used for current conditions and water use projections through build-out. However, I have two comments on the information you provided. First, you state that for planning purposes, PCWA is assuming full build-out demand of our Placer County retail service area will occur by the year 2020. Our UWMP, which includes both our Placer and Sacramento County service areas, does not assume this aggressive growth rate. See table 3-1b from our plan provided below.

Table 3-1b: Retail: Population – Current and Projected

Population Served	2015	2020	2025	2030	2035	2040(opt)
	29,444	30,099	30,769	31,454	32,155	32,870

NOTES: Growth projections based on a weighted average of 75 percent of the Granite Bay Community Plan growth rate and 25 percent of the SACOG growth rate for Orangevale.

Second, we completely agree with the statement regarding amending our Warren Act Contract to allow use of our MFP water within our Sacramento County retail and wholesale service areas (note addition of wholesale). We have started this discussion with Reclamation. Amending our Warren Act Contract will provide greater flexibility for us to manage our water supply resources, and may provide opportunities for greater participation in plans for developing a regional water bank, among other options.

Again, thank you for providing your UWMP information for our review.

Keith Durkin, P.E. | Assistant General Manager
San Juan Water District | sjwd.org
Main: 916-791-0115 | Direct: 916-791-6906

Tony Firenzi

From: Lisa Brown <lbrown@sjwd.org>
Sent: Wednesday, April 06, 2016 2:33 PM
To: Tony Firenzi
Cc: Keith Durkin
Subject: San Juan/PCWA contract summary

Tony,
Thank you for the call this morning. We wanted to summarize our understanding of the discussion:

1. San Juan Water District would like to maintain the 25,000 AF contract amount with PCWA. However, based on the 2015 Urban Water Management Plan demand projections through 2040, San Juan is showing total retail demand of 20,672 AF (see Table 4-3b below),. Assuming that 75% of the total demand is in the placer county portion of our retail service area, San Juan is projecting contract use of 15,504 AF for San Juan's Placer County retail service area, through 2040. San Juan is currently working with the US Bureau of Reclamation on getting a Warren Act contract amendment to allow this contract water be used throughout San Juan's service area (to include Sacramento County). If this occurs, future Urban Water Management Plans will be amended to reflect increased PCWA contract water use demands.
2. In addition to the above mentioned demands, the 4,000 AF of wet year contract water to Roseville will remain.
3. In dry year conditions, San Juan will utilize the PCWA contract to help meet water forum cutbacks. San Juan assumes that a continued 15,500 AF of water could be used in Placer County regardless of condition and that San Juan could claim a contractual reduction in use of 9,500 AF in dry year conditions to help meet our water forum commitment.

In summary, we propose the following demand projections:
Normal year conditions – 15,500 AF plus 4,000 AF to the City of Roseville for a total of 19,500 AF
Single dry year conditions – 15,500 AF
Multi-dry year conditions – 15,500 AF

Table 4-3b: Retail: Total Water Demands

	2015	2020	2025	2030	20:
Potable and Raw Water *From Tables 4-1 and 4-2*	9,610	17,030	18,006	18,851	19,7
Recycled Water Demand *From Table 6-4*	0	0	0	0	0
TOTAL WATER DEMAND	9,610	17,030	18,006	18,851	19,7

NOTES: Projected Water Use in units of AFY.

Sincerely,
Lisa

Lisa Brown | Customer Service Manager
San Juan Water District | sjwd.org
Main: 916-791-0115 | Direct: 916-791-6948
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Tony Firenzi

From: Tony Firenzi
Sent: Wednesday, April 13, 2016 7:31 AM
To: 'Keith Durkin'
Cc: Lisa Brown
Subject: RE: UWMP
Attachments: WFA Intro Table.pdf; SanJuan Demand.xlsx

Thanks. Attached are documents referenced by our water rights consultant in developing their dry year supply assumption for SJWD of 10,000 af. Happy to discuss anytime.

From: Keith Durkin [mailto:kdurkin@sjwd.org]
Sent: Wednesday, April 13, 2016 6:38 AM
To: Tony Firenzi <tfirenzi@pcwa.net>
Cc: Lisa Brown <lbrown@sjwd.org>
Subject: UWMP

Tony,

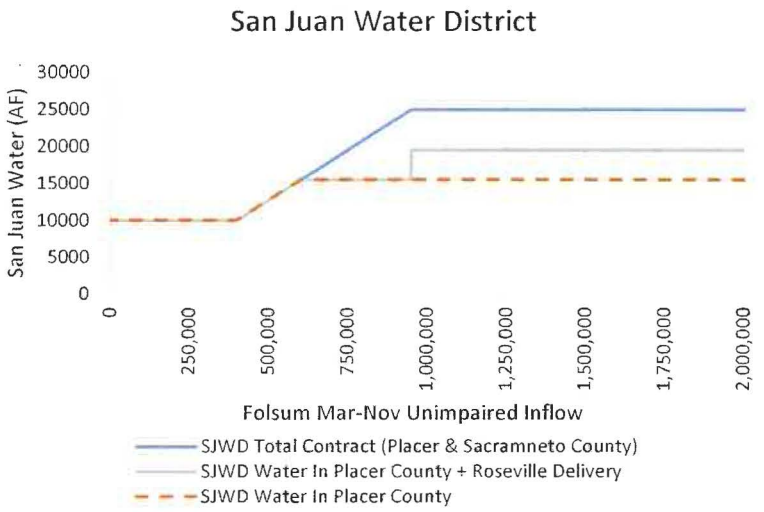
I received your voicemail. I'm on vacation this week, but I passed it along to Lisa. She and Shauna may give you a call for clarification and discussion. Otherwise we can talk when I get back Monday.

Thanks.

Keith Durkin, P.E. | Assistant General Manager
San Juan Water District | sjwd.org
Main: 916-791-0115 | Direct: 916-791-6906

	Folsom Unimpaired Inflow TAF	SJWD Total Contract (Placer &	SJWD Water In Placer County	SJWD Water In Placer County +	Line Equation
	2000000	25000	15,500	19,500	
	1500000	25000	15,500	19,500	
	950000.1	25000	15,500	19,500	25000
	950000	25000	15,500	15500	15500
Solve	601666.667	15500	15500	15500	10000
	400000	10000	10,000	10,000	
	0	10000	10,000	10,000	

Y=Mx+B	
M=	0.027273
B=	-909.091



PCWA-023

1995 AND PROPOSED YEAR 2030 SURFACE WATER DIVERSIONS

Note: The diversions described below, combined with the dry year actions, will meet each supplier's customers' needs to the year 2030.

AMERICAN RIVER DIVERSIONS—UPSTREAM OF NIMBUS

WATER SUPPLIER/ ORGANIZATION	1995 BASELINE (1)	2030 DIVERSION (wet/ave years)	2030 DIVERSION (drier years)	2030 DIVERSION (driest years)(2)
City of Folsom	20,000 AF (19)	34,000 AF (3)	Decreasing from 34,000 AF to 22,000 AF (4)	20,000 AF (5)
Northridge Water District (17)	0 AF	29,000 AF (9)	0 AF (10)	0 AF
Placer County Water Agency (6) (7) [Subject to resolution of remaining issues (21)]	8,500 AF	35,500 AF (3)	Continue to divert 35,500 AF, with a replacement to the river equivalent to their drier diversions above baseline. The drier the year, the more water would be replaced up to 27,000 AF (4) (20)	Continue to divert 35,500 AF, with a replacement of 27,000 AF to the river. (20)
City of Roseville (7)	19,800 AF	54,900 AF (3)	Decreasing from 54,900 AF to 39,800 AF with a replacement to the river equivalent to their drier diversions above baseline. The drier the year, the more water would be replaced up to 20,000 AF (4)	Continue to divert 39,800 AF, with a replacement of 20,000 AF to the river.

1995 AND PROPOSED YEAR 2030 SURFACE WATER DIVERSIONS (continued)

Note: The diversions described below, combined with the dry year actions, will meet each supplier's customers' needs to the year 2030.

AMERICAN RIVER DIVERSIONS—UPSTREAM OF NIMBUS

WATER SUPPLIER/ ORGANIZATION	1995 BASELINE (1)	2030 DIVERSION (wet/ave years)	2030 DIVERSION (drier years)	2030 DIVERSION (driest years) (2)
San Juan WD & Consortium in Sacramento County (Citrus Heights WD, Fair Oaks WD, Orange Vale Water Co)	44,200 AF (8)	57,200 AF (3)	Decreasing from 57,200 to 44,200 AF (4)	44,200 AF
San Juan WD (Placer County)	10,000 AF	25,000 AF (3)	Decreasing from 25,000 to 10,000 AF (4)	10,000 AF
South Sacramento County Agriculture (includes Clay WD, Omochumne-Hartnell WD, Galt ID, & Sacramento County Farm Bureau)	0 AF	35,000 AF (9)	0 AF (10)	0 AF
SMUD	15,000 AF (11)	30,000 AF (3)	Decreasing from 30,000 to 15,000 AF (4)	15,000 AF

1995 AND PROPOSED YEAR 2030 SURFACE WATER DIVERSIONS (continued)

AMERICAN RIVER DIVERSIONS—BETWEEN NIMBUS & THE MOUTH

WATER SUPPLIER/ ORGANIZATION	1995 BASELINE (1)	2030 DIVERSION (wet/ave years)	2030 DIVERSION (drier years)	2030 DIVERSION (driest years) (2)
Carmichael WD (18)	12,000 AF	12,000 AF	12,000 AF	12,000 AF
City of Sacramento	50,000 AF	310 CFS (12) (13)	90,000 AF (15)	50,000 AF

SACRAMENTO RIVER DIVERSIONS

WATER SUPPLIER/ ORGANIZATION	1995 BASELINE	2030 DIVERSION (wet/ave years) (14)	2030 DIVERSION (drier years) (14)	2030 DIVERSION (driest years) (14)
City of Sacramento	45,000 AF	290 CFS (13)	290 CFS (13)	290 CFS (13)
County of Sacramento	0 AF	Up to 78,000 AF (16)	Up to 78,000 AF (16)	Up to 78,000 AF (16)
Placer County Water Agency (6) [Subject to resolution of remaining issues (21)]	0 AF	35,000 AF	35,000 AF	35,000 AF
Natomas Central Mutual Water Co. within Sacramento County	53,000 AF	45,600 AF	45,600 AF	45,600 AF

1995 AND PROPOSED YEAR 2030 SURFACE WATER DIVERSIONS — NOTES

1. Baseline: Baseline means the historic maximum amount of water that suppliers diverted from the American River in any one year through the year 1995 or in certain appropriate instances other amounts specified in a purveyor's specific agreement. Clarifications pertaining to the San Juan Water District, SMUD and the City of Folsom are noted in footnotes 8, 11, and 19.
2. Driest Years (i.e. Conference Years): Years when the projected March through November Unimpaired Inflow to Folsom Reservoir is less than 400,000 acre feet. Conference years are those years which require diverters and others to meet and confer on how best to meet demands and protect the American River.
3. Wet/Ave Years: As it applies to these diverters, years when the projected March through November Unimpaired Inflow to Folsom Reservoir is greater than 950,000 acre feet.
4. Drier Years: As it applies to these diverters, years when the projected March through November Unimpaired Inflow to Folsom Reservoir is less than 950,000 acre feet.
5. In the Conference Years the City of Folsom would reduce diversions by an additional 2,000 acre feet below its baseline to 18,000 AF through additional conservation to achieve recreational benefits to Folsom Reservoir and fishery benefits to the Lower American River.
6. PCWA would receive support for an American River diversion of 35,500 AF (8,500 AF existing and 27,000 AF additional) in wetter and average years and a new Sacramento/Feather Diversion of 35,000 AF. PCWA is willing to exchange 35,000 AF of its American River water for Sacramento and/or Feather River water provided the terms of such exchange do not result in any diminution of PCWA's water supply or an increased cost to PCWA.
7. For these suppliers, some or all of their water supply diverted from the American River or Folsom Reservoir in the drier and driest years could be replaced with water released from the Middle Fork Project Reservoirs by reoperating those reservoirs. Reoperation of the MFP reservoirs causes the reservoirs to be drawn down below historical operational minimum pool volumes.
8. The baseline for SJWD and their wholesale service area within Sacramento County is the full amount of their entitlements (CVP contract and water rights) which they exercised in 1995.
9. Wet/Ave Years: As it applies to these diverters, years when the projected March through November Unimpaired Inflow to Folsom Reservoir is greater than 1,600,000 acre feet.
10. Drier Years: As it applies to these diverters, years when the projected March through November Unimpaired Inflow to Folsom Reservoir is less than 1,600,000 acre feet.
11. The baseline for SMUD is the 1995 diversion amount which reflects the shut down of Rancho Seco Power Plant.
12. Wet/Ave Years: As it applies to the City of Sacramento, time periods when the flows bypassing the E. A. Fairbairn Water Treatment Plant diversion exceed the "Hodge flows."
13. For modeling purposes, it is assumed that the City of Sacramento's total annual diversions from the American and Sacramento River in year 2030 would be 130,600 AF for use within the City limits.
14. As it applies to these diverters, there is no Water Forum limitation to diversions from the Sacramento River.

1995 AND PROPOSED YEAR 2030
SURFACE WATER DIVERSIONS — NOTES (continued)

15. Drier Years: As it applies to the City of Sacramento, time periods when the flows bypassing the City's E. A. Fairbairn Water Treatment Plant diversion do not exceed the "Hodge flows." Within its existing capacity, the City can divert from the American River 155 cfs in June, July and August, 120 cfs in January through May and September, and 100 cfs in October through December.

16. The total for the County of Sacramento (78,000 AF) represents 45,000 AF of firm entitlement and 33,000 AF of intermittent water. The intermittent supply is subject to reduction in the drier and driest years. To reduce reliance on intermittent surface water, the County of Sacramento intends to pursue additional firm supplies.

17. Northridge Water District (NWD) and other signatories have agreed that for an interim ten year period, NWD would be able to divert PCWA water in years when the projected March through November Unimpaired Inflow to Folsom Reservoir is greater than 950,000 acre feet. After the ten-year period, unless the State Water Resources Control Board issues a subsequent order, NWD will divert up to 29,000 acre feet of water from Folsom Reservoir under the NWD-PCWA contract only in years when the projected March through November unimpaired inflow into Folsom Reservoir is greater than 1,600,000 AF.

18. Carmichael Water District will divert and use up to their license amount of 14,000 acre feet. By the year 2030, it is most likely that the water demand for the District will be reduced to their historic baseline level of 12,000 acre feet by implementation of Urban Water Conservation Best Management Practices. Signatories to the *Water Forum Agreement* acknowledge and agree that CWD shall not relinquish control of or otherwise abandon the right to any quantity it has foregone delivery and/or diversion of under this *Agreement*, and shall retain the right (if any) to transfer that water for other beneficial uses, after that water has served its purpose of assisting in the implementation of the Improved Pattern of Fishery Flow Releases, for diversion or rediversion at, near, or downstream of the confluence of the Lower American River and the Sacramento River. The signatories also recognize that any such transfer of water by CWD must be in accordance with applicable provisions of federal and state law.

19. This is an agreed upon amount which is within the historic diversion data and is equivalent to Folsom's treatment capacity as of 1999.

20. Replacement of water to the river as a dry year action as provided in PCWA's specific agreement is contingent on PCWA's ability to sell this water to the Department of the Interior to meet Anadromous Fishery Restoration Program goals for the Lower American River or to other parties for their use after it flows down the Lower American River.

21. Remaining issues which are being negotiated are: 1) environmentalists' support for PCWA pumps at Auburn, 2) how water conservation Best Management Practice #5 (Large Landscape Water Audits and Incentives for Commercial, Industrial, Institutional and Irrigation Accounts) will be implemented, 3) environmentalists' support for conditions related to release of replacement water in drier and driest years.

Table 7-3: Wholesale and Retail: Single Dry Year Supply and Demand Calculations	2020	2025	2030	2035	2040
Existing Supply Contracts					
Water Rights	33,000	33,000	33,000	33,000	33,000
USBR CVP Folsom Lake Contract	24,200	24,200	24,200	24,200	24,200
PCWA Contract	25,000	25,000	25,000	25,000	25,000
Total Supply Contracts	**82,200**	**82,200**	**82,200**	**82,200**	**82,200**
Dry Year Supply Reductions					
Water Rights	0	0	0	0	0
Water Forum Agreement Maximum Reductions[1]	-28,000	-28,000	-28,000	-28,000	-28,000
Total Existing Supplies	**54,200**	**54,200**	**54,200**	**54,200**	**54,200**
Demand					
Wholesale Demand[2]	51,055	52,813	54,495	56,235	57,997
20x2020 Reduction in Retail Demand[3]	-1,237	-1,309	-1,375	-1,444	-1,513
Reduction from WSCP[4]	-7,473	-7,726	-7,968	-8,219	-8,473
Demand w/ Conservation	**42,345**	**43,779**	**45,152**	**46,573**	**48,012**
Supply-Demand Balance	**11,855**	**10,421**	**9,048**	**7,627**	**6,188**
Supplemental Groundwater					
Additional Wholesale Groundwater Pumping[5]	0	0	0	0	0
Antelope Booster Pump-Back Station Groundwater (SSWD)[6]	0	0	0	0	0
Total Supplemental Groundwater	**0**	**0**	**0**	**0**	**0**

NOTES:

1. Assumes projected inflow to Folsom Reservoir is between 400,000 AFY and 950,000 AFY (non-Conference Year). SJWD is a signatory to the Water Forum Agreement which can reduce total surface water diversion in proportion to the water level in Folsom Lake to as low as 54,200 AF. The decrease in diversion amounts will be met by a combination of reductions of PCWA and USBR CVP supply, both contractually and at the District's discretion.
2. Projected wholesale water demands from Chapter 4, Table 4-3a, minus water supply to City of Roseville (4,000 AF).
3. Reduction needed to meet retail SBX7-7 compliance calculated in Chapter 5.
4. 15 percent reductions from wholesale demand by implementing WSCP Stage 3. See Chapter 8, Water Shortage Contingency Planning.
5. Groundwater supply from wholesale customer agencies used to replace surface water supply reductions per the Water Forum Agreement and the WSCP in Chapter 8.
6. SSWD groundwater via the Antelope Booster Pump-Back Station is intended to be provided during the summer months in dry years or when SJWD's surface water supplies are reduced.

If you have any additional questions/concerns, please feel free to give me a call.
Sincerely,
Lisa

Lisa Brown | Customer Service Manager
San Juan Water District | sjwd.org
Main: 916-791-0115 | Direct: 916-791-6948
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Tony Firenzi

From: Keith Durkin <kdurkin@sjwd.org>
Sent: Friday, April 29, 2016 3:49 PM
To: Tony Firenzi
Cc: Lisa Brown
Subject: RE: SJWD UWMP

and I will add we do not have a problem with your plan assumption that we are reduced to 10,000 AF of our 25,000 AF PCWA water in dry years. That is not inconsistent with our note 1.

From: Lisa Brown
Sent: Friday, April 29, 2016 3:43 PM
To: 'Tony Firenzi'
Cc: Keith Durkin
Subject: SJWD UWMP

Hi Tony,
In response to your call to Keith, I wanted to follow up with the strategy we incorporated into our Plan. In single year and multiple dry year scenarios we are being extremely conservative by stating we are reducing supply by the maximum water forum agreement diversion and we are meeting this reduction by a combination of reductions of PCWA and USBR CVP supply. See table below:

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March 11, 2016
File No.: UWMP

Mr. Rob Roscoe
General Manager
Sacramento Suburban Water District
3701 Marconi Ave #100
Sacramento, CA 95821

Dear Mr. Roscoe:

As you are well aware, 2015 UWMP updates are being prepared by both of our agencies for submittal to DWR by July 1, 2016. As a PCWA wholesale raw water customer, we want to officially notify you of our UWMP update efforts, pursuant to California Water Code §10621(b). But more importantly, we want to provide for your review our current representation of your future demands on our water system. We would expect that our representation would match values you will use to characterize our supply in your UWMP.

The values in the table below represent conditions derived based upon the following paragraphs. If you do not agree with this representation or with our explanation, please contact us immediately and we can collaborate on refined characterizations.

Basis[1]: PCWA's current contract with Sacramento Suburban Water District (SSWD) includes an annual entitlement of 29,000 acre-feet (ac-ft) of water from the Middle Fork Project (MFP). SSWD's available surface water supply from the MFP is subject to terms in its PCWA contract, combined with Water Forum Agreement restrictions that limit the amount of water that SSWD is able to divert from the American River.

According to SSWD's Water Forum Purveyor Specific Agreement, SSWD's American River diversion restrictions are dependent upon the projected March through November Unimpaired Inflow into Folsom Reservoir (UIFR). SSWD can divert 29,000 ac-ft/year of MFP water from Folsom Reservoir in wet years (when projected March through November UIFR is greater than 1,600,000 ac-ft). During drier years when the UIFR is less than 1,600,000 ac-ft, SSWD does not receive MFP water from PCWA.

[1] The following language will likely be included as drafted within our 2015 UWMP to provide needed explanatory text.

MFP water will be delivered pursuant to SSWD's contact with PCWA and Water Forum Agreement commitments, as described above. PCWA intends to meet all obligations of its contract with SSWD as future conditions and contract terms evolve. Based on SSWD's 2010 UWMP, PCWA's interpretation of SSWD's build-out demand for MFP water in wet years is 29,000 ac-ft, reducing to 0 ac-ft in drier and driest years.

For planning purposes, PCWA is assuming the full build-out demand will occur by 2020, and continue to exist throughout PCWA's UWMP planning horizon. Please let us know if this assumption is incorrect.

We hope that by providing this information early in our UMWP development process we can quickly obtain your review and concurrence to facilitate our continued analytical work. The values provided above represent our planned characterization we have used to assess the reliability of our deliveries as part of our UWMP process and for our Middle Fork water right permit EIR effort.

In addition to the above coordination actions, we also want to notify you that we will hold a public hearing to adopt our 2015 UWMP and will provide the specific information regarding date, time, and location (anticipated to be held in June) at a later time.

If you have any questions or concerns regarding our current representation of your demands, or ideas for additional collaboration steps, please contact me at (530) 823-4886. We appreciate your on-going efforts to help us both incorporate the most representative information in our respective UWMPs.

Sincerely,

Anthony L. Firenzi, PE
Deputy Director of Technical Services

ALF:zh

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March 29, 2016
File No.: UWMP

Audie Foster
Director of State Operations Northern District
4701 Beloit Drive
Sacramento, CA 95838

Dear Mr. Foster:

As you are well aware, 2015 UWMP updates are being prepared by both of our agencies for submittal to DWR by July 1, 2016. As a PCWA wholesale treated water customer, we want to officially notify you of our UWMP update efforts, pursuant to California Water Code §10621(b). But more importantly, we want to provide for your review our current representation of your future demands on our water system. We would expect that our representation would match values you will use to characterize our supply in your UWMP.

We have created two planning subareas for the California-American Water Company franchise area in Placer County: (1) "Dry Creek East" to cover existing demand areas and new developments east of the Placer Vineyards project and (2) "Dry Creek West" to cover the entirety of the Placer Vineyard project. The demands of these two planning subareas are described as follows.

Dry Creek East

This area is currently served by three metering points at Crowder Lane, PFE Road, and the entrance to the American Vineyard Village development. Existing demands based on 2013 records are 1,093 acre-feet annually (AFA) and approximately two million gallons on the maximum single day of the year.

In this subarea there are several proposed developments where demands were not existent in the stated 2013 amount, which include Riolo Vineyards, Whisper Creek, Morgan Place, Hidden Crossings, and American Vineyard Village. The estimated demands for these developments are as follows:

- Riolo Vineyards – 1,736 AFA
- Whisper Creek – 66 AFA

- Morgan Place – 55 AFA
- Hidden Crossings – 55 AFA
- American Vineyard Village – 90 AFA
- Total new demand – 2,002 AFA

The total build-out demand for the Dry Creek East subarea is then 3,095 AFA. This estimate is based on pre-existing demand factors. If we assume a reduction of existing demand by 10 percent and new demand by 30 percent, this estimate becomes 2,385 AFA, the value being assumed in our UWMP for this subarea.

Dry Creek West

This is a very large masterplan development covering the western majority of your franchise area. A study by West Yost Associates in 2006 estimated the build-out demand of this project to be 11,500 AFA. Based on modern codes and water use trends, we have tempered this estimate down to 7,212 AFA.

We hope that by providing this information early in our UMWP development process we can quickly obtain your review and concurrence to facilitate our continued analytical work. The values provided above represent our planned characterization we have used to assess the reliability of our deliveries as part of our UWMP process and for our Middle Fork water right permit EIR effort.

In addition to the above coordination actions, we also want to notify you that we will hold a public hearing to adopt our 2015 UWMP and will provide the specific information regarding date, time, and location (anticipated to be held in June) at a later time.

If you have any questions or concerns regarding our current representation of your demands, or ideas for additional collaboration steps, please contact me at (530) 823-4886. We appreciate your on-going efforts to help us both incorporate the most representative information in our respective UWMPs.

Sincerely,

Anthony L. Firenzi, PE
Deputy Director of Technical Services

ALF:zh

Tony Firenzi

From: Tony Firenzi
Sent: Tuesday, April 26, 2016 4:58 PM
To: 'audie.foster@amwater.com' (audie.foster@amwater.com)
Cc: 'Greg Young' (gyoung@tullyandyoung.com); Brent Smith; Brian Rickards; Brian Martin (Home) (bcmartin1@sbcglobal.net)
Subject: Revision to Placer Vineyard Demand Estimate
Attachments: CAW 60-day notice letter - signed.pdf

Audie,

We had sent you the attached letter with demand estimates for your current service area in Dry Creek East and the Placer Vineyards project (Dry Creek West). Through further work and refinement of our demand estimates, PCWA has opted to utilize the demand estimate from the Placer Vineyards Water Distribution Master Plan from March 2006 as a source for our UWMP. However, we have taken the value from this master plan and reduced it by 30% to account for more modern water use efficiency trends. The result of this is a value of 8,440 acre-feet per year estimated at the Cal-Am point of delivery from PCWA for this project. This is an increase from the value of 7,212 acre-feet stated in the attached letter.

Please let us know if you have any comments or revisions to these values. Also, we are anticipating an absorption curve of the Placer Vineyards demand at the end of April as we discussed. Please let us know if you need anything further from us.

Regards,

Tony Firenzi, PE | Deputy Director of Technical Services
Placer County Water Agency | www.pcwa.net | P.O. Box 6570 | Auburn, CA 95604-6570
Ph (530) 823-4886 | Fx (530) 823-4884 | tfirenzi@pcwa.net

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March 17, 2016
File No.: UWMP

Mr. Matthew Brower, City Manager
City of Lincoln
600 Sixth Street
Lincoln, CA 95648

Dear Mr. Brower:

As you are well aware, 2015 Urban Water Management Plan (UWMP) updates are being prepared by both of our agencies for submittal to DWR by July 1, 2016. As a PCWA wholesale treated water customer, we want to officially notify you of our UWMP update efforts, pursuant to California Water Code §10621(b).

But more importantly, we want to coordinate with you regarding representation of your future demands for our water supplies. The City's input and concurrence with our characterization of your future water demands is important for our water supply planning.

Typically, we would suggest a meeting or other communications with you or your staff to discuss these matters. However, we are aware that we both have hired Tully & Young to prepare our respective UWMPs. Given this commonality and our trusted working relationship with Tully & Young and the City, we are confident that the coordination of the City's demands as well as the reliability of our supplies (for use in the City's UWMP) will efficiently occur as part of Tully & Young's efforts on both our behalf.

Please let me know if you concur, or if there is a specific contact at the City I should contact for further discussions.

In addition to the above coordination, we also want to notify you that we will hold a public hearing to adopt our 2015 UWMP and will provide the specific information regarding date (likely at our early June Board meeting), time, and location at a later time.

If you have any questions or concerns regarding this letter, please contact me at (530) 823-4886. We appreciate your on-going efforts to coordinate information for our respective UWMPs.

Sincerely,

Anthony L. Firenzi, PE
Deputy Director of Technical Services

ALF:zh

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May 19, 2016

Audie Foster
California American Water Co.
4701 Beloit Drive
Sacramento, CA 95838

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear Audie Foster,

The Placer County Water Agency (PCWA) has updated its Urban Water Management Plan (UWMP) for 2015 as required by the California Water Code (CWC), which requires an update at least every five years. You were notified in March of this year of the Agency's intent to update its UWMP; this letter is providing notice to interested counties, cities, water suppliers, and other organizations that the draft update is ready for public review and a hearing has been scheduled.

Urban Water Management Plans are intended to ensure prudent levels of water supply planning in the land use entitlement process and incorporate water use efficiency and evaluation of dry year conditions into this planning. The plan content includes a water supply summary, a forecast of future demands, a supply versus demand strategy, including dry year scenarios, elements addressing water use efficiency, and a Water Shortage Contingency Plan. This UWMP update demonstrates progress in meeting the Agency's 2020 water conservation target, in which we are well on track.

A copy of the plan will be placed on the Agency's website at www.pcwa.net on Tuesday May 24, 2016 and the hearing will be held on Thursday June 2, 2016 at 2 p.m. at the Agency's Business Center located at 144 Ferguson Road, Auburn, CA. Written comments may be submitted prior to the hearing, addressed to me, and mailed to Placer County Water Agency, PO Box 6570, Auburn, CA, 95604 or emailed to engineering@pcwa.net.

The Agency encourages public input in this plan update. If you have any questions or comments, please do not hesitate to contact me at (530) 823-4886.

Sincerely,

Anthony L. Firenzi, PE
Deputy Director of Technical Services

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May 19, 2016

Rob Roscoe
Sacramento Suburban Water District
3701 Marconi Ave, #100
Sacramento, CA 95821

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear Rob Roscoe,

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The Agency encourages public input in this plan update. If you have any questions or comments, please do not hesitate to contact me at (530) 823-4886.

Sincerely,

Anthony L. Firenzi, PE
Deputy Director of Technical Services

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May 19, 2016

Keith Durkin
San Juan Water District
9935 Auburn Folsom Road
Granite Bay, CA 95746

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear Keith Durkin,

The Placer County Water Agency (PCWA) has updated its Urban Water Management Plan (UWMP) for 2015 as required by the California Water Code (CWC), which requires an update at least every five years. You were notified in March of this year of the Agency's intent to update its UWMP; this letter is providing notice to interested counties, cities, water suppliers, and other organizations that the draft update is ready for public review and a hearing has been scheduled.

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The Agency encourages public input in this plan update. If you have any questions or comments, please do not hesitate to contact me at (530) 823-4886.

Sincerely,

Anthony L. Firenzi, PE
Deputy Director of Technical Services

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May 19, 2016

Jim Mulligan
City of Roseville
2005 Hilltop Circle
Roseville, CA 95747

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear Jim Mulligan,

The Placer County Water Agency (PCWA) has updated its Urban Water Management Plan (UWMP) for 2015 as required by the California Water Code (CWC), which requires an update at least every five years. You were notified in March of this year of the Agency's intent to update its UWMP; this letter is providing notice to interested counties, cities, water suppliers, and other organizations that the draft update is ready for public review and a hearing has been scheduled.

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The Agency encourages public input in this plan update. If you have any questions or comments, please do not hesitate to contact me at (530) 823-4886.

Sincerely,

Anthony L. Firenzi, PE
Deputy Director of Technical Services

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May 19, 2016

Matthew Brower
City of Lincoln
600 Sixth Street
Lincoln, CA 95648

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear Matthew Brower,

The Placer County Water Agency (PCWA) has updated its Urban Water Management Plan (UWMP) for 2015 as required by the California Water Code (CWC), which requires an update at least every five years. You were notified in March of this year of the Agency's intent to update its UWMP; this letter is providing notice to interested counties, cities, water suppliers, and other organizations that the draft update is ready for public review and a hearing has been scheduled.

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The Agency encourages public input in this plan update. If you have any questions or comments, please do not hesitate to contact me at (530) 823-4886.

Sincerely,

Anthony L. Firenzi, PE
Deputy Director of Technical Services

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May 19, 2016

Nav Gill
Sacramento County CEO
700 H Street, Room 7650
Sacramento, CA 95814

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear Nav Gill,

The Placer County Water Agency (PCWA) has updated its Urban Water Management Plan (UWMP) for 2015 as required by the California Water Code (CWC), which requires an update at least every five years. You were notified in March of this year of the Agency's intent to update its UWMP; this letter is providing notice to interested counties, cities, water suppliers, and other organizations that the draft update is ready for public review and a hearing has been scheduled.

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The Agency encourages public input in this plan update. If you have any questions or comments, please do not hesitate to contact me at (530) 823-4886.

Sincerely,

Anthony L. Firenzi, PE
Deputy Director of Technical Services

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May 19, 2016

David Boesch
Placer County CEO
175 Fulweiler Avenue
Auburn, CA 95603

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear David Boesch,

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May 19, 2016

President
Willow-Glen Water Co.
PO Box 659
Loomis, CA 95650

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear President,

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May 19, 2016

Remleh Scherzinger
Nevada Irrigation District
1036 West Main Street
Grass Valley, CA 95945

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear Remleh Scherzinger,

The Placer County Water Agency (PCWA) has updated its Urban Water Management Plan (UWMP) for 2015 as required by the California Water Code (CWC), which requires an update at least every five years. You were notified in March of this year of the Agency's intent to update its UWMP; this letter is providing notice to interested counties, cities, water suppliers, and other organizations that the draft update is ready for public review and a hearing has been scheduled.

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May 19, 2016

Mark Miller
City of Colfax
PO Box 702
Colfax, CA 95713

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear Mark Miller,

The Placer County Water Agency (PCWA) has updated its Urban Water Management Plan (UWMP) for 2015 as required by the California Water Code (CWC), which requires an update at least every five years. You were notified in March of this year of the Agency's intent to update its UWMP; this letter is providing notice to interested counties, cities, water suppliers, and other organizations that the draft update is ready for public review and a hearing has been scheduled.

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May 19, 2016

Tim Rundel
City of Auburn
1225 Lincoln Way
Auburn, CA 95603

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear Tim Rundel,

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May 19, 2016

Rick Angelocci
Town of Loomis
3665 Taylor Road
Loomis, CA 95650

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear Rick Angelocci,

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May 19, 2016

Rick Horst
City of Rocklin
3970 Rocklin Road
Rocklin, CA 95677

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear Rick Horst,

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May 19, 2016

Rick LaFrance
Lakeview Hills Community Association
1739 Creekside Drive
Folsom, CA 95630

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear Rick LaFrance,

The Placer County Water Agency (PCWA) has updated its Urban Water Management Plan (UWMP) for 2015 as required by the California Water Code (CWC), which requires an update at least every five years. You were notified in March of this year of the Agency's intent to update its UWMP; this letter is providing notice to interested counties, cities, water suppliers, and other organizations that the draft update is ready for public review and a hearing has been scheduled.

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May 19, 2016

Paul Schmidt
Hidden Valley Community Association
7072 Pine Gate Way
Granite Bay, CA 95746

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear Paul Schmidt,

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May 19, 2016

David Muscarella
Golden Hills Mutual Water Co.
4061 Miners Drive
Loomis, CA 95650

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear David Muscarella,

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May 19, 2016

Alan Johnston
Folsom Lake Mutual Water Company
6514 Mimus Lane
Granite Bay, CA 95746

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear Alan Johnston,

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May 19, 2016

Gerry LaBudde
Christian Valley Park CSD
PO Box 3138
Auburn, CA 95604

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear Gerry LaBudde,

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May 19, 2016

Jason Tiffany
Midway Heights County Water District
PO Box 596
Meadow Vista, CA 95722

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear Jason Tiffany,

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The Agency encourages public input in this plan update. If you have any questions or comments, please do not hesitate to contact me at (530) 823-4886.

Sincerely,

Anthony L. Firenzi, PE
Deputy Director of Technical Services

Z:\Contracts & Projects\Urban Water Management Plan\Corr\Notice of Hearing

PCWA
water • energy • stewardship

PLACER COUNTY WATER AGENCY
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Mike Lee, District 3
Robert Dugan, District 4
Joshua Alpine, District 5

Einar Maisch, General Manager

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144 Ferguson Road
MAIL
P.O. Box 6570
Auburn, CA 95604
PHONE
(530) 823-4850
(800) 464-0030
WWW.PCWA.NET

May 19, 2016

Gerry LaBudde
Weimar Water Co.
PO Box 598
Weimar, CA 95736

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear Gerry LaBudde,

The Placer County Water Agency (PCWA) has updated its Urban Water Management Plan (UWMP) for 2015 as required by the California Water Code (CWC), which requires an update at least every five years. You were notified in March of this year of the Agency's intent to update its UWMP; this letter is providing notice to interested counties, cities, water suppliers, and other organizations that the draft update is ready for public review and a hearing has been scheduled.

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May 19, 2016

Norman Dean
Meadow Vista County Water District
PO Box 278
Meadow Vista, CA 95722

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear Norman Dean,

The Placer County Water Agency (PCWA) has updated its Urban Water Management Plan (UWMP) for 2015 as required by the California Water Code (CWC), which requires an update at least every five years. You were notified in March of this year of the Agency's intent to update its UWMP; this letter is providing notice to interested counties, cities, water suppliers, and other organizations that the draft update is ready for public review and a hearing has been scheduled.

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WWW.PCWA.NET

May 19, 2016

Max Bailey
Heather Glen CSD
PO Box 715
Applegate, CA 95703

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear Max Bailey,

The Placer County Water Agency (PCWA) has updated its Urban Water Management Plan (UWMP) for 2015 as required by the California Water Code (CWC), which requires an update at least every five years. You were notified in March of this year of the Agency's intent to update its UWMP; this letter is providing notice to interested counties, cities, water suppliers, and other organizations that the draft update is ready for public review and a hearing has been scheduled.

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WWW.PCWA.NET

May 19, 2016

David Mintline
Dutch Flat Mutual Water Company
PO Box 50
Dutch Flat, CA 95714

SUBJECT: Notice of availability and hearing for PCWA's draft 2015 Urban Water Management Plan for public review

Dear David Mintline,

The Placer County Water Agency (PCWA) has updated its Urban Water Management Plan (UWMP) for 2015 as required by the California Water Code (CWC), which requires an update at least every five years. You were notified in March of this year of the Agency's intent to update its UWMP; this letter is providing notice to interested counties, cities, water suppliers, and other organizations that the draft update is ready for public review and a hearing has been scheduled.

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Deputy Director of Technical Services

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C-1: CWUCC Report

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CUWCC BMP Retail Coverage Report 2014

Foundational Best Managemant Practices for Urban Water Efficiency

BMP 1.1 Operation Practices

ON TRACK

6311 Placer County Water Agency - Retail

1. Conservation Coordinator provided with necessary resources to implement BMPs?	Name:	Linda Yager
	Title:	Deputy Director of Customer Services
	Email:	lyager@pcwa.net

2. Water Waste Prevention Documents

WW Document Name	WWP File Name	WW Prevention URL	WW Prevention Ordinance Terms Description
Option A Describe the ordinances or terms of service adopted by your agency to meet the water waste prevention requirements of this BMP.		http://www.pcwa.net/files/docs/drought/PCWA_2015_WSCP.pdf	Water waste prevention and prohibition are addressed in PCWA's Water Shortage Contingency Plan (URL above) on Pages 9 and 10; pursuant to PCWA's Rules and Regulations, Section 41306, with Water Waste Charges pursuant to Section 41221.
Option B Describe any water waste prevention ordinances or requirements adopted by your local jurisdiction or regulatory agencies within your service area.			
Option C Describe any documentation of support for legislation or regulations that prohibit water waste.			
Option D Describe your agency efforts to cooperate with other entities in the adoption or enforcement of local requirements consistent with this BMP.			
Option E Describe your agency support positions with respect to adoption of legislation or regulations that are consistent with this BMP.			
Option F Describe your agency efforts to support local ordinances that establish permits requirements for water efficient design in new development.			

At Least As effective As No

CUWCC BMP Retail Coverage Report 2014

Foundational Best Managemant Practices for Urban Water Efficiency

BMP 1.1 Operation Practices **ON TRACK**

Exemption No

Comments:

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.2 Water Loss Control

ON TRACK

6311 Placer County Water Agency - Retail

Completed Standard Water Audit Using AWWA Software?	Yes
AWWA File provided to CUWCC?	Yes
2014 awwa 5_0 audit worksheet.xls	
AWWA Water Audit Validity Score?	70
Complete Training in AWWA Audit Method	Yes
Complete Training in Component Analysis Process?	Yes
Component Analysis?	No
Repaired all leaks and breaks to the extent cost effective?	Yes
Locate and Repar unreported leaks to the extent cost effective?	Yes
Maintain a record keeping system for the repair of reported leaks, including time of report, leak location, type of leaking pipe segment or fitting, and leak running time from report to repair.	Yes

Provided 7 Types of Water Loss Control Info

Leaks Repairs	Value Real Losses	Value Apparent Losses	Miles Surveyed	Press Reduction	Cost Of Interventions	Water Saved (AF)
252	349608	662685		True	726807	3746

At Least As effective As Yes

Please see attached letter.

Exemption No

Comments:

Placer County Water Agency is executing a professional services agreement with Water Systems Optimization to perform the agency's component analysis, which is scheduled to be completed by 11/07/16.

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.3 Metering With Commodity

ON TRACK

6311 Placer County Water Agency - Retail

Numbered Unmetered Accounts	No
Metered Accounts billed by volume of use	Yes
Number of CII Accounts with Mixed Use Meters	2090
Conducted a feasibility study to assess merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?	Yes
Feasibility Study provided to CUWCC?	Yes

Date: 3/31/2008

Uploaded file name:

Completed a written plan, policy or program to test, repair and replace meters	Yes

At Least As effective As No

Known database issue on # estimated bills per year and # of meter readings per year (above), please see attached file with all of the data for columns shown above.

Exemption No

Comments:

See 'At Least As Effective As' section for fix to known database issue.

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.4 Retail Conservation Pricing

ON TRACK

6311 Placer County Water Agency - Retail

Implementation (Water Rate Structure)

Customer Class	Water Rate Type	Conserving Rate?	(V) Total Revenue Comodity Charges	(M) Total Revenue Fixed Carges
Single-Family	Increasing Block	Yes	9235225.12	12182011.1
Multi-Family	Increasing Block	Yes	1088786.69	1958563.59
Commercial	Increasing Block	Yes	1657413.56	1568624.17
Industrial	Increasing Block	Yes	218622.89	14241.85
Institutional	Increasing Block	Yes	581144.78	376217.37
Dedicated Irrigation	Increasing Block	Yes	1131284.6	536656.22
Agricultural	Increasing Block	Yes	33932.81	49440.36
Fire Lines	Uniform	Yes	13046.85	461119.85
Other	Increasing Block	Yes	268691.75	468221.82
			14228149.05	**17615096.33**

Calculate: V / (V + M) **45 %**

Implementation Option: Use Canadian Water Wastewater Association Rate Design Model

[V] Use 3 years average instead of most recent year

Canadian Water and Wastewater Association

Customer Class	Water Rate Type	Conserving Rate?	(V') Total Revenue Comodity Charges	(M') Total Revenue Fixed Carges
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CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.4 Retail Conservation Pricing

Calculate: V / (V + M) **45 %** **ON TRACK**

Upload file:

Agency Provide Sewer Service: No

At Least As effective As	No	
Exemption	No	

Comments:

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.1 Public Outreach

ON TRACK

6311 Placer County Water Agency - Retail **Retail**

Does your agency perform Public Outreach programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

Regional Water Authority	Amy Talbot
atalbot@rwah2o.org	www.BeWaterSmart.info

The name of agency, contact name and email address if not CUWCC Group 1 members

Did at least one contact take place during each quater of the reporting year? Yes

Public Outreach Program List		Number
Newsletter articles on conservation		27
Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets		309
General water conservation information		41
Landscape water conservation media campaigns		6
Website		9
Email Messages		3
	Total	**395**

Did at least one contact take place during each quater of the reporting year? Yes

Number Media Contacts		Number
Articles or stories resulting from outreach		114
News releases		13
Television contacts		40
Radio contacts		24
Newspaper contacts		91
Written editorials		1
	Total	**283**

Did at least one website update take place during each quater of the reporting year? Yes

Public Information Program Annual Budget

Annual Budget Category	Annual Budget Amount
RWA Public Outreach Program	113000
PCWA Public Outreach Program	91975
Total Amount:	**204975**

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.1 Public Outreach

ON TRACK

Public Outreah Additional Programs

Customer notification for reported or observed water waste and agency assistance offered to customers to help correct water waste.

RWA Landscape Water Conservation Media Campaigns partnering with the Water Forum to create 6 videos distributed as PSA's.

IVR calls throughout the year target specific customers encouraging water conservation.

"Water is Served Upon Request" restaurant outreach, including table toppers and window clings for restaurants to display.

Water Efficiency outreach to hotels, provided conservation tent cards to be displayed in hotel rooms.

RWA "Be Water Smart" eblasts (3).

PCWA Water Efficiency booth at local events (Lincoln Highway Dedication Event, Spring & Fall Home and Garden Shows, Loomis Eggplant Festival).

"Blue Thumb Events Team" at local events (Sacramento Home & Landscape Expo, Walk on the Wild Side, Water Spots Award Ceremony at the River Cats, Harvest Day, three Science in the River City (SIRC) events).

Fire and Water publication that goes out with the Auburn Journal.

RWA website Links to Save Our Water, WaterSense, Irrigation Association, CUWCC, EcoLandscape, Green Gardener Training Program, and DWR.

RWA "Be Water Smart" dedicated phone line 1-800-WTR-TIPS.

Description of all other Public Outreach programs

RWA partnership/sponsorship with the Sacramento River Cats promoting outdoor water efficiency.

Comments:

The above mentioned Placer County Water Agency program efforts are in collaboration with the Regional Water Authority, Group 3 member of the CUWCC.

At Least As effective As	No

Exemption	No	0

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.2 School Education Programs

ON TRACK

6311 Placer County Water Agency - Retail **Retail**

Does your agency implement School Education programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

Regional Water Authority Amy Talbot
atalbot@rwah2o.org www.BewWaterSmart.info

Materials meet state education framework requirements? Yes

Materials for students are written and developed by an award winning environmental educator and updated by water efficiency experts. Teacher guides provide regional focus and lessons based on the California Content Standards.

Materials distributed to K-6? Yes

"Be Water Smart News, Water the Never Ending Cycle" student newspaper distributed by the Sacramento Bee (K-12), "California Waterways Map" provided by DWR, Mr. Leaky "Water Conservation and You" booklet (K-4).

Materials distributed to 7-12 students? Yes (Info Only)

The colorful student newspaper "Living Rivers" distributed by the Sacramento Bee (K-12), "Be Water Smart News, Water the Never Ending Cycle" student newspaper distributed by the Sacramento Bee (9-12).

Annual budget for school education program: 31000.00

Description of all other water supplier education programs

Project WET workshops held for educators which promote knowledge of water resources (K-12). The Water Spots Video Contest was created to encourage young film makers to create short public service announcements about outdoor water conservation (9-12).

Comments:

The above mentioned Placer County Water Agency program efforts are in collaboration with the Regional Water Authority, Group 3 member of the CUWCC.

At Least As effective As No

Exemption No 0

CUWCC BMP Coverage Report 2014

6311 Placer County Water Agency - Retail

Baseline GPCD: 316.86

GPCD in 2014 230.36

GPCD Target for 2018: 259.80

Biennial GPCD Compliance Table **ON TRACK**

		Target		Highest Acceptable Bound	
Year	Report	% Base	GPCD	% Base	GPCD
2010	1	96.4%	305.50	100%	
2012	2	92.8%	294.00	96.4%	
2014	3	89.2%	282.60	92.8%	
2016	4	85.6%	271.20	89.2%	
2018	5	82.0%	259.80	82.0%	

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C-2: Water Shortage Contingency Plan

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Placer County Water Agency (PCWA) Water Shortage Contingency Plan

Western Water System

Through its Western Water System PCWA currently provides approximately 125,000 acre-feet of water annually, either directly or indirectly, to over 60,000 individual homes, businesses and irrigation customers, serving a total population of over 150,000.

The area served by the Western Water System extends from the community of Alta on the east, down the interstate 80 corridor, to the Sutter and Sacramento county lines on the west and south. The service area includes treated water deliveries from PCWA water plants to the communities of Alta, Monte Vista, Applegate, Colfax, Auburn, Loomis, Rocklin and Lincoln and much of the surrounding unincorporated areas. In addition to treated water service, PCWA provides irrigation water through its extensive canal system to individual customers. The Agency also delivers untreated wholesale water to the City of Roseville and to San Juan Water District, the amounts and populations of which are not included in the totals summarized above.

The Western Water System has two primary sources of surface water that are currently in use: (1) PG&E contract supplies from the Yuba and Bear Rivers delivered through PG&E's Drum-Spaulding hydroelectric system into a network of distribution canals at various locations that are owned and operated by PCWA and (2) PCWA's Middle Fork Project water rights that can be delivered through a pump station on the American River near Auburn into the Auburn Ravine Tunnel. The Agency has a small water right on Canyon Creek and a contract with the US Bureau of Reclamation for Central Valley Project water. The Agency also has access to groundwater in the farthest western portions of its service area that can be used conjunctively with surface water and in times of water shortages, along with a number of emergency intertie connections with other purveyors.

In 2013 the total delivery from the PG&E Yuba-Bear River source was 109,400 acre-feet, an additional 10,900 acre-feet was delivered from the American River, 3,200 acre-feet was delivered from Canyon Creek, and 2,200 acre-feet was transferred from Nevada Irrigation District.

PCWA's canal system is the backbone of its Western Water System, taking gravity water delivery from PG&E at various locations, and delivering water to PCWA treatment plants, the treatment plants of several other public and private water purveyors and delivering irrigation water to approximately 4,000 customers along the canal system and through Auburn Ravine.

The American River supply has only recently been developed as a reliable source; the infrastructure was constructed to facilitate continued planned urban developments as the Agency has reached its maximum allowed delivery rate under its PG&E water supply contract. The design delivery rate from the American River is about 100 cfs, which is intended to provide about 35,500 acre-feet annually into the Western Water System.

In 2013, approximately 82 thousand acre-feet (TAF) (65%) was used for irrigation purposes serving approximately 4,000 customers and 44 TAF (35%) was delivered as treated water for municipal and industrial purposes serving a population in excess of 150,000.

Dry Year Supply Reliability

A review of historic PG&E delivery records, including the 1977 drought, and modeling studies done on the Middle Fork Project indicate that the worst case dry year scenario, at current levels of development, should assume only a 50% supply from PG&E, but a full supply from the Middle Fork Project on the American River. This assumption is supported by water supply conditions experienced during the current drought, which began in 2012 and has continued into 2015. During this multiple-year drought the Agency experienced its first cutback of approximately 30% from PG&E in 2014. During this same period, the Middle Fork Project supply was used to meet demands that could be provided for through the capacity of the American River Pump Station, which offset some of the PG&E cutback.

Due to limitations in infrastructure and the location in the Western Water System where Middle Fork Project water is delivered, this supply cannot augment deliveries to all customers. Thus, the shortage in supply from PG&E can be only partially mitigated by the Middle Fork Project, and the Agency must optimize its use of both water supplies in a manner that distributes a water shortage in as equitable a manner as possible.

In most cases of reduced allocation from PG&E, the combination of these supplies can be distributed in a manner that all customers in the water system can be expected to conserve the same percentage relative to normal year deliveries. In extreme dry years, approaching 50% cutback from PG&E, customers on the canal system may need to conserve a greater percentage due to limitations in infrastructure delivering Middle Fork Project water into the canal system.

Water Shortage Actions - General

One of the keys to understanding how to respond to the loss of such a significant amount of water is to first understand what is possible in terms of the use of the Middle Fork Project supply.

Middle Fork Project water can be pumped from the American River into the Auburn Ravine Tunnel and from the tunnel up to the ground surface near Ophir, where it can be delivered to PCWA's Dutch Ravine Canal or the Foothill and Sunset water treatment plants. Middle Fork Project water would be able to supply the treatment plants with enough water to meet all lower Zone 1 treated water demands of about 34 TAF, which represents approximately 77% of treated water use in the Western Water System. Middle Fork Project water has a more limited ability to supply the canal customers of the Western Water System. The recently completed Ophir Road pipeline, which connects this supply to the Dutch Ravine Canal, can deliver 20 TAF of water to this portion of the canal system. This represents approximately 24% of canal water use in the Western Water System.

Based upon these physical delivery characteristics and the large difference between treated and irrigation demands dependent upon the reduced PG&E supply, more severe cuts in delivery may be necessary in the canal systems than in the treated water systems during periods of extreme drought, such as a 50% cutback in PG&E supplies. Additionally, state law and practical necessity dictate that public health and safety be prioritized over irrigation and agriculture in very serious water shortage conditions. Public health and safety needs rely on the treated

water systems and include fire protection, sanitation, hospitals, schools, and other critical needs.

Actions taken to conserve water in the canal systems are different than those taken in the treated water systems. Specifics of these actions are described for the canal systems and treated water systems as follows.

Water Shortage Actions – Irrigation Canal Systems

The actions taken to conserve water in the canal systems are more operational in nature on the part of PCWA, and may include changing the sizes of the orifices through which water is delivered to customers and/or instituting "rolling" or alternating canal outages. Changes in customer water use practices will be necessary to work within the water delivered under shortage conditions. Canal operations staff can work with customers in groups along a specific canal or, in select cases, as individuals to meet the necessary level of conservation.

In a water shortage emergency, the Agency Board of Directors will have declared a necessary level of conservation for the canal system. In the same action as declaring a level of conservation, more specific details on how to implement these generalized operational procedures will also be adopted, giving canal operations staff and customers guidelines on how to work cooperatively to meet conservation needs. In the 2014 water year, a 20% level of conservation was sought, operations staff worked to minimize losses in the delivery system, orifices were resized to reduce their peak delivery rate by 10%, rolling outages were used in some cases, but minimized, and the achieved level of conservation was 35%.

A sample resolution that includes more specifics on operational procedures for the canal systems is attached to this Water Shortage Contingency Plan. This resolution is written for a 20% level of conservation, but could be modified for a higher level of conservation if needed.

Water Shortage Actions – Treated Water Systems

Regardless of water supply availability or service conditions, the Board of Directors reserves the right to set water conservation goals and modify stage declarations as necessary, based on the impact to the environment or statewide water shortage conditions to align with regional or state water conservation policies, agreements, declarations or legal requirements. The Board of Director's shall determine, based on present water conditions and any lawful directive of the State Water Resources Control Board, the treated water shortage stage applicable to the Agency for the coming year. All wasteful practices or unreasonable uses of water, whether willful or negligent, are always prohibited.

PCWA's Water Shortage Contingency Plan consists of a normal water supply condition and four stages of varying conservation actions and use restrictions intended to meet target demands. Implementation of the stages is cumulative; meaning that implementation of a higher stage shall also include implementation of previous stages. These actions shall be used as a starting point to meet targets and shall be monitored, as described later in this plan, for performance. For each stage, the water reduction for customers shall be as follows:

Normal Water Supply – ("Use Water Efficiently") Shall be in effect at all times unless the Board determines that a more restrictive conservation stage is appropriate. Base allocation of water may be used to determine allowable water use for each customer in this stage and compliance with the following stages.

Stage 1- ("Water Alert") – Shall achieve a reduction of up to 20% relative to the base allocation of water.

Stage 2- ("Water Warning") – Shall achieve a reduction of up to 30% relative to the base allocation of water.

Stage 3- ("Water Crisis") – Shall achieve a reduction of up to 40% relative to the base allocation of water.

Stage 4- ("Water Emergency") – Shall achieve a reduction of up to 50% relative to the base year of water.

Normal Water Conditions, "Use Water Efficiently"

Normal conditions shall be in effect at all times unless the Board determines that a more restrictive stage is appropriate. To promote the efficient use of water the Agency has adopted inclining block consumptive water rates for residential and commercial treated water customers. The following best practices are recommended during Normal Water Conditions:

1. Leaks or faulty sprinklers shall be repaired within 72 hours of occurrence.
2. Decorative water features must recirculate and shall be leak proof.
3. Landscapes shall only be watered between the hours of 9:00 p.m. and 9:00 a.m. to reduce evaporation and minimize landscape runoff.
4. Water shall be confined to the customer's property and shall not be allowed to run off to adjoining property, roadside, non-irrigated areas, private and public walkways, roadways, parking lots, ditch or gutter or any other impervious service. Care shall be taken not to water past the point of saturation.
5. No landscape watering shall occur during rain/snow or within 48 hours after a ¼" or more of rainfall/snowfall.
6. Automatic shut-off devices shall be installed on any hose or filling apparatus in use.
7. Commercial, industrial, institutional equipment must be properly maintained and in proper working order.
8. All new landscaping shall, at a minimum, adhere to the specifications outlined in the State's Model Water Efficient Landscape Ordinance adopted by the California Department of Water Resources or specifications of any land use jurisdiction in effect.

Stage 1, "Water Alert," up to 20% Conservation - In addition to all the above, the following actions are mandatory:

1. Resale water suppliers to which the Agency provides water are advised to implement conservation measures comparable to those adopted by PCWA, to achieve the same level conservation.
2. Restaurants shall serve water to customers only upon request.
3. Hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered. The hotel or motel shall prominently display notice of this option in each bathroom using clear and easily understood language.
4. Turf watering shall be limited to a maximum of three days per week during the months of July and August, a maximum of two days per week in April, May, June, September, October and November, and shall not be watered during the remaining winter months unless PCWA notifies customers that watering is allowed due to unseasonably and extended dry conditions. Plant containers, trees, shrubs and vegetable gardens may be watered additional days when using drip irrigation or hand watering.
5. Washing down impervious surfaces such as driveways and sidewalks shall be prohibited unless necessary for public health and safety purposes.

Stage 2, "Water Warning," up to 30% Conservation - In addition to all the above, the following actions are mandatory:

1. A construction water use plan shall be submitted that mitigates the use of water for purposes such as dust control.
2. The installation of new landscaping for existing homes shall be limited to low water use trees, shrubs and groundcover. The installation of new turf or hydro seed for existing homes shall be prohibited unless watered using drip or microspray systems. Customers who had installed new turf or hydro seed prior to the prohibition may apply for a waiver to irrigate during an establishment period.
3. Outside irrigation for newly constructed homes and buildings shall be prohibited unless watered using drip or microspray systems.
4. Turf watering shall be limited to a maximum of two days per week April through November and shall not be watered during the remaining winter months unless PCWA notifies customers that watering is allowed due to unseasonably and extended dry conditions. Plant containers, trees, shrubs and vegetable gardens may be watered additional days when using drip irrigation or hand watering.
5. Commercial, Industrial, and Institutional properties, such as campuses, golf courses, and cemeteries shall implement water efficiency measures to achieve a water usage reduction consistent with the objective of this stage.

6. Irrigation of ornamental turf on public street medians with potable water shall be prohibited.

Stage 3, "Water Crisis," up to 40% Conservation - In addition to all the above, the following actions are mandatory:

1. Existing pools shall not be emptied and refilled unless required for public health and safety purposes.
2. No new landscape installations or renovations shall be permitted.
3. Waivers granted previously for turf or hydro seed watering during an establishment period shall be revoked.
4. The use of reclaimed water for dust control, earthwork, or road construction shall be required, as permits allow and as available.
5. Turf watering shall be limited to a maximum of one day per week April through November and shall not be watered during the remaining winter months unless PCWA notifies customers that watering is allowed due to unseasonably and extended dry conditions. Plant containers, trees, shrubs and vegetable gardens may be watered additional days when using drip irrigation or hand watering.
6. Car washing shall only be permitted using a commercial carwash that recirculates water and use high pressure/low volume wash systems.

Stage 4, "Water Emergency," up to 50% and Greater Conservation - In addition to all the above, the following actions are mandatory:

1. Turf shall not be watered. Plant containers, trees, shrubs and vegetable gardens shall be watered only by drip irrigation or hand watering.

Stage Implementation and Monitoring Procedures

The Agency maintains a draft water shortage contingency resolution that is adopted during water shortages. A sample resolution that has been developed for the current drought is attached herein. Legal requirements, including public notices and hearings, shall be followed in adopting any resolution. However, Agency staff may implement operational changes in the canal systems and request voluntary actions by treated water customers on an interim basis to meet public health and safety needs as detailed above until such a resolution can be adopted.

In a water shortage, and particularly that resulting from failure of infrastructure, critical roles shall be established and appointed by the General Manager. These roles may include, but are not limited to Incident Commander, Operations Manager, and Public Information Officer. Other supporting roles that should be considered are engineering, mapping, customer service, information service, and public outreach. Other more detailed instructions may be found in the Agency's Emergency Response Plan.

Under normal water supply conditions, Field Services and Technical Services operations staff record water production figures daily. Totals are reported monthly and incorporated into a water supply report. During a water shortage, monthly production is compared to the target

production to verify that the reduction goal is being met. Appropriate monthly reports are forwarded to the department heads and General Manager's office. Appropriate monthly reports are also included in the Board of Directors meeting materials.

In all stages, if targets are not met, Agency staff may implement further actions as long as they fall within the limits set by the resolution adopted by the Board of Directors in response to the shortage. Actions needed in excess of these limits, or reductions in actions, must be approved by the Board of Directors.

Analysis of Expenditures and Revenue during Shortages

There are two primary objectives during a water shortage, reduce water use and maintain adequate revenues to meet revenue requirements. Portions of the Agency's operating revenue is derived from volumetric based water rates, hence, during a water shortage with reduced water use, the Agency's revenue would decrease. Also, depending on the root cause of a water shortage, additional unbudgeted expenses would most likely be incurred with potentially substantial variance. A drought induced water shortage would result in additional expenses for public outreach, conservation enforcement and various other associated costs. A infrastructure failure induced water shortage would incur similar costs as a drought situation, plus other costs such as construction of alternate source facilities or alternative supply transmission costs, such as pumping which can be very expensive.

For example, if there is water available, the Agency has the ability to access water in the American River through double lift pumping, which based on the current energy prices, if the pumps were operated to achieve maximum flows, could, on the high side, cost an additional $1 million per month and would pump an amount equal to approximately 90% of peak demand in a certain service area. However, these costs can vary significantly depending on demand. In a water shortage caused by an infrastructure failure, pumping costs would most likely be the most significant expense. Other non-capital expenses can vary substantially from $0 to $50,000 or more per month depending on the nature, magnitude, and duration of the water shortage.

The Agency has established reserves to supplement the needed revenue during a water shortage. These reserves would fund anticipated operating costs, as well as unanticipated operating and other costs. This is an alternative to implementing drought pricing. Based on designation/reserve policies, over the years, the Agency has accumulated monies for a variety of unanticipated, unforeseen or planned needs, whether those needs are operating or capital related. Based on Agency policy, the Agency has funded reserve accounts that could be used as needed. The policy identifies events or conditions, which would prompt the use of these funds. The Agency has established an Operating Reserve for unanticipated, unforeseen or planned variations in operating expenses or revenues. As of December 31, 2014, the Operating Reserve portion of the Western Water System Reserves totaled just over $8.5 million.

The Agency's 2015 Operating Budget for the Western Water Division and Eastern Water Division were $40 million and $0.8 million, respectively. At December 31, 2014, the overall funded reserves for these two Divisions were $30.6 million and $282,000, respectively, including the operating reserve amount mentioned previously. In the event of a water shortage that results in a decline in revenue, the Agency's Board of Directors, to meet necessary revenue requirements, could consider the use these reserves. The use of reserves requires Board

approval. Although the Agency has funded reserves as an alternative to drought pricing and, thus, the Agency's water rate schedule does not contain water shortage or drought pricing, that practice could change and if so, the Agency would follow the Proposition 218 notification process and other rate adjustment regulations to implement water shortage or drought rates.

Prohibitions and Penalties

The goal of the Agency is to achieve voluntary compliance from our customers. The Agency will take reasonable measures to assure that customers have information available to promptly and efficiently address water use issues. Where voluntary compliance cannot be achieved through initial contacts and warnings, then appropriate administrative penalties and further action are required.

Violations of mandatory actions shall be addressed as described in the Agency's Rules, Regulations, Rates and Charges Governing the Distribution and Use of Water, updated January 1, 2015, as follows:

Per Sec. 41306 of the Rules and Regulations -DISCONTINUANCE OF SERVICE BY AGENCY. Service may be discontinued by the Agency for any of the following reasons:

(b) The unauthorized taking of water or the taking of water in excess of the amount paid for.

(c) Failure by the customer to maintain their facilities in a suitable condition to prevent waste of water. If the Agency determines that a customer is wasting water, that customer may be subject to a Water Waste Charge or to a reduction in the amount of water that the customer is allowed to purchase or both.

(1) IRRIGATION WATER CUSTOMERS:

If a customer is found to be taking delivery of an amount of water that exceeds the consumptive needs of their property such that there is persistent runoff into local drainage or storm drain systems, such excess water delivery shall be deemed a waste and unreasonable use of the Agency's water resources and the customer shall be subject to Water Waste Charges, as set forth in Section 41221 herein, and a reduction in the amount of water that the customer is allowed to purchase.

Following written notification of a water waste occurrence, the customer may choose to modify their facilities, or work with the Agency to reconfigure their delivery box such that water is delivered only on an "as-needed" basis, or may voluntarily reduce the amount of water purchased. If a customer fails to eliminate persistent water waste within a reasonable amount of time, the Agency may permanently reduce the size of the customer's delivery orifice until such waste is eliminated.

(2) TREATED WATER CUSTOMERS:

The Agency shall notify customers of waste and unreasonable use of water if there is persistent and excessive discharge of water from a customer's property. Such notifications shall result in imposition of a Water Waste Charge as set forth in Section 41221 herein. If water waste continues or if the Agency finds that all or most of the delivered water results in discharge from the customer's property or area of use, the Agency may discontinue service to the property.

The charges are intended to recover staff costs to monitor and enforce Section No. 41306 (c), which requires the customer to maintain his/her facilities in a suitable condition to prevent waste of water. In addition, during extreme water shortages, a call for voluntary conservation may not bring sufficient response by a customer. Therefore, it may be necessary to institute enforceable measures, including but not limited to, installation of flow restrictors, and disconnection of service.

Sec. 41221 WATER WASTE CHARGE. Ref: Section No. 41306 (c)

Charge	***Occurrence***	***Action***
--------	(first)	personal or written notification of the violation
--------	(second)	written warning and notice of correction
$75.00	(third)	---------
$75.00	(fourth)	service disconnection - pull meter / lock canal service