



AGENDA

April 26, 2016

PUBLIC UTILITIES COMMISSION MEETING

7:00 p.m.

City Council Chambers
311 Vernon Street
Roseville, California

- 1. Roll Call**
- 2. Pledge of Allegiance**
- 3. Approval of the March 22, 2016 Minutes**
 - 3.1. March 22, 2016 Minutes
- 4. Oral Communications/Public Comment**
- 5. New Business**
 - 5.1. Environmental Utilities Monthly Update
Report by Water Utility Manager Jim Mulligan summarizing monthly status of Environmental Utilities issues, for information.
 - 5.2. Asset Management Program Overview
Presentation by Principal Engineer Mike Zacharia on the Asset Management Program Overview, for information.
 - 5.3. Environmental Utilities Urban Water Management Plan
Presentation by Assistant Engineer Colleen Boak on the Urban Water Management Plan, for recommendation.
 - 5.4. Roseville Electric Utility Monthly Update
Report by Electric Assistant Utility Director Mike Bloom summarizing monthly status of Electric issues, for information.
 - 5.5. Roseville Electric Utility Legislative Update
Presentation by Electric Regulatory Compliance Administrator Shawn Matchim on the Electric Legislative Update, for information.
- 6. Reports – Commission/Staff**
- 7. Proposed Future Agenda Items**
- 8. Adjournment**



PUBLIC UTILITIES COMMISSION

Title: March 22, 2016 Minutes

Meeting Date: 4/26/2016
Item #: 3.1.

ATTACHMENTS:

Description

March 22, 2016 Draft Minutes

MINUTES
Public Utilities Commission

March 22, 2016
7:00 p.m.

Council Chambers
311 Vernon Street
Roseville, CA 95678

1. Roll Call

PUC Commissioners Present: Gretchen Hildebrand
James McHan
Kerry Schmitz
John Speight (Acting Chair)
Jim Viele
John Vertido

PUC Commissioners Absent: Blandon Granger

Staff Present: Kathy Pease, Development Services Planning Manager
Tricia Stewart, Development Services Senior Planner
Michelle Bertolino, Electric Utility Director
David Bradford, Energy Services Account Representative
Rich Plecker, Environmental Utilities Director
Dale Olson, Environmental Utilities Principal Engineer
Sean Bigley, Public Affairs Administrator
Kelye McKinney, Assistant Environmental Utilities Director
Jim Mulligan, Water Utility Manager
Mike Bloom, Assistant Electric Utility Director
Sonny Person, Assistant Electric Utility Director
Vonette McCauley, Electric Public Information Officer
Philip McAvoy, Electric Finance & Administration Manager
Rick Corral, Electric Engineering Technical Supervisor
Joe Mandell, Senior Deputy Attorney
Karen Sainsbury, Recording Secretary

2. Pledge of Allegiance

3. Minutes of February 23, 2016

The minutes of February 23, 2016 were approved as amended.

4. Oral Comments/Public Comment

None.

5. New Business

a. Review of the Amoruso Ranch Specific Plan and Draft EIR

Report by Development Services Senior Planner Tricia Stewart on the Amoruso Ranch Specific Plan and Draft EIR, for recommendation.

Tricia Stewart and Kathy Pease presented the Public Utilities section of the Draft EIR and the Public Utilities Plan of the Amoruso Ranch Specific Plan and answered Commissioner questions.

- Who pays to relocate or underground electric facilities such as 12kV lines?
- Were electric conservation measures analyzed in the EIR for the developer to initiate renewable energy use?
- Concerned about growth that encroaches on undesirable things. Glad to see deed disclosures for odors from the Material Recovery Facility.
- Describe the Tinker Intertie on Industrial Boulevard and how water from PCWA is wheeled through the City. Is infrastructure adequate?
- Will PCWA water be supplied during early demands and is PCWA committed to building the Ophir plant?
- How is fair share of costs determined? Is that included in the Development Agreement?
- What areas will be supplied with Recycled Water?
- Has the Pleasant Grove Wastewater Treatment Plant expansion project taken this project into account, or will it need to be redesigned?
- In the area where Recycled Water is not available, what is there requiring irrigation and will the city pay the cost of potable water?

Item was opened for public comment.

Marcus Lo Duca, Counsel for the Brookfield Residential project team spoke thanking staff for their thoroughness on the staff report and presentation, and thanked the Commissioners for their time.

MOTION: Commissioner Vertido made the motion, which was seconded by Commissioner Schmitz, to accept all comments received tonight regarding the Public Utilities section of the Draft Environmental Impact Report and the Public Utilities Plan included in the Amoruso Ranch Specific Plan and forward a recommendation of approval to the Planning Commission and City Council regarding the Public Utilities portion of the Amoruso Ranch Specific Plan Draft EIR

Ayes: Hildenbrand, McHan, Schmitz, Speight, Viele, Vertido
Noes:
Absent: Granger

- b. Environmental Utilities Monthly Update
Report by Environmental Utilities Director Richard Plecker summarizing monthly status of Environmental Utilities issues, for information.
- c. Environmental Utilities Legislative Update
Presentation by Public Affairs Administrator Sean Bigley on the Legislative Update, for information.
- d. Roseville Electric Utility Monthly Report
Report by Electric Utility Director Michelle Bertolino summarizing monthly status of Electric issues, for information.
- e. Roseville Electric Utility New Solar Calculator Tool for Customers
Presentation by Energy Services Account Representative David Bradford on the New Solar Calculator Tool for Customers, for information.

6. Reports – Commission/Staff

None.

7. Proposed Future Agenda Items

Commissioner McHan requested a presentation on the water testing program at the treatment plant, groundwater pumps and residential properties.

8. Adjournment

Commissioner Viele moved for adjournment of the March 22, 2016 Public Utilities Commission meeting. Commissioner Vertido seconded the motion. The motion passed unanimously at 8:48 p.m.

John Speight
Acting Chairperson

Karen Sainsbury
Recording Secretary

Title: Asset Management Program Overview

Meeting Date: 4/26/2016
Item #: 5.2.

ATTACHMENTS:

Description

Enterprise Asset Management



Enterprise Asset Management Program Update

April 26, 2016

Michael Zacharia, Principal Engineer
Environmental Utilities

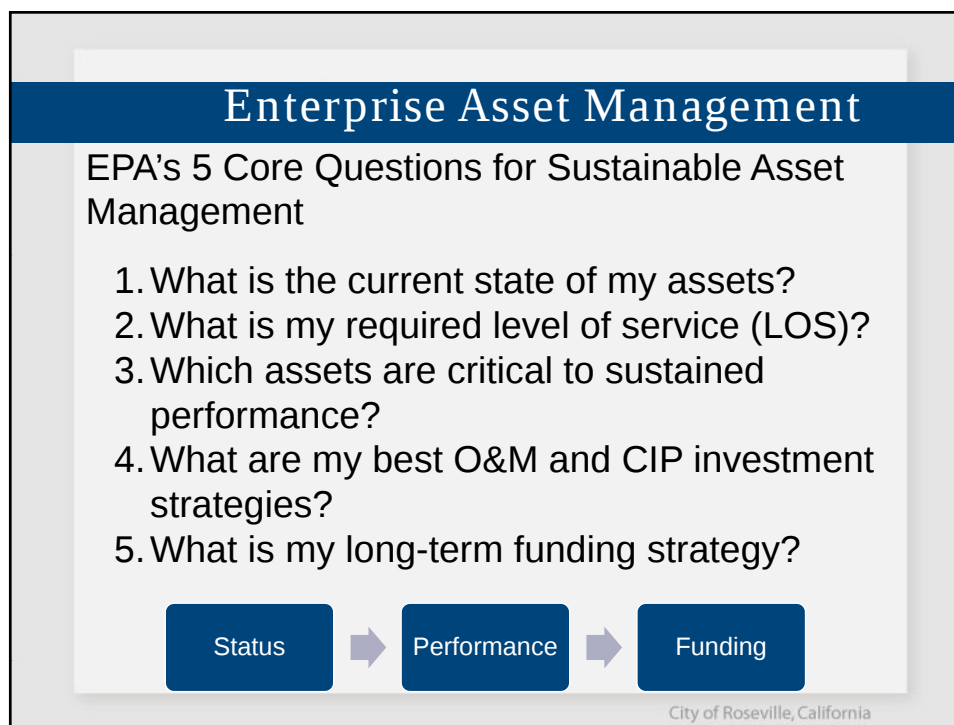
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Agenda

- What is Enterprise Asset Management?
- Recent Program Activities
- Utilities Status

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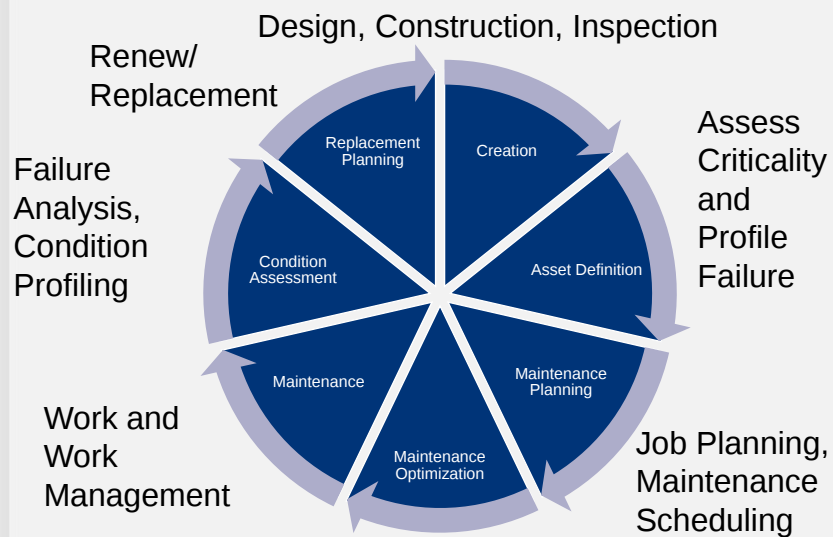
Enterprise Asset Management

Overview of the Asset Management Elements



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Asset Life Cycle



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Program Activities

The screenshot displays the IBM Maximo software interface. On the left, a sidebar lists navigation options like 'My Recent Applications', 'Assets', 'Locations', 'Projects', 'Work Orders', 'Performance', 'Reports', 'System Configuration', and 'Work Center'. The main area is divided into several sections: 'BOYDS WRENCH TIME' with a gauge chart, 'LEE WRENCH TIME' with another gauge chart, and a large table of work orders. The work orders table includes columns for 'Work Order Number', 'Description', 'Status', 'Priority', 'Due Date', and 'Assign To'. Below the work orders table, there's a section for 'REP UTILITY TECH OPEN' with a list of tasks. The IBM Maximo logo is prominently displayed in the center.

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Asset Groups

Environmental Utilities

- Treatment Plants
- Water and Wastewater Pipelines
- Solid Waste

Central Services

- Central Stores
- Fleet Management
- Facilities Maintenance

Public Works

- Traffic
- Streets
- Floodplain Monitoring

Parks

- Parks
- Open Space

Electric

- Power Generation
- Substations
- Power Distribution

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Utilities Focus

Asset Registry

- Asset Attributes
- Criticality
- Level of Service
- Condition Assessment

Maintenance

- Maintenance Planning
- Failure Assessment
- Predictive & Preventative

Work Management

- Scheduling
- Planning
- Cost Capture

System Integrations

- Finance
- Utility Billing
- GIS

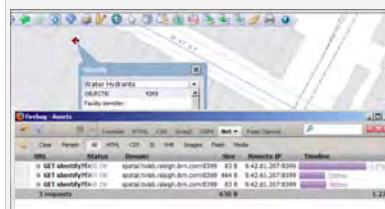
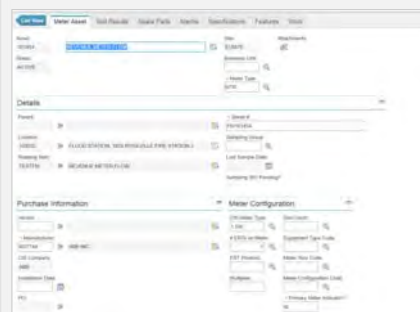
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Leveraging Enterprise Tools

Utility Billing



GIS



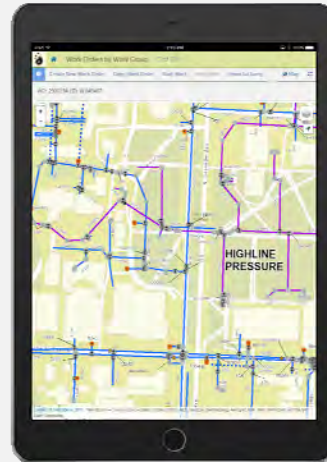
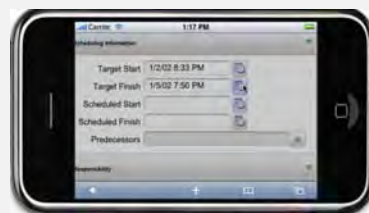
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Mobile Computing

Dispatch and Work Management On-The-Go

Full Functionality and Compact

Efficient Use Of Time



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EAM Status Utilities

Currently Live

- Water and Wastewater Treatment
- Solid Waste
- Power Generation

Summer 2016

- Water and Electric Metering

Winter 2017

- Water Distribution
- Wastewater Collection and Recycled Water
- Electric Distribution

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Looking Beyond Go Live

EAM Business Plan



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Where We Are Going and Beyond...

- Replacement Planning
- Condition Assessment
- Failure Profiling
- Advanced Mobility
- Service Level and Performance Standards
- Business Intelligence & Analytics
- Health, Safety & Regulatory Compliance



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Questions

City of Roseville, California



PUBLIC UTILITIES COMMISSION

Title: Environmental Utilities Urban Water Management Plan

Meeting Date: 4/26/2016
Item #: 5.3.

ATTACHMENTS:

Description

Urban Water Management Plan

Urban Water Management Plan Staff Report

Urban Water Management Plan Update

Roseville Public Utilities Commission
April 26, 2016

Colleen Boak, Assistant Engineer

City of Roseville, California



Plan Objectives

- Describe the historical background of the Urban Water Management Plan requirement as well as the Agency as a water purveyor.
- Provide a system description– including potable and recycled water availability.
- Address SBX7-7 baseline and target compliance

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Plan Objectives Cont.

- Discuss system supplies and forward planning for future development. Include opportunities for recycled water use as a supplemental supply.
- Address system reliability and constraints
- Show appropriate planning for drought and water shortages
- Describe measures taken for conservation

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UWMP Chapters 1 and 2

- Chapter 1 –
Introduction and
Overview
- Chapter 2 –
 - Plan Preparation
 - Coordination and
Outreach



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UWMP Chapter 3

- Chapter 3 – System Description
 - Service Area
 - Water System Facilities
 - Reliability Focused



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UWMP Chapter 4

- Chapter 4 – System Water Use
 - Demand Estimates
 - 2020 through 2040
 - 5 Year Increments



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UWMP Chapter 5

- Chapter 5 – SB X7-7 Baseline and Targets
 - Baseline 10 year average
 - 309 gallons/capita/day (GPCD)
 - Legislative reduction targets
 - **2015 = 278 GPCD**
 - 2020 and beyond = 247 GPCD
- **Roseville's 2015 Results: 165 GPDC**

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UWMP Chapter 6

- Chapter 6 – System Supplies
 - Available Water Sources
 - Future Water Supply Projects
 - Ophir WTP
 - RiverArc
 - Future Groundwater Wells

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Roseville's Water Supply Portfolio

- Surface Water
- Ground Water
- Recycled Water



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UWMP Chapter 7

- Chapter 7 – Water System Reliability
- Constraints
- Reliability of Supplies
 - Average of Normal Year
 - Single-Dry Year
 - Multiple Dry Year

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Water Planning Normal Year - AFY

	2020	2025	2030	2035	2040
Demands	44,355	46,971	50,213	53,285	55,745
Supplies:					
<i>USBR (32,000)</i>	32,000	32,000	32,000	32,000	32,000
<i>PCWA (up to 30,000)</i>	9,055	11,300	14,074	16,762	18,907
<i>Recycled (projected use)</i>	3,301	3,671	4,139	4,523	4,838

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Water Shortage Planning Single Dry Year

		2020	2025	2030	2035	2040
Supply	<i>Surface</i>	38,000	38,000	39,500	39,500	39,500
	<i>Groundwater</i>	0	0	0	0	0
	<i>Recycled</i>	3,301	3,671	4,139	4,523	4,838
	<i>Demand (100%)</i>	44,355	46,971	50,213	53,285	55,745
	<i>Surplus or (Deficit)</i>	(3,054)	(5,300)	(6,574)	(9,262)	(11,407)

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Water Shortage Planning Single Dry Year – 20%

		2020	2025	2030	2035	2040
Supply	Surface	38,000	38,000	39,500	39,500	39,500
	Groundwater	0	0	0	0	0
	Recycled	3,301	3,671	4,139	4,523	4,838
Demand (80%)		36,144	38,311	40,998	43,533	45,564
Surplus or (Deficit)		5,157	3,360	2,641	490	(1,226)

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Water Shortage Planning Multiple Dry Year

		2020	2025	2030	2035	2040
Supply	Surface	45,426	45,426	46,926	46,926	46,926
	Groundwater	0	0	0	0	0
	Recycled	3,301	3,671	4,139	4,523	4,838
Demand (100%)		44,355	46,971	50,213	53,285	55,745
Surplus or (Deficit)		4,372	2,126	852	(1,836)	(3,981)

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UWMP Chapter 8

- Chapter 8 – Water Shortage Contingency Plan
 - Municipal Code 14.09 – Water Conservation



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UWMP Chapter 9

- Chapter 9 – Demand Management Measures (DMMs)
 - Water Efficiency Program
 - Status of key DMMs



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Demand Management Measures

- Water Waste Prevention Ordinances
- Metering
- Conservation Pricing
- Public Education and Outreach - UEC
- Programs to Assess and Manage Distribution System Real Loss
- Water Conservation Program Coordination and Staffing Support
- Other DMMs- Residential and Commercial Programs

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UWMP Chapter 10

- Chapter 10 – Plan Adoption, Submittal and Implementation
- Update of plan on 5 year intervals – next update due in 2020.

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Staff Recommendation

- Recommendation of Plan Approval to City Council, if acceptable.
- Submission to DWR by July 1, 2016 as the required update for 2015.



STAFF REPORT

TO:	Roseville Public Utility Commission
FROM:	Colleen Boak, Assistant Engineer
DATE:	April 20, 2016
RE:	City of Roseville 2015 Urban Water Management Plan

Meeting Date: April 26, 2016

SUMMARY RECOMMENDATION

Staff requests that the Commission review and recommend to Council approval of the City of Roseville 2015 Urban Water Management Plan (UWMP).

BACKGROUND

Beginning in 1985, California Department of Water Resources (DWR) has required water purveyors delivering water to at least 3,000 customers prepare an UWMP and update it on 5 year intervals. The last plan was developed and approved for 2010 and included City boundaries as they existed at that time.

With ongoing and recent updates to the DWR Guidebook for Urban Water Suppliers, it was determined that City staff would collaborate with a consultant, West Yost Associates, on the development of the 2015 document update. Effort began in November of 2015 with collection of a significant quantity of information, continuing through a staff review process, and resulting in the plan proposed.

Development of the 2015 UWMP comes at a pivotal time for water supply conditions in California. Drought conditions have resulted in unprecedented State mandates for water conservation and the need for reliable water supplies to serve existing and future water customers is critical. Included in the 2015 UWMP are many elements that ensure proper planning is in place to account for growth in the City's water service area. This includes analysis of normal year and drought condition water supplies, discussion of available alternative water supplies for future water projects, and strategies for meeting the Water Conservation Act of 2009 (SB X7-7) that required Statewide 20% reduction in demand by 2020. The 2015 UWMP is the first compliance year for the interim water use targets required by SB X7-7.

Roseville had the option to satisfy the Plan's conservation requirements by implementing the Plan's required Demand Management Measures (DMMs) or by following the California Urban Water Conservation Council's (CUWCC) method of compliance. The City chose to utilize the CUWCC's GPCD method of compliance option to be consistent with the efforts and reporting structure of the 2009 legislation requirement of a 20% reduction by the year 2020. Additionally, the City has included descriptions of how it has successfully accomplished all DMMs, exceeding

conservation goals in the face of prolonged and serious drought in recent years. The six DMMs highlighted in the UWMP include:

- Water Waste Prevention Ordinances
- Metering
- Conservation Pricing
- Public Education and Outreach
- Programs to Assess and Manage Distribution System Real Loss
- Water Conservation Program Coordination and Staffing Support

Many of these programs are currently being implemented as part of the City's GPCD compliance strategy and are reported in the CUWCC compliance reports. As documented within Chapter 5 of the UWMP, the City has met its interim 2015 per capita water use target of 278 GPCD and is well positioned to meet the final 2020 target of 247 GPCD.

Roseville has and continues to diligently plan for sufficient water supply in both normal and drought years for the existing General Plan area as well for future development. Water supply reliability projects and drought contingency plans have been developed and are regularly updated to ensure that sufficient water is available in all water year types.

FISCAL IMPACT

Conservation programs are a condition of City water contracts, regional agreements, and a matter of State law with passage of SB X7-7 in 2009. Planning continues to be done on an annual basis and is included in all rates analyses and proposed budgets. It is anticipated there will be cost increases for water reliability projects and water efficiency and conservation compliance in future years but these will be included in annual plans and budgets presented to Council. The current proposed Water Efficiency Division budget is \$1,177,980 for FY17.

ENVIRONMENTAL REVIEW

The California Environmental Quality Act (CEQA) does not apply to activities that will not result in a direct or reasonably foreseeable indirect physical change in the environment (CEQA Guidelines §15061(b)(3)). The Urban Water Management Plan project does not include the potential for a significant environmental effect, and therefore is not subject to CEQA.

RECOMMENDATION

Staff recommends that the Roseville Public Utilities Commission review the City of Roseville 2015 Urban Water Management Plan and recommend approval by City Council.

Administrative Draft 2015 Urban Water Management Plan

Prepared for

The City of Roseville

April 2016



415-12-15-26

Project Manager
James P. Connell, PE

Date

QA/QC Review
Elizabeth T. Drayer, PE

Date



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List of Acronyms and Abbreviations

2025 Development Plan	2025 Development Projections with Sierra Vista Specific Plan
AB	Assembly Bill
AB 1881	Water Conservation in Landscaping Act of 2006
Act	Urban Water Management Planning Act
ADWF	Average Dry Weather Flow
AF	Acre-Feet
AF/YR	Acre-Feet Per Year
ASR	Aquifer Storage and Recovery
AWWA	American Water Works Association
Baseline GPCD	Baseline Daily Per Capita Water Use, Measured in Gallons Per Capita Per Day
BMP	Best Management Practice
Cal Am	California American Water Company
CASGEM	California Statewide Groundwater Elevation Monitoring
CDoF	California Department of Finance
CEQA	California Environmental Quality Act
CFS	Cubic Feet Per Second
CHWD	Citrus Heights Water District
CII	Commercial, Industrial and Institutional
CIMIS	California Irrigation Management Information System
City	City of Roseville
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Project

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CVP M&I WSP	Central Valley Project Municipal and Industrial Water Shortage Policy
DMMs	Demand Management Measures
DPPS	Dual Purpose Pump Station
Dry Creek WWTP	Dry Creek Wastewater Treatment Plant
DWR	Department of Water Resources
DWR Guidebook	2015 Urban Water Management Plans Guidebook for Urban Water Suppliers
DWR Methodologies	Department of Water Resources Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use
EIS	Environmental Impact Statement
ETo	Reference Evapotranspiration
FPS	Feet Per Second
GIS	Geographical Information System
GMP	Groundwater Management Plan
GPCD	Gallons Per Capita Per Day
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
HET	High Efficiency Toilet
HP	Hewlett-Packard
HRNPS	Highland Reserve North Pump Station
LEED	Leadership in Energy and Environmental Design
M&I	Municipal and Industrial
MCL	Maximum Contaminant Level
MFP	Middle Fork Project
MGD	Million Gallons Per Day
MOU	Memorandum of Understanding
MWELo	Model Water Efficient Landscape Ordinance
NAICS	North American Industry Classification System
NPDES	National Pollutant Discharge Elimination System
OCAP	Operations Criteria and Plan
PCWA	Placer County Water Agency
Pleasant Grove WWTP	Pleasant Grove Wastewater Treatment Plant
PSI	Pounds Per Square Inch
PWS	Public Water System
PWWF	Peak Daily Wet Weather Flow
RHNA	Regional Housing Needs Allocation
RHNAP	Regional Housing Needs Allocation Plan
RUWMP	Regional Urban Water Management Plan
RWA	Regional Water Authority
SAB	Service Area Boundary
SACOG	Sacramento Area Council of Governments
SB	Senate Bill

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SB X7-7	Water Conservation Act of 2009
SGMA	Sustainable Groundwater Management Plan
SJWD	San Juan Water District
SPMUD	South Placer Municipal Utility District
SPWA	South Placer Wastewater Authority
SSWD	Sacramento Suburban Water District
US EPA	U.S. Environmental Protection Agency
USBR	U.S. Bureau of Reclamation
UWMP	Urban Water Management Plan
West Yost	West Yost Associates
WFA	Water Forum Agreement
WSCP	Water Shortage Contingency Plan
WTP	Water Treatment Plant

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ES.1 INTRODUCTION

Over the last several years, Urban Water Management Plans (UWMPs) have assumed a very important role in water supply planning and management for communities in California. UWMPs have become the foundational documents which cities and water agencies use to develop water supply assessments and other key water supply reliability documents.

Development of the 2015 UWMPs comes at a pivotal time for water supply conditions in California. Drought conditions have resulted in unprecedented State mandates for water conservation, and have led to the passage of the Sustainable Groundwater Management Act of 2014. These actions will impact all water suppliers and all water users in the State. As the economy improves, the need for reliable water supplies to serve existing customers, as well as new development, is more critical than ever. The 2015 UWMP is also the primary compliance document for the interim water use targets required by the Water Conservation Act of 2009 (SB X7-7).

As described in this 2015 UWMP, the City of Roseville's (City's) residents and businesses have responded positively to the call for water conservation. The City continues to be committed to the implementation of good water management practices to ensure that adequate, reliable water supplies are available to meet existing and projected demands. The City has met its interim 2015 per capita water use target, and is well positioned to meet the final 2020 water use target per capita water demand.

ES.2 WATER CODE REQUIREMENTS

The Urban Water Management Planning Act (UWMP Act) requires water suppliers that either provide over 3,000 acre-feet per year or have over 3,000 connections prepare and submit to the State Department of Water Resources (DWR) an Urban Water Management Plan every 5 years.

The UWMP Act has been modified over the years in response to the State's water shortages, droughts, and other factors. A significant amendment was made in 2009, after the 2007 to 2009 drought, and as a result of the Governor's call for a statewide 20 percent reduction in urban water use by the year 2020. This was the Water Conservation Act of 2009, also known as SB X7-7. This act required agencies to establish water use targets for 2015 and 2020 that would result in statewide water savings of 20 percent by 2020.

The primary objective of the UWMP Act is to direct "urban water suppliers" to develop an UWMP that provides a framework for long-term water supply planning. The UWMP also documents how urban water suppliers are carrying out their long-term resource planning responsibilities.

In 2015, the City supplied approximately 22,881 acre-feet of surface water to approximately 41,469 residential and non-residential connections located within its water service area. The City is therefore considered an urban water supplier and is required to submit an UWMP. This 2015 UWMP describes the City water system, historical and projected water use, water supply sources, and a comparison of projected water supply to water demands during normal, single-dry, and multiple-dry years in five-year increments from 2020 to 2040. As required by SB X7-7, this 2015 UWMP also confirms the City's 2015 and 2020 water use targets, verifies the City's compliance

Executive Summary



with the interim 2015 water use target, and describes the City's implementation plan for meeting the City's final 2020 water use target.

The City's 2015 UWMP (or Plan) has been prepared in accordance with the UWMP Act, as defined by the California Water Code, Division 6, Part 2.6, Sections 10610 through 10656 (Urban Water Management Planning), and the Water Conservation Act of 2009 (WC Act, also known as SB X7-7), as defined by California Water Code, Division 6, Part 2.55, Section 10608 (Sustainable Water Use and Demand Reduction). A copy of the relevant sections of the Water Code are included in Appendix A of this document.

A brief summary of this 2015 UWMP's contents and the public review and adoption process is provided below, following a discussion of the legislative changes that have been enacted since the 2010 UWMPs were prepared and adopted.

ES.3 LEGISLATIVE CHANGES FROM 2010 UWMP

The legislative changes to the UWMP Act are described in Chapter 1. Some highlighted changes include:

- Demand Management Measures: Address the nature and extent of each water demand management measure implemented over the past 5 years in narrative form.
- 2015 UWMP Submittal Date to DWR: Changed from December 31, 2015 to July 1, 2016.
- Water Loss: Requires water suppliers to quantify and report on distribution system water loss using the AWWA Water Audit methodology.
- Voluntary Reporting of Passive Savings due to new water codes and requirements.
- Voluntary Reporting of Energy Intensity: Describe the water/energy nexus.
- Defining Water Features: Water Shortage Contingency Plans must distinguish between water features that are artificially supplied with water (including ponds, lakes, waterfalls, and fountains) and swimming pools and spas.

ES.4 PLAN ORGANIZATION

This 2015 UWMP has been prepared per California Water Code Division 6, Part 2.6 (Urban Water Management Planning Act), included in Appendix A. This 2015 UWMP has also been prepared based on guidance provided by the California Department of Water Resources (DWR) in their January 2016 "2015 Urban Water Management Plans, Guidebook for Urban Water Suppliers" (DWR 2015 Guidebook). The required DWR tables are included in Appendix B.

DWR's Urban Water Management Plan Checklist, as provided in the 2015 UWMP Guidebook, has been completed to demonstrate the Plan's compliance with applicable requirements. A copy of the completed checklist is included in Appendix C.

This 2015 UWMP is organized into the following chapters:

- Chapter 1: Introduction and Overview
- Chapter 2: Plan Preparation
- Chapter 3: System Description
- Chapter 4: System Water Use
- Chapter 5: SB X7-7 Baselines and Targets
- Chapter 6: System Supplies
- Chapter 7: Water Supply Reliability
- Chapter 8: Water Shortage Contingency Planning
- Chapter 9: Demand Management Measures
- Chapter 10: Plan Adoption, Submittal and Implementation

Appendices (listed in Chapter 1) provide relevant supporting documents, including the 2015 UWMP tables and SB X7-7 Compliance and Verification Forms.

ES.5 PLAN REVIEW AND ADOPTION

The UWMP Act requires the water supplier to coordinate the preparation of its Plan with other appropriate agencies, including other water suppliers that share a common source, water management agencies, and relevant public agencies. These agencies, as well as the public, participated in the coordination and preparation of this 2015 UWMP. The coordination and outreach are described in Chapter 2.

A public hearing to discuss the Draft 2015 UWMP was held on May 18, 2016.

Public hearings provide an opportunity for all City water users and the general public to become familiar with the Plan, and to ask questions about the City's continuing plans for providing a reliable, safe, high-quality water supply. The adoption, implementation and economic impact of revised per capita water use targets (described in Chapter 5) was also discussed. Copies of the draft Plan were made available for public inspection at the City Clerk's office, and at local public libraries.

Water Code § 10621 (b) requires agencies to notify the cities and counties to which they serve water that the Plan is being updated and reviewed. This notification must be sent out at least 60 days in advance of the public hearing. In early 2016, a notice of preparation was sent to the cities and counties, and other stakeholders, to inform them of the UWMP update process and schedule and to solicit input for the Plan update. The notifications to cities and counties, the public hearing notifications, and the public hearing and adoption are discussed in Chapter 10 and provided in Appendix D.

This Plan was adopted by the City Council on June 1, 2016. A copy of the adoption resolution is provided in Appendix O.

Executive Summary



A copy of this 2015 UWMP will be submitted to DWR within 30 days of adoption and by July 1, 2016. The adopted 2015 UWMP will be submitted electronically to DWR using the WUEdata submittal tool. A CD or hardcopy of the adopted 2015 UWMP will also be submitted to the California State Library.

Within 30 days of submitting the adopted Plan to DWR, copies of this Plan will be provided to the cities and counties to which the City provides water and will be made available during normal business hours at the following locations:

- Local public libraries, and
- City Clerk's Office.

A copy of the adopted Plan will also be available for review and download on the City's website: (<http://www.roseville.ca.us/UWMP>).

Should this Plan be amended or changed, copies of amendments or changes to the Plan shall be submitted to DWR, the California State Library, and any city or county within which the City provides water supplies within 30 days after adoption of the amendment(s).

CHAPTER 1

Introduction and Overview



This chapter provides an introduction and overview of the City of Roseville (City) 2015 Urban Water Management Plan (UWMP) including the importance and extent of the City's water management planning efforts, changes since the preparation of the City's 2010 UWMP, and organization of the City's 2015 UWMP. This 2015 UWMP has been prepared jointly by City staff and West Yost Associates (West Yost).

1.1 INTRODUCTION

The Urban Water Management Planning Act (Act) was originally established by Assembly Bill 797 (AB 797) on September 21, 1983. Passage of the Act was recognition by state legislators that water is a limited resource, and a declaration that efficient water use and conservation would be actively pursued throughout the state. The primary objective of the Act is to direct "urban water suppliers" to develop an UWMP which provides a framework for long-term water supply planning, and documents how urban water suppliers are carrying out their long-term resource planning responsibilities to ensure adequate water supplies are available to meet existing and future water demands. A copy of the current version of the Act, as incorporated in Sections 10610 through 10656 of the California Water Code (CWC), is provided in Appendix A of this document.

1.2 IMPORTANCE AND EXTENT OF CITY'S WATER MANAGEMENT PLANNING EFFORTS

The purpose of the UWMP is to provide a planning tool for the City for developing and delivering municipal water supplies to the City's water service area. The City's UWMP is a comprehensive guide for planning for a safe and adequate water supply.

1.3 CHANGES FROM 2010 UWMP

The Urban Water Management Planning Act has been modified over the years in response to the State's water shortages, droughts and other factors. A significant amendment was made in 2009, after the 2007 to 2009 drought, and as a result of the Governor's call for a statewide 20 percent reduction in urban water use by the year 2020. This Water Conservation Act of 2009, also known as SB X7-7, required agencies to establish interim water use targets for 2015 in order to achieve a statewide water savings of 20 percent by 2020.

There have been several additions and changes to the California Water Code since the City's 2010 UWMP was prepared. These are summarized below:

- AB 2067 (Weber 2014)
 - CWC Section 10631 (f)(1) and (2): Demand Management Measures
 - Requires water suppliers to provide narratives describing their water demand management measures, as provided.
 - Requires retail water suppliers to address the nature and extent of each water demand management measure implemented over the past 5 years and describe the water demand management measures that the supplier plans to implement to achieve its water use targets.
 - See Chapter 9 of this 2015 UWMP for a description of the City's Demand Management Measures.

- CWC Section 20621 (d): Submittal Date
 - Requires each urban water supplier to submit its 2015 plan to the Department of Water Resources by July 1, 2016.
- SB 1420 (Wolk 2014)
 - CWC Section 10644(a)(2): Submittal Format
 - Requires the plan, or amendments to the plan, to be submitted electronically to the department.
 - CWC Section 10644(a)(2): Standardized Forms
 - Requires the plan, or amendments to the plan, to include any standardized forms, tables, or displays specified by the department.
 - CWC 10631 (e)(1)(J) and (e)(3)(A) and (B): Water Loss
 - Requires a plan to quantify and report on distribution system water loss.
 - See Chapter 4 of this 2015 UWMP for a description of the City's distribution system water losses.
 - CWC 10631 (e)(4): Voluntary Reporting of Passive Savings
 - Provides for water use projections to display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans, when that information is available and applicable to an urban water supplier.
 - See Chapter 4 of this 2015 UWMP for a description of the City's passive water savings.
- SB 1036 (Pavley 2014)
 - CWC 10631.2 (a) and (b): Voluntary Reporting of Energy Intensity
 - Provides for an urban water supplier to include certain energy-related information, including, but not limited to, an estimate of the amount of the energy used to extract or divert water supplies.
 - The City has opted to not report on energy intensity in this 2015 UWMP.
- CWC 10632: Defining Water Features
 - Commencing with the UWMP update due July 1, 2016, for purposes of developing the water shortage contingency analysis, requires urban water suppliers to analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.
 - See Chapter 8 of this 2015 UWMP for a discussion of water features that are artificially supplied with water.

1.4 PLAN ORGANIZATION

This 2015 UWMP was prepared per California Water Code Division 6, Part 2.6 (Urban Water Management Planning Act), included in Appendix A. This 2015 UWMP has also been prepared based on guidance provided by the California Department of Water Resources (DWR) in their "Guidebook for Urban Water Suppliers" (DWR 2015 Guidebook).

This 2015 UWMP is organized into the following chapters:

- Chapter 1: Introduction and Overview
- Chapter 2: Plan Preparation
- Chapter 3: System Description
- Chapter 4: System Water Use
- Chapter 5: SB X7-7 Baselines and Targets
- Chapter 6: System Supplies
- Chapter 7: Water Supply Reliability
- Chapter 8: Water Shortage Contingency Planning
- Chapter 9: Demand Management Measures
- Chapter 10: Plan Adoption, Submittal and Implementation

This 2015 UWMP also contains the following appendices of supplemental information and data related to the City's 2015 UWMP:

- Appendix A: California Water Code - Urban Water Management Planning and Sustainable Water Use and Demand Reduction
- Appendix B: DWR Urban Water Management Plan Tables
- Appendix C: DWR Urban Water Management Plan Checklist
- Appendix D: Agency and Public Notices
- Appendix E: AWWA Water Audit
- Appendix F: SB X7-7 Compliance and Verification Forms
- Appendix G: Intent to Retain Control of Conserved Water
- Appendix H: SPWA Systems Evaluation
- Appendix I: CVP M&I WSP
- Appendix J: Water Conservation Ordinance
- Appendix K: Supplemental DMM Materials
- Appendix L: CUWCC Reporting Documents
- Appendix M: UWMP Adoption Resolution

Chapter 1

Introduction and Overview



Furthermore, this 2015 UWMP contains all of the tables recommended in the DWR Guidebook, both embedded into the UWMP chapters where appropriate and included in Appendix B.

DWR's Urban Water Management Plan Checklist, as provided in the 2015 UWMP Guidebook, has been completed by West Yost to demonstrate the plan's compliance with applicable requirements. A copy of the completed checklist is included in Appendix C.

CHAPTER 2

Plan Preparation



This chapter describes the preparation of the City's 2015 UWMP, including the basis for the preparation of the plan, individual or regional planning, fiscal or calendar year reporting, units of measure, and plan coordination and outreach.

2.1 BASIS FOR PREPARING A PLAN

The Urban Water Management Planning Act requires every "urban water supplier" to prepare and adopt an UWMP, to periodically review its UWMP at least once every five years and make any amendments or changes which are indicated by the review. An "urban water supplier" is defined as 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 (AF) of water annually.

A public water system (PWS) is a system that provides drinking water for human consumption through pipes or other constructed conveyances. The City manages PWS # 3110008. As shown in Table 2-1, in 2015, the City provided water supplies to 41,469 customers, and supplied 22,881 AF of water.

Table 2-1. Retail: Public Water Systems (DWR Table 2-1)

Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
3110008	City of Roseville	41,469	22,881
TOTAL		41,469	22,881
NOTES: All Volumes are in AF. The City was under a state mandate to conserve water due to statewide drought conditions during 2015. The City conserved 32.7% during calendar year 2015.			

2.2 REGIONAL PLANNING

The CWC provides mechanisms for participating in area-wide, regional, watershed, or basin-wide urban water management planning. Per *Department of Water Resources Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use* (DWR Methodologies), water suppliers who receive water from a shared wholesale supplier may form a regional alliance. Although the City and its neighboring water suppliers practice regional water supply planning, the City has not formed a regional alliance with other water suppliers for compliance with SB X7-7.

The City has prepared an individual UWMP and will not adopt a Regional Urban Water Management Plan (RUWMP).

2.3 INDIVIDUAL OR REGIONAL PLANNING AND COMPLIANCE

Water Code § 10620 (d)(1)

An urban water supplier may satisfy the requirements of this part by participation in area-wide, regional, watershed, or basin-wide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.

This 2015 UWMP has been prepared on an Individual Reporting basis, covering only the City's service area (see Table 2-2). As described below in Section 2.5, the City has notified and coordinated with appropriate regional agencies and constituents.

Table 2-2. Plan Identification (DWR Table 2-2)

Select Only One	Type of Plan	Name of RUWMP or Regional Alliance if applicable
☒	Individual UWMP	
☐	Regional Urban Water Management Plan (RUWMP)	

2.4 FISCAL OR CALENDAR YEAR AND UNITS OF MEASURE

The City is a water retailer.

The City's 2015 UWMP has been prepared on a calendar year basis.

The City's reporting of water volumes in this 2015 UWMP is reported in AF.

Table 2-3 summarizes the City's reporting methods for this 2015 UWMP.

Table 2-3. Agency Identification (DWR Table 2-3)

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
Units of Measure Used in UWMP	
Unit	AF

2.5 COORDINATION AND OUTREACH

This section includes a discussion of the City's inter-agency coordination and coordination with the general public. The UWMP Act requires the City to coordinate the preparation of its Plan with other appropriate agencies and all departments within the City, including other water suppliers that share a common source, water management agencies, and relevant public agencies. The City coordinated the preparation of its Plan with Placer County Water Agency (PCWA), USBR, San Juan Water District, the City of Citrus Heights, and Placer County. These and other agencies, as well as the public, participated in the coordination and preparation of this 2015 UWMP, and are summarized below.

2.5.1 Wholesale and Retail Coordination

Water Code § 10631 (j)

An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).

The City receives wholesale raw water supplies from several agencies. In accordance with CWC 10631, the City has informed each supplier of projected water use from that source for the period of 2020-2040, as shown in Table 2-4.

Table 2-4. Retail: Water Supplier Information Exchange (DWR Table 2-4)

The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with CWC 10631.	
Wholesale Water Supplier Name	
Placer County Water Agency	
San Juan Water District	
United States Bureau of Reclamation	

2.5.2 Coordination with Other Agencies and the Community

The City coordinated its UWMP preparation with other local agencies and the community.

2.5.2.1 Coordination with other Agencies

Water Code § 10620 (d)(2)

Each urban water supplier shall 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.

The City coordinated the preparation of this Plan with several agencies including: PCWA, U.S. Bureau of Reclamation (USBR), San Juan Water District, the City of Citrus Heights, Placer County, and members of the public. These and other agencies, as well as the public, participated in the coordination and preparation of this 2015 UWMP. In addition, the City coordinated the preparation of the water demand projections in this Plan with the Roseville General Plan 2025 (adopted May 5, 2010).

2.5.2.2 Coordination with the Community

Water Code §10642

Each urban water supplier shall encourage the 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. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

The City has actively encouraged community participation in water management activities and specific water-related projects. The City's public participation program includes both active and passive means of obtaining input from the community, such as mailings, public meetings, and web-based communication. The City's website describes on-going projects and posts announcements of planned rate increases to fund these water projects.

As part of development of this 2015 UWMP update, the City allowed a public review period following noticing and prior to adoption to allow ample time for public comments to be developed and received. Public noticing, pursuant to Section 6066 of the Government Code, was conducted prior to commencement of the public comment period. Public hearing notices are included in Appendix D of this document. During the public comment period, the Draft UWMP update was made available on the City's website (www.roseville.ca.us).

2.5.3 Notice to Cities and Counties

Water Code § 10621 (b) requires agencies to notify the cities and counties to which they serve water at least 60 days in advance of the public hearing that the plan is being updated and reviewed. In early 2016, a notice of preparation was sent to the cities and counties, and other stakeholders, to inform them of the UWMP update process and schedule and to solicit input for the Plan update. The notifications to cities and counties, the public hearing notifications, and the public hearing and adoption are discussed in Chapter 10.

CHAPTER 3

System Description



This chapter provides a description of the City's water system and service area. This includes a description of the water system facilities, climate, population, and housing within the City's service area.

3.1 GENERAL DESCRIPTION

The City is located approximately 16 miles northeast of Sacramento, and has an estimated population of 128,382 residents (as of January 1, 2015, according to California Department of Finance). The City incorporated on April 10, 1909 and is a charter city operating under a City Manager-Council form of government.

The City is bordered in the east by the City of Rocklin and Granite Bay, and in the south by the Sacramento County line and pockets of unincorporated Placer County including the Dry Creek West Placer Community Plan Area. The north and west city boundaries are bordered by mostly undeveloped and unincorporated Placer County land that has the potential for future development and annexation.

3.2 SERVICE AREA

The City's service area boundary is shown in Figure 3-1. The majority of residents within the city limits are served by the City's water system. There are a few small areas within the City that are served by PCWA, San Juan Water District (SJWD), and Citrus Heights Water District (CHWD).

The City's water service area is currently divided into five pressure zones. With the exception of Pressure Zone 4, which utilizes pressure reducing stations, all other pressure zones (Pressure Zones 1, 2, 3, and 5) are either served by gravity, require boosting, or are served by adjacent water agencies that have sufficient pressure to serve these areas.

3.3 SERVICE AREA CLIMATE

The service area experiences cool and humid winters and hot and dry summers. The City's weather is similar to the City of Sacramento which is in close proximity. Based on the historical data obtained from the Western Regional Climate Center, Sacramento's average monthly temperature ranges from 40 to 92 degrees Fahrenheit. The historical annual average precipitation is approximately 18 inches. The rainy season begins in November and ends in March. Average monthly precipitation during the winter months is about 2 to 3 inches. Relative humidity in the region ranges from 29 percent to 90 percent. Low humidity usually occurs in the summer months, from May through September. The combination of hot and dry weather results in high water demands during the summer. A summary of the regional climate data is provided in Table 3-1.

Table 3-1. Monthly Average Climate Data Summary

Month	Average Precipitation, inches ^(a)	Average ETo, inches ^(b)	Average Temperature, °F ^(a)	Average Maximum Temperature, °F ^(a)	Average Minimum Temperature, °F ^(a)
January	3.66	1.1	46.6	53.5	39.6
February	3.20	1.8	51.4	59.7	43.1
March	2.67	3.3	55.3	64.9	45.7
April	1.41	4.5	59.8	71.1	48.4
May	0.62	6.5	65.4	78.3	52.5
June	0.16	7.4	71.4	85.9	56.9
July	0.01	7.9	75.5	91.7	59.2
August	0.03	7.0	74.7	90.6	58.7
September	0.30	5.1	71.7	86.3	57.0
October	0.94	3.3	64.2	76.7	51.6
November	1.98	1.6	54.3	64.1	44.5
December	3.17	1.0	47.0	54.1	39.9
Annual	18.15	50.6	61.5	73.1	49.8

^(a) Western Regional Climate Center (WRCC) website: www.wrcc.dri.edu, Station 047633 Sacramento 5 ESE, California. Period of record: 7/11/1877 to 1/20/2015.

^(b) CIMIS Website: www.cimis.water.ca.gov, Station 131 Fair Oaks, California (April 1997 to December 2015), Monthly Average Eto Report, Printed January 2016.

3.4 SERVICE AREA POPULATION AND DEMOGRAPHICS

The City's water service area is described below, including population, employment, and other demographics.

3.4.1 Population

Projections for population, employment, and dwelling units within the City's water service area were completed for build out based on the City's General Plan 2025.

Historical population estimates, discussed in Chapter 5, are based on data from the Department of Finance, adjusted to account for the known population of neighborhoods within City limits that are not included in the City water service area.

Population is projected through build out of the City's General Plan based on information from various studies prepared as part of the City's standard development entitlement processes. Projections are for the current City Water Service Area boundary, including the Sierra Vista and Creekview Specific Plan areas, as well as the proposed Amoruso Ranch Specific Plan area intended for annexation in 2016. The City's current and projected service area population is shown in Table 3-2.

Table 3-2. Retail: Population – Current and Projected (DWR Table 3-1)

Population Served	2015	2020	2025	2030	2035	2040(opt)
	123,372	133,243	144,113	155,983	165,854	175,724

As indicated earlier, there are areas within the incorporated City limits that are not located within the Water Service Area boundary. These areas are composed primarily of single and multi-family residences, allowing the City to accurately estimate the population within City limits, but outside the Water Service Area.

3.4.2 Demographic Factors

The City of Roseville has a diverse mix of residential, commercial, industrial and institutional land uses. The City is a net importer of jobs, i.e. the City's daytime population is higher than the residential population. These factors have been considered when preparing the water demand projections. There are no significant non-residential populations (vacation, agriculture) or other demographic characteristics that would affect water use planning.

3.5 WATER SYSTEM FACILITIES

An overview of the City's water system facilities is provided in Figure 3-1. Major water system facilities are described below.

3.5.1 Surface Water Supply and Transmission

The surface water supply and transmission from Folsom Lake and future supplies are discussed below.

3.5.1.1 Folsom Lake

The City has made improvements to the Folsom Dam pumping station and the raw water delivery system to meet the needs of the City through projected build out. No additional supply capacity from Folsom Lake is anticipated.

In 2010 a major project to increase reliability of the water supply facilities was completed. At the request of the USBR, the City and other water purveyors that receive Folsom Lake water constructed a parallel raw water pipeline on USBR property to allow for maintenance of the existing pipeline, adding additional operational flexibility required for maintenance. This project is seen as a major improvement to this critical facility.

The City's pumping capacity at Folsom Dam is limited to 150 cubic feet per second (96.9 million gallons per day (MGD)). Once through the pumping station, raw water is conveyed through twin pipelines; an 84-inch diameter pipeline that was installed with original construction of Folsom facilities and a 72-inch diameter pipeline constructed by the City and SJWD to provide required redundancy for facility maintenance, as discussed above. These common facilities convey raw water to the "Hinkel Y" where the flows to SJWD and the City are split. Raw water for the City then flows through parallel 60-inch diameter and 48-inch diameter raw water pipelines to the City's Barton Road water treatment plant.

3.5.1.2 Future Supplies

Further discussed in Chapter 6, the City is planning to participate in the future PCWA Ophir Water Treatment Plant project to provide a new treated surface water source to the City to serve the proposed Amoruso Ranch Specific Plan area. The City is also evaluating opportunities to participate in a future regional water project that envisions a diversion from the Sacramento River (the RiverArc project). These infrastructure projects would increase the City's normal year water supply and increase the dry year water supply reliability of its existing water supplies.

3.5.2 Water Treatment Facilities

The City's water treatment plant (WTP) is located on Barton Road in the Placer County unincorporated community of Granite Bay. The Barton Road WTP capacity was expanded from 60 MGD to 100 MGD in 2008. The purpose of the expansion was to improve system reliability, daily peaking requirements, and regional conjunctive use strategies. Raw water treatment consists of these processes: flocculation/sedimentation, clarification, filtration and disinfection. Treated water is also fluoridated prior to distribution to City water customers.

The City is also part of a group of agencies that are studying the RiverArc project that would consist of constructing new conveyance and treatment facilities using Sacramento River source water. The new facilities will allow access to a portion of the City's Central Valley Project contract water and would allow greater operational flexibility and could reduce impacts to the Lower American River, a program which is consistent with the Water Forum Agreement.

3.5.3 Potable Water Storage Facilities

Water storage capacity is required to manage flow fluctuations in the system on a daily basis and maintain sufficient storage to address emergency needs such as main breaks or fire flows. The water system currently has 32 MG of storage and is projected to require 49 MG at system build out. Existing water storage projects along with the date of construction are listed in Table 3-3. None of the storage projects are expected to increase total water supplies.

Table 3-3 Potable Water Storage Tanks

Facility	Pressure Zone Served	Capacity, MG	Type	Year Constructed
WTP 2 MG	1, 2, 4, 5	2	Steel	1971
WTP 4 MG	1, 2, 4, 5	4	Pre-stressed Concrete	1990
WTP 6 MG	1, 2, 4, 5	6	Pre-stressed Concrete	2004
Northeast 7.25 MG	1-5	7.25	Pre-stressed Concrete	2009
Northeast 10 MG	1-5	10	Pre-stressed Concrete	1998
Halverson 2.9 MG	2	2.9	Pre-stressed Concrete	2008

3.5.4 Potable Water Distribution Facilities

Distribution piping in the City ranges from as large as 66-inch diameter pipe to as small as 4-inch diameter pipe. The City designs its distribution system to meet various pressure and velocity criteria under average day, maximum day and peak hour delivery scenarios. In general, the City's system meets the maximum day demand criterion of 6 feet per second (FPS) for transmission main velocity (i.e., the rate at which water flows through the pipelines) and the water pressure criterion of 50 pounds per square inch (PSI). There are a few locations where these criteria are not met, but these discrepancies are minimal and do not adversely affect water service to customers.

Potable water distribution networks have been mostly completed within the City with the exception of annexation areas, for which facilities are planned as part of the project development. Annexation area infrastructure has been conceptually designed and sized with timing identified in a phasing plan linked to development. This infrastructure will be constructed by the developer with design approval and construction oversight by the City. Infrastructure improvements will be made through the typical 20- to 30-year build out of the annexation areas and will include looped transmission and distribution mains to meet the needs to the community.

3.5.5 Pump Stations

The City currently operates four potable water pumping stations:

- The Dual Purpose Pump Station (DPPS) fulfills two functions. It provides the City the ability to fill the North East Storage Reservoirs during off-peak demand periods, and boosts water pressures into higher elevation areas in and adjacent to the Stoneridge Specific Plan area of the City (Pressure Zone 2).
- The Highland Reserve North Pump Station (HRNPS) allows the City to boost water pressures into higher elevation portions of the Highland Reserve North Specific Plan area, also designated as Pressure Zone 5.
- The Pleasant Grove Pump Station was constructed in 2015, and allows more efficient movement of water from Pressure Zone 4 to Pressure Zone 1. Several of the City's groundwater wells are located within Pressure Zone 4, located at a lower hydraulic grade than Pressure Zone R1.
- The PFE Pump Station, located near one of the City's interties with Sacramento Suburban Water District (SSWD), allows for the transfer of water to or from SSWD during an emergency.

Future water storage tanks and pump stations are planned for construction within the West Roseville Specific Plan and the Sierra Vista Specific Plan areas to service customers in the western portion of the City.

3.5.6 Groundwater Wells

The City currently operates six groundwater wells, and has plans to construct ten more. The existing wells are capable of delivering a total of approximately 17,500 acre feet per year (AF/YR) of water supply if run full-time, which is the equivalent of approximately 48 acre-feet per day. With construction of the additional wells, the City's groundwater facilities would allow for delivery of up to 120 acre-feet per day or 43,800 AF/YR if run on a continuous basis. The City's groundwater wells are currently maintained for backup water supply and to improve water supply reliability during drought and emergency conditions. The City is in process of developing its Aquifer Storage and Recovery (ASR) program that would allow storage of surplus surface water in underground aquifers injected through these production wells. All existing wells have ASR injection capability and all future wells are planned to incorporate the same. Groundwater supplies are further discussed in Chapter 6.

There are six wells currently in place and operational. Information about the existing operational wells is summarized in Table 3-4. Proposed wells are discussed in Chapter 6.

Table 3-4. Groundwater Well Facilities

Facility	Install/Rehab Date	Well Depth, feet	Rated Capacity, GPM	Service Zone
Darling Way (Well No. 4)	1958/1999	303	1,000	1
Oakmont (Well No. 5)	1978/1999	360	1,950	1
Diamond Creek (Well No. 6)	2002	323	2,700	4
Woodcreek North Well (Well No. 7)	2008	440	1,800	1
Hayden Parkway (Well No. 8)	2015	520	1,800	4
Blue Oaks Blvd (Well No. 12)	2015	490	1,800	4
Total Groundwater Capacity			11,050	
GPM = gallons per minute				

It is the City's policy that groundwater is only used as water supply in times of shortage (see Chapter 7 for an example). Groundwater wells are currently only used for emergency backup and dry year water supplies.

3.5.7 Interties

The City maintains interties with surrounding jurisdictions for water sharing and transfer opportunities. Most times these are utilized for emergency transfers between agencies for a short duration but they can also be used for long term water sharing arrangements between agencies for a variety of reasons. The current interties are listed in Table 3-5, and further described in the paragraphs that follow.

Table 3-5. Interties with Neighboring Water Suppliers

Intertie Agency	Facility Name	Size, inches
Placer County Water Agency	Stoneridge	12
	5 Star	10
	Highland Park	12
	Pleasant Grove	12
	Industrial	16
	Bianchi Estates	12
San Juan Water District	WTP	12
	Eureka ^(a)	12
	Cavitt Stallman	12
California-American Water Company	Crowder	12
	PFE	24
	Vernon Oaks ^(a)	12
Citrus Heights Water District	Orlando ^(a)	6
	Blossom Hill ^(a)	6
Sacramento Suburban Water District	PFE/North Antelope	24
^(a) Local zone feed only due to zone hydraulic grade line matching. Zone isolation is required to move water between agencies.		

3.5.7.1 Placer County Water Agency (PCWA) Intertie

The City maintains six interties with PCWA with a total capability of delivering 13 MGD. These facilities are designed to be used for wheeling water through the City's service area to PCWA customers and for short-term demand shortage assistance. This capability has been used during water transmission interruptions and for supplemental water to particular areas. In addition, an intertie facility has been designed and constructed that will increase reliability to PCWA customers residing within the City. This facility, located at the Northeast tank site, allows PCWA to meet demands within their service area during peak times of the year.

3.5.7.2 San Juan Water District (SJWD) Intertie

Three interties exist between the City and SJWD. Two interties are capable of delivering a maximum of 2.5 MGD directly into the City's distribution system. The third intertie has the capability of providing up to 10 MGD and is located at the City's water treatment plant. These interties have been used during water plant interruptions and for localized water supply when required.

3.5.7.3 California American Water Company Intertie

Three interties exist between the City and California American Water Company (Cal-Am). The first intertie is used for emergency use within the City, and cannot be relied upon as a continued source of water. The second and third interties are used to wheel PCWA water to the Cal-Am service area adjacent to the City.

3.5.7.4 Citrus Heights Water District Intertie

Two interties exist between the City and Citrus Heights Water District. Due to low operating pressures in adjoining agency's distribution systems these interties are only good for emergency zonal use within the City, and cannot be relied upon as a continued source of water.

3.5.7.5 Sacramento Suburban Water District Intertie

One intertie exists between the City and the SSWD. As part of regional development of conjunctive use programs, 24-inch diameter and 36-inch diameter water lines connect the City and SSWD water service areas. The newly constructed PFE Pump Station allows for water to be transferred from the SSWD service area into the City's water system. The City and SSWD are currently developing a mutual aid agreement for the use of this intertie.

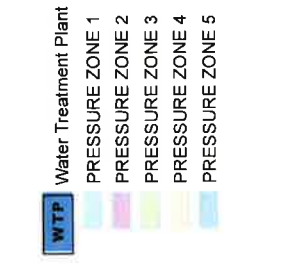
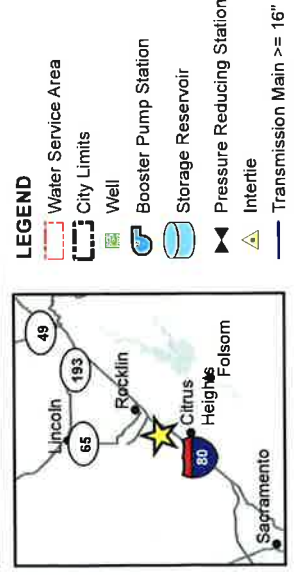
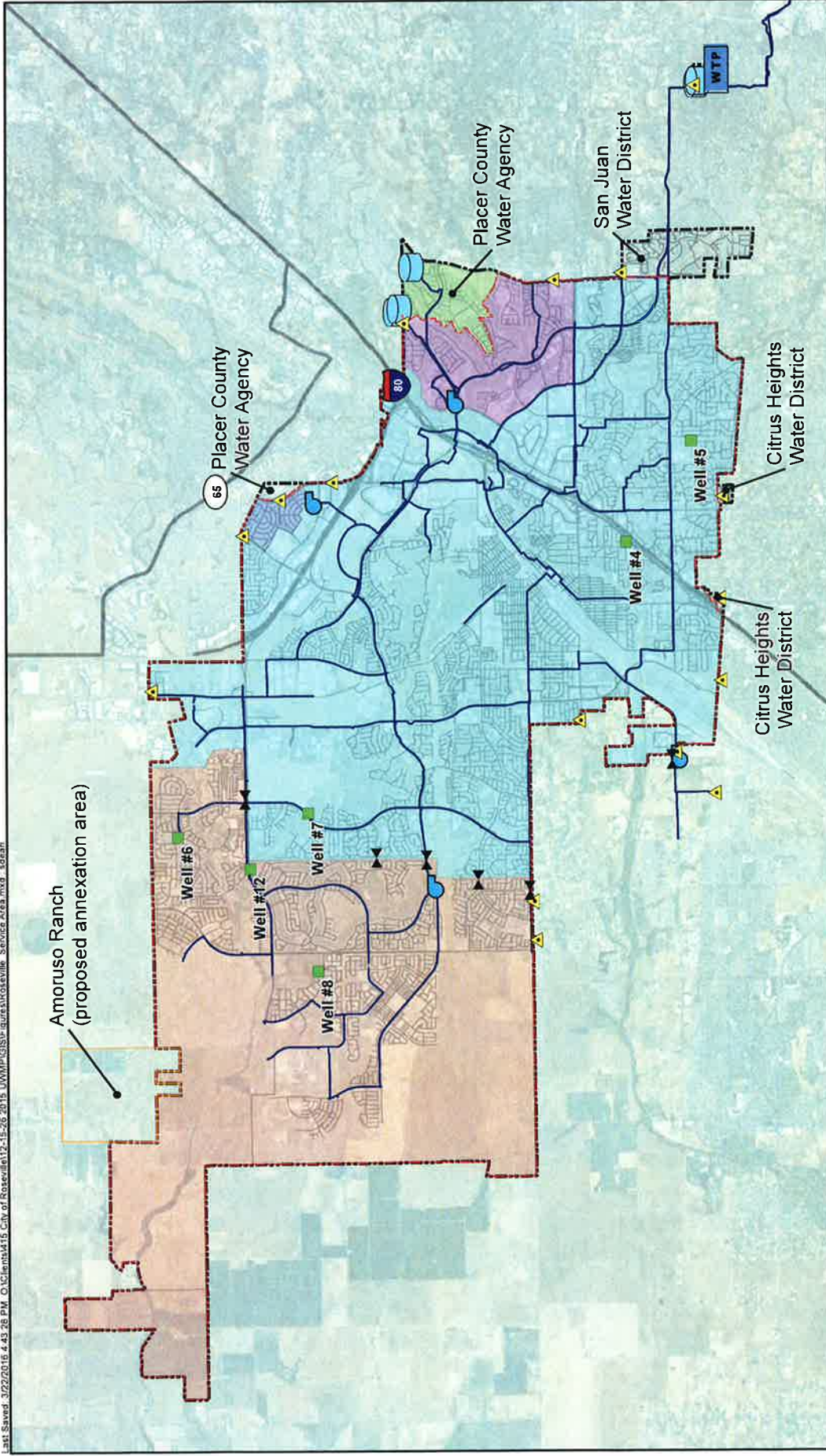


Figure 3-1
City of Roseville
Water Service Area
 City of Roseville
 2015 Urban Water
 Management Plan



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CHAPTER 4

System Water Use



This chapter describes and quantifies the City's past, current, and projected water use. Water demand projections are based on the selected SBX 7-7 water use targets combined with the projected population according to the City's General Plan. Accurately tracking and reporting current water demands allows the City to properly analyze the use of their resources and conduct good resource planning.

4.1 RECYCLED VERSUS POTABLE AND RAW WATER DEMAND

The City provides both potable water and recycled water to customers within its water service area. Potable water is water that is safe to drink and which typically has had various levels of treatment and disinfection. The City purchases raw water supplies from PCWA, USBR, and SJWD and treats it to potable water quality. The City does not currently purchase potable water, but plans to do so in the future.

Recycled water is municipal wastewater that has been treated to a specified quality to enable it to be beneficially used. As discussed in Chapter 6, the City owns and operates two WWTPs that treat wastewater to Title 22 disinfected tertiary standards. This highly treated water is then distributed for landscape irrigation within the City service area, environmental releases, cooling water, and construction use.

Raw water is untreated water that is used in its natural state or with minimal treatment. The City does not deliver raw water to any customers in its service area, however it does deliver 182 AF of raw water to Linda Creek outside of the City's service area. Because this raw water delivery is for environmental purposes and is not considered a potable offset, it has not been included in any of the subsequent tables. Recycled and potable water demands are discussed below.

4.2 WATER USES BY SECTOR

This section describes the City's past, current and projected water use by sector through the year 2040 in five-year increments. Water demand projections are based on the selected SBX 7-7 water use targets combined with the projected population for the service area. Demand projections provide the basis for sizing and staging future water facilities to ensure adequate supply. This section identifies the usage among water use sectors including single-family residential, multi-family residential, commercial, industrial, institutional/governmental, landscape irrigation, agricultural, and others. These classifications were used to analyze current consumption patterns among various types of customers. The City uses the same definitions for each sector as outlined in the DWR 2015 Guidebook:

- **Single-family residential:** A single-family dwelling unit. A lot with a free-standing building containing one dwelling unit that may include a detached secondary dwelling.
- **Multi-family:** Multiple dwelling units contained within one building or several buildings within one complex.
- **Commercial:** A water user that provides or distributes a product or service (CWC 10608.12 (d)).

Chapter 4

System Water Use



- **Industrial:** A water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System (NAICS) code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development (CWC 10608.12 (h)).
- **Institutional (and governmental):** A water user dedicated to public service. This type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions (CWC 10608.12 (i)).
- **Landscape:** Water connections supplying water solely for landscape irrigation. Such landscapes may be associated with multi-family, commercial, industrial, or institutional/governmental sites, but are considered a separate water use sector if the connection is solely for landscape irrigation.
- **Agricultural:** Water used for commercial agricultural irrigation.
- **Other:** Any other water demand that is not adequately described by the water sectors defined above. Unlike previous UWMPs, system water losses are not to be reported in the "Other" category.

The historical water demands by water use sector are reported in Table 4-1.

Table 4-1. Historical Water Use by Water Use Type, 2010

Water Use Type	Volume, AF
Commercial	2,042
Industrial	891
Institutional/Governmental	667
Multi-Family	2,196
Single Family	15,836
Landscape	5,534
Losses	1,195
Other	272
Total	28,633

The City's actual water demands for the year 2015 are reported in Table 4-2. There are no existing or projected use for saline barriers, conjunctive use, or raw water within the City's potable water service area.

Table 4-2. Retail: Demands for Potable and Raw Water – Actual (DWR Table 4-1)

Use Type	2015 Actual		
	Additional Description (as needed)	Level of Treatment When Delivered	Volume
Commercial	Including Non-Metered	Drinking Water	1,930
Industrial	Including Non-Metered	Drinking Water	934
Institutional/Governmental	Including Non-Metered	Drinking Water	561
Multi-Family	Including Non-Metered	Drinking Water	1,464
Single Family	Including Non-Metered	Drinking Water	11,680
Landscape	Including Non-Metered	Drinking Water	4,152
Losses	Unbilled unmetered	Drinking Water	32
Losses		Drinking Water	2,128
TOTAL			22,881
NOTES: All volumes are in AF. The City was under a state mandate to conserve water due to statewide drought conditions during 2015. The City conserved 32.9% during calendar year 2015, compared to calendar year 2013.			

The water use projections for 2020 through 2040 are based on land use-based water demand projections documented in the City's General Plan. The projected water demand through the year 2040 is reported in Table 4-3.

Table 4-3. Retail: Demands for Potable and Raw Water – Projected (DWR Table 4-2)

Use Type	Additional Description (as needed)	Projected Water Use Report To the Extent that Records are Available				
		2020	2025	2030	2035	2040-opt
Commercial		3,402	3,588	3,818	4,041	4,219
Industrial		1,699	1,792	1,907	2,018	2,107
Institutional/Governmental		1,001	1,056	1,123	1,189	1,241
Multi-Family		2,399	2,530	2,692	2,849	2,974
Single Family		21,262	22,425	23,862	25,254	26,365
Landscape		7,559	7,973	8,483	8,978	9,373
Losses		3,732	3,936	4,189	4,433	4,628
TOTAL		41,054	43,300	46,074	48,762	50,907
NOTES: All volumes are in AF.						

The actual and projected water demands reported in Tables 4-2 and 4-3, and the recycled water demands reported in Table 6-6 (see Chapter 6), are summarized in Table 4-4.

Table 4-4. Retail: Total Water Demands (DWR Table 4-3)

	2015	2020	2025	2030	2035	2040 (opt)
Potable and Raw Water <i>From Tables 4-1 and 4-2</i>	22,881	41,054	43,300	46,074	48,762	50,907
Recycled Water Demand* <i>From Table 6-4</i>	4,060	4,421	4,791	5,259	5,643	5,958
TOTAL WATER DEMAND	26,941	45,475	48,091	51,333	54,405	56,865
<i>*Recycled water demand fields will be blank until Table 6-4 is complete.</i>						
NOTES: All volumes are in AF. Table references refer to DWR table numbers.						

4.3 DISTRIBUTION SYSTEM WATER LOSSES

System losses are the difference between the actual volume of water treated and delivered into the distribution system and the actual metered consumption. Such apparent losses are always present in a water system due to pipe leaks, unauthorized connections or use; faulty meters; unmetered services such as fire protection and training, and system and street flushing. The water losses in 2015 comprised about 9 percent of the total water produced. Water losses are characterized using the American Water Works Association (AWWA) Water Audit Method (Appendix E).

The system losses as the difference between the annual production (including both treated and untreated water supplies) and annual sales for the most recent 12 month period available are summarized in Table 4-5. The most recent 12 month period began on January 2015.

Table 4-5. Retail: 12 Month Water Loss Audit Reporting (DWR Table 4-4)

Reporting Period Start Date	Volume of Water Loss*
01/2015	2,128
<i>* Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.</i>	
NOTES: All volumes are in AF. Does not include unbilled unmetered water.	

4.4 ESTIMATING FUTURE WATER SAVINGS

As indicated in Table 4-6, the City has included estimation of future water savings in its 2015 UWMP. Passive water savings were calculated in the Water Demand Analysis. This section includes a summary of estimated water savings from passive savings such as codes, standards, ordinances and transportation and land use plans, including the City's Water Efficient Landscape Ordinance and the California Green Building Code. Though future job and population growth

would be expected to increase water demand, passive savings are projected to decrease per capita water use for future customers compared to historical customers.

Reduction in water demand across all customer sectors is necessary to achieve the conservation goals established by legislation and laid out in this plan. Although the Demand Management Measures (DMMs) identified in Chapter 9 serve as the primary catalyst for water use reduction, the following reduction strategies have been used when projecting future water demands.

Table 4-6. Retail Only: Inclusion in Water Use Projections (DWR Table 4-5)

Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook)	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 4.4
Are Lower Income Residential Demands Included In Projections?	Yes

4.4.1 Compliance with Water Efficient Landscape Requirements

New development areas are required to reduce landscape area and calculated water demands as part of the process for land use approval. As required by the California Code of Regulations Title 23, Division 2 Chapter 2.7 Model Water Efficient Landscape Ordinance (MWELO), the City has the ability to adopt the State standards or implement even more stringent standards. The City recently updated its standards, which also outline additional requirements for Water Efficient Landscaping. The City's landscape standards can be found in Chapter 14.18 of the Roseville Municipal Code (available via the City's website).

4.4.2 Increased Utilization of Recycled Water

The City requires recycled water to be used in most land use development areas currently being planned, and for construction water during a Stage 3 Drought (see Chapter 8). Future required use includes landscaping associated with commercial, industrial, multi-family, parks, and transportation corridors. Guidelines for Recycled Water Service are outlined in Roseville Municipal Code Chapter 14.17 (available via the City's website).

4.4.3 Implementation of Low Water Use Fixtures

Section 16.04.100 (a) of the Roseville Municipal Code (available via the City's website) states that: "The 2013 California Building Standards Code is hereby adopted by the City of Roseville Municipal Code."

In addition to the requirements outlined in the California Building Code, the City also holds developers to even more stringent standards, including installation of High Efficiency Toilets (HET) and re-circulating hot water systems.

4.5 WATER USE FOR LOWER INCOME HOUSEHOLDS

As shown in Table 4-6, water needs for low-income families are included in the potable water demand projections shown in Table 4-3. Future housing needs for low income families were derived from projections provided by the Regional Housing Needs Allocation Plan (RH NAP) (<http://www.sacog.org/post/key-documents-2013-21-rhna>), adopted by the Sacramento Area Council of Governments (SACOG) in 2012.

Low income water demands were then projected by multiplying the projected number of single family and multi-family dwelling units by water demand factors (288 gallons per day per dwelling unit (GPD/DU) for multi-family dwelling units and 430 GPD/DU for single family dwelling units). The resulting projected water demand for projected low-income dwelling units is shown in Table 4-7.

Table 4-7. Projected Water Demand for Future Low-Income Households, AFY^(a)

Water Use Type	2020	2025	2030	2035	2040
Multi-Family Residential	864	1,020	1,102	1,169	1,237
Single Family Residential	283	334	361	383	405
Total	1,147	1,355	1,463	1,553	1,642
^(a) Based on projected number of new low-income dwelling units multiplied by the water demand factors of 288 GPD/DU for multi-family residential units and 430 GPD/DU for single family dwelling units.					

4.6 CLIMATE CHANGE

DWR 2015 Guidebook suggests that urban water suppliers consider the potential effects related to climate change in their 2015 UWMPs, though it should be noted that there are currently no specific requirements related to addressing the potential impacts of climate change. Because the City has not completed any studies regarding the impacts of climate change on system water demands, the City has decided to not complete this section for this 2015 UWMP.

CHAPTER 5

SB X7-7 Baselines and Targets



In November 2009, Senate Bill X7-7 (SB X7-7), The Water Conservation Act of 2009, was signed into law by Governor Arnold Schwarzenegger as part of a comprehensive water legislation package. The Water Conservation Act addresses both urban and agricultural water conservation. The legislation sets a goal of achieving a 20 percent statewide reduction in urban per capita water use by the year 2020 (i.e., “20 by 2020”), and directs urban retail water suppliers to establish an “interim” per capita water use target to be met by 2015 and a “final” per capita water use target to be met by 2020.

The City’s compliance with SB X7-7 was first addressed in the City’s 2010 UWMP. The City’s baseline per capita water use was determined, and urban water use targets for 2015 and 2020 were established and adopted. SB X7-7 included a provision that an urban water supplier may update its 2020 urban water use target in its 2015 UWMP, and may use a different target method than was used in 2010. Also, the SB X7-7 methodologies developed by DWR in 2011 noted that water suppliers may revise population estimates for baseline years when the 2010 Census information became available (as described below, the 2010 Census data was not finalized until 2012).

The DWR 2015 Guidebook indicates that there were significant discrepancies between the California Department of Finance (CDoF) estimated 2010 population (based on 2000 U.S. Census data) and the actual 2010 population (based on 2010 U.S. Census data). Therefore, if a water supplier did not use 2010 Census data for their baseline population calculations in the 2010 UWMP, DWR has determined that these water suppliers must recalculate their baseline population for the 2015 UWMP using 2000 and 2010 Census data, and baseline and 2015 and 2020 urban water use targets must be modified accordingly.

This chapter provides a review and update of the City’s baseline per capita water use, 2015 interim per capita water use target, and 2020 final per capita water use target in accordance with the requirements described in the DWR 2015 Guidebook and based on the 2010 Census population data. The City calculated baselines and targets on an individual reporting basis in accordance with SB X7-7 legislation requirements and *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use* (DWR, 2016). The City has achieved compliance with its 2015 interim target, as discussed below, and is well positioned to achieve its 2020 final target. Regional Alliance baselines and targets are discussed in Section 5.8.

The SB X7-7 Compliance and Verification Forms are included in Appendix F.

5.1 UPDATING CALCULATIONS FROM 2010 UWMP

CWC 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).

Methodologies DWR 2011, Methodology 2 Service Area Population Page 27 - Water suppliers may revise population estimates for baseline years between 2000 and 2010 when 2010 census information becomes available. DWR will examine discrepancy between the actual population estimate and DOF’s projections for 2010; if significant discrepancies are discovered, DWR may require some or all suppliers to update their baseline population estimates.

DWR 2015 Guidebook, Required Use of 2010 U.S. Census Data page 5-5 – if an agency did not use 2010 Census data for their baseline population calculations in the 2010 UWMP...DWR has determined that these agencies must recalculate their baseline populations 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.

Chapter 5

SB X7-7 Baselines and Targets



Population data from the 2010 United States Census were not made available until 2012, after the City submitted its 2010 UWMP. Therefore, the City updated population, baselines, and targets for this 2015 UWMP to reflect 2010 Census data. The following sections describe these updates.

5.2 BASELINE PERIODS

SB X7-7 requires each urban water retailer to determine their baseline daily per capita water use, measured in gallons per capita per day (Baseline GPCD), over a 10-year or 15-year baseline period. The 10-year baseline period is defined as a continuous 10-year period ending no earlier than December 31, 2004 and no later than December 31, 2010. SB X7-7 also defines that for those urban water retailers that met at least 10 percent of their 2008 water demand using recycled water, the urban water retailer can extend the Baseline GPCD calculation for a maximum of a continuous 15-year baseline period, ending no earlier than December 31, 2004 and no later than December 31, 2010. In 2008, the City met 8.76 percent of demand using recycled water. Therefore, the City must use a 10-year baseline period.

SB X7-7 also requires each urban water retailer to determine a 5-year baseline per capita water demand, which DWR calls the Target Confirmation, calculated over a continuous 5-year period ending no earlier than December 31, 2007 and no later than December 31, 2010.

Based on these requirements, the City has selected the following baseline periods:

- 10-year Baseline Period: 1994 - 2005
- 5-year Baseline Period: 2003 - 2007

These baseline periods are listed in SB X7-7 Table 1 in Appendix F. It should be noted that the 10-year and 5-year periods are the same as reported in the City's 2010 UWMP.

5.3 SERVICE AREA POPULATION

DWR 2015 Guidebook, Required Use of 2010 U.S. Census Data page 5-5 – if an agency did not use 2010 Census data for their baseline population calculations in the 2010 UWMP...DWR has determined that these agencies must recalculate their baseline populations 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.

This section includes a discussion of the City's service area population including 2000 and 2010 U.S. Census data. Population reported in the City's 2010 UWMP did not include 2010 U.S. Census data because the full Census data set was not available until 2012.

The CDoF uses U.S. Census data, combined with changes to the housing stock, estimated occupancy of housing units, and the number of persons per household to estimate annual population within jurisdictional boundaries. CDoF population estimates, corrected to account for 1990, 2000, and 2010 Census data, were used to estimate service area population. The service area population is within 5 percent of the City population, and therefore the City population can be used as a surrogate for the service area population. Because the City knows the approximate population of the neighborhoods inside City limits, but outside the City water service area, those

populations were subtracted from the CDoF population estimates. The adjusted population estimate is included in the SB X7-7 Verification Tables in Appendix F.

5.4 GROSS WATER USE

Annual gross water use is the water that enters the City's distribution system over a 12-month period (calendar year) with certain exclusions. This section discusses the City's annual gross water use for each year in the baseline periods, as well as 2015, in accordance with Methodology 1: Gross Water of DWR's *Methodologies* document.

CWC 10608.12 (g) "Gross Water Use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

- (1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier*
- (2) The net volume of water that the urban retail water supplier places into long term storage*
- (3) The volume of water the urban retail water supplier conveys for use by another urban water supplier*
- (4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.*

California Code of Regulations Title 23 Division 2 Chapter 5.1 Article Section 596 (a) An urban retail water supplier that has a substantial percentage of industrial water use in its service area is eligible to exclude the process water use of existing industrial water customers from the calculation of its gross water use to avoid a disproportionate burden on another customer sector

Annual gross water use for the baseline periods and 2015 are summarized in Appendix F. The values reported in Appendix F are the same as documented in the City's 2010 UWMP.

5.5 BASELINE DAILY PER CAPITA WATER USE

As indicated above, daily per capita water use is reported in gallons per capita per day (GPCD). Annual gross water use is divided by annual service area population to calculate the annual per capita water use for each year in the baseline periods. As discussed above, the City has used updated population data in this 2015 UWMP. The City's baseline daily per capita use has been calculated as follows:

- 10-year Base Daily Per Capita Water Use
 - 309 GPCD (for the period from 1995 to 2004)
 - This value is the same as the value calculated in the 2010 UWMP (309 GPCD)
- 5-year Base Daily Per Capita Water Use
 - 295 GPCD (for the period from 2003 to 2007)
 - This value is 3 GPCD less than the value calculated in the 2010 UWMP (298 GPCD), with the change attributed to updated CDoF population estimates following the 2010 Census.

These values are shown in SB X7-7 Table 5 in Appendix F.

Chapter 5

SB X7-7 Baselines and Targets



5.6 2015 AND 2020 TARGETS

SB X7-7 requires a state-wide average 20 percent reduction of urban per capita water use by the year 2020. Therefore, the City must set an interim (2015) water use target and a final (2020) water use target using one of four methods defined by SB X7-7 and DWR. Three of these methods are defined in Water Code Section 10608.20(a)(1), and the fourth method was later developed by DWR. The 2020 water use target is calculated using one of the following four methods:

- Method 1: 80 percent of the City's base daily per capita water use;
- Method 2: Per capita daily water use estimated using the sum of performance standards applied to indoor residential use; landscaped area water use; and commercial, industrial, and institutional uses;
- Method 3: 95 percent of the applicable State hydrologic region target as stated in the State's Draft 20x2020 Water Conservation Plan (April 30, 2009); or
- Method 4: An approach that considers the water conservation potential from (1) indoor residential savings, (2) metering savings, (3) commercial, industrial and institutional savings, and (4) landscape and water loss savings.

Analysis of Methods 1 and 3 were completed. The calculated 2020 target using Method 1 is 247 GPCD. The 2020 target using Method 3 is 167 GPCD (95 percent of Hydrologic Region 5-Sacramento River 2020 Target of 176 GPCD). Methods 2 and 4 require specific data which were not available, so those two methods were not considered. Target Method 1 results in the highest allowable SB X7-7 final (2020) target (247 GPCD by 2020), and would therefore be most favorable to the City.

The 2015 interim targets for each of the target methods are calculated based on the midpoint of the City's 10-year Base Daily Per Capita Water Use and the 2020 targets calculated for each of the respective target methods. The 2015 interim 2015 target is the midpoint between the City's 10-Year Base Daily Per Capita Water Use (309 GPCD) and the final 2020 target (247 GPCD). Therefore, the City's interim 2015 target is 278 GPCD.

Urban water suppliers must verify that their 2020 final water use target is at least a 5 percent reduction from the 5-year baseline GPCD. As shown in SB X7-7 Table 7F in Appendix F, the City's maximum 2020 target is 280 GPCD (95 percent of the City's 5-year base daily per capita water use of 295 GPCD). The City's Method 1 2020 target of 247 GPCD complies with the minimum reduction.

The City's interim and final targets are summarized in Table 5-1.

Chapter 5

SB X7-7 Baselines and Targets



Table 5-1. Baselines and Targets Summary (DWR Table 5-1)

Baseline Period	Start Year	End Year	Average Baseline GPCD*	2015 Interim Target *	Confirmed 2020 Target*
10-15 year	1995	2004	309	278	247
5 Year	2003	2007	295		
*All values are in Gallons per Capita per Day (GPCD)					

For this 2015 UWMP, the City has selected Target Method 1, as was used in the 2010 UWMP. The confirmed final 2020 target of 247 GPCD is the same as the final 2020 target included in the 2010 UWMP. Therefore, the confirmed interim 2015 target of 278 GPCD is also the same as the interim 2015 target reported in the 2010 UWMP. The City understands that the target method and resulting targets may not be changed in any amendments to the 2015 UWMP or in the 2020 UWMP.

5.7 2015 COMPLIANCE DAILY PER CAPITA WATER USE (GPCD)

The City has calculated its actual 2015 water use for the 2015 calendar year in accordance with Methodology 3 of DWR's *Methodologies* document. As shown in Table 5-2, urban per capita water use in 2015 was 164 GPCD, which is below the 2015 interim water use target of 278 GPCD. Therefore, the City has met its interim 2015 water use target. The complete set of SB X7-7 verification tables used to document this compliance is included in Appendix F.

Table 5-2. 2015 Compliance (DWR Table 5-2)

Actual 2015 GPCD*	2015 Interim Target GPCD*	Optional Adjustments to 2015 GPCD 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*		
165	278	0	0	0	0	165	165	Yes
*All values are in Gallons per Capita per Day (GPCD)								

As detailed in DWR's *Methodologies* document, there are allowable adjustments that can be made to an agency's gross water use in 2015 for unusual weather, land use changes, or extraordinary institutional water use. The City has elected not to make the adjustments allowed by Water Code Section 10608.24 because these exceptions are not needed to demonstrate compliance with SB X7-7.

5.8 REGIONAL ALLIANCE

The City has chosen to comply with the requirements of SB X7-7 on an individual basis. The City has elected not to participate in a regional alliance.

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CHAPTER 6

System Supplies



This chapter describes the sources of water available to the City. These sources include supplies from other agencies, groundwater, surface water, storm water, wastewater and recycled water, desalinated water, and exchanges or transfers. The origin of the water supply, water quality, and quantity issues, as well as the anticipated actions to meet future demands for each water source are discussed.

6.1 PURCHASED OR IMPORTED WATER

Folsom Lake has been the primary source of water for the City since 1971. Through the Folsom Lake Municipal and Industrial Intake, the City receives untreated Central Valley Project (CVP) water from the U.S. Bureau of Reclamation (USBR), and untreated water from PCWA. Additionally, through this same delivery point, the City receives a normal/wet year untreated water supply from SJWD. The untreated surface water is delivered to the City's Barton Road Water Treatment Plant. The City is working with PCWA to receive treated water in the future.

The City's three untreated surface water contract entitlements for American River water total 66,000 acre-feet per year (AF/YR), as described below. Additionally, the City, as a member of the Sacramento Water Forum, is a signatory to the Water Forum Agreement (WFA) and has agreed to limit its diversions from the upper American River to 58,900 AF/YR during Normal/Wet Years and to between 54,900 AF/YR and 39,800 AF/YR in Drier and Driest Years. Irrespective of the amount of water used, the City resolves that "By instituting programs to conserve water, it abandons no right, title or interest in or to any city water rights, contractual entitlements or any appurtenant rights necessary to exercise such water rights or entitlements," as described by Resolution No. 09-64, Declaring an Intent to Retain Control of Conserved Water (Appendix G).

6.1.1 Other Available Water Purchases

The City may also purchase Section 215 water from the USBR when available, but has not done so at this time. Section 215 water is water the Bureau releases from Folsom Lake that is in excess of the entitlements and rights of downstream users, and is usually only available during winter months.

6.2 GROUNDWATER

The City currently maintains six groundwater wells for emergency and dry year supply. All wells possess ASR capability. This allows the City to store potable water directly in the aquifer, allowing it to be withdrawn for use at a later time.

6.2.1 Groundwater Basin Description

The City is located over the North American sub-basin of the Sacramento Valley Groundwater Basin. The North American sub-basin (DWR Groundwater Basin Number 5-21.64) is located in the eastern central portion of the Sacramento Groundwater Basin, encompassing portions of Sutter, Placer, and Sacramento Counties. As of 2015, the Basin is listed by DWR as neither adjudicated nor in critical overdraft condition.

Groundwater elevation levels in the basin along the Placer/Sacramento County line declined at a rate of 1 to 1.5 feet per year through the mid 1990's. Some of the largest decreases have occurred in the area of the former McClellan Air Force Base. From 1995, groundwater elevations were maintained and the declining elevation trend was dampened due to groundwater management activities stemming from the Water Forum Agreement restraining further increases in groundwater pumping and implementation of in-lieu banking in the region. Groundwater levels in Sutter and northern Placer counties generally have remained stable, although some wells in southern Sutter County have experienced declines.

In addition, the basin has historically been pumped by agricultural and urban users. Recently, agricultural land has been and is being developed and converted to urban uses. With this conversion, the agricultural groundwater pumping demand will decrease. If the agricultural groundwater pumping demand is not replaced by other pumping demands, it is anticipated that the total groundwater pumping demands throughout the basin will decrease, potentially increasing the volume of groundwater stored in the groundwater basin.

6.2.2 Groundwater Management

The City is participating in local groundwater management through the Western Placer County Groundwater Management Plan and through the provisions of the Sustainable Groundwater Management Act. These are discussed below.

6.2.2.1 Western Placer County Groundwater Management Plan

A Groundwater Management Plan (GMP) was completed in November of 2007 in cooperation with PCWA, City of Lincoln, and California American Water. The GMP is available through the PCWA website: (https://www.pcwa.net/files/docs/enviro/WPCGMP_Groundwater_Management_Plan_07.pdf).

6.2.2.2 Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act of 2014 (SGMA), a three-bill legislative package composed of AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley), was passed in September 2014. The legislation provides a framework for sustainable management of groundwater supplies by local authorities, with a limited role for state intervention when necessary to protect the resource. The legislation lays out a process and a timeline for local authorities to achieve sustainable management of groundwater basins. It also provides tools, authorities and deadlines to take the necessary steps to achieve the goal. For local agencies involved in implementation, the requirements are significant and can be expected to take years to accomplish. The State Water Resources Control Board may intervene if local agencies do not form a Groundwater Sustainability Agency (GSA) and/or fail to adopt and implement a Groundwater Sustainability Plan (GSP).

The SGMA implementation steps and deadlines are shown in Table 6-1.

Table 6-1. Sustainable Groundwater Management Act Implementation Steps and Deadlines

Implementation Step	Implementation Measure	Deadlines
Step One	Local agencies must form local GSAs within two years	June 30, 2017
Step Two	Agencies in basins deemed high- or medium-priority must adopt GSPs within five to seven years, depending on whether a basin is in critical overdraft	- January 31, 2020 for critically overdrafted basins - January 31, 2022 for high- and medium-priority basins not currently in overdraft
Step Three	Once plans are in place, local agencies have 20 years to fully implement them and achieve the sustainability goal	- January 31, 2040 for critically overdrafted basins - January 31, 2042 for high- and medium-priority basins not currently in overdraft

SGMA applies to basins or subbasins designated by the DWR as high or medium priority basins, based on a statewide ranking that uses criteria including population and extent of irrigated agriculture dependent on groundwater. The final Basin Prioritization findings indicate that 127 of California's 515 groundwater basins and subbasins are high and medium priority basins. These high and medium priority basins account for 96 percent of California's annual groundwater pumping and supply 88 percent of the population which resides over the groundwater basins. The ranking for the North American sub-basin of the Sacramento Valley groundwater basin is shown in Table 6-2. As shown, the Sacramento Valley basin has been ranked as a high priority basin.

Table 6-2. Groundwater Basin Prioritization for Sustainable Groundwater Management Act^(a)

Rank ^(b)	Basin Number	Basin Name	Overall Basin Ranking Score	Overall Basin Priority
24	5-21.64	Sacramento Valley/North American Sub-basin	22.5	High
^(a) CASGEM Groundwater Basin Prioritization Results, run version May 26, 2014.				
^(b) Out of a total of 515 basins, of which 127 were high- or medium-priority basins.				

Although not yet finalized, it is believed that Placer County, the City of Roseville, The City of Lincoln, Placer County Water Agency, and the California American Water Company will join and act as the GSA for the development of a GSP for a portion of the North American Sub-basin of the Sacramento Valley groundwater basin. Several of the activities, including adoption of regulations for GSPs, are not expected to be finalized until June 30, 2016. Therefore, new requirements for groundwater management under SGMA do not apply to this 2015 UWMP, but will be addressed in the 2020 UWMP.

6.2.3 Historical Groundwater Production

Groundwater use is not a part of normal condition water supplies for the City. In support of the ASR program development, however, groundwater was extracted and delivered to customers within the service area. This was not a normal supply condition but driven by the ASR demonstration project as opposed to shortages requiring the supplemental water. A summary of the amount of groundwater pumped by the City for the past five years is provided in Table 6-3.

Table 6-3. Retail: Groundwater Volume Pumped (DWR Table 6-1)

Groundwater Type	Location or Basin Name	2011	2012	2013	2014	2015
Alluvial Basin	Sacramento Valley Groundwater Basin - North American Subbasin	0	-1773	-371	296	6
TOTAL		0	(1,773)	(371)	296	6
NOTES: Volumes are in AF. Numbers represent net groundwater pumped out of ASR well and into the distribution system. A negative number represents an injection into an ASR well from the distribution system. Some values, including the 6 AF in 2015, can be attributed to ASR maintenance, or for commission of new pump station facilities.						

6.2.4 Aquifer Storage and Recovery (ASR)

With an objective of creating a diverse water system to meet the needs to the community, the City has invested in development of an ASR program that will utilize constructed water infrastructure along with existing water supplies to increase reliability. ASR wells include features that allow injection of surface water from the distribution system into the groundwater aquifer. This allows the City to take surface water sources that are available, treat it and then inject it into the groundwater aquifer for later use.

Water availability for ASR could be from unused allocations consistent with the Water Forum Agreement diversion limitations. In addition, during wet times, Section 215 flood control spill water may also be available. Since flood control spill does not usually correlate with peak demand, banking water through ASR provides an opportunity to capture this water for use when needed. These operations may result in water diversions in excess of customer demands but stored for later use.

In 2013, the City received an operational permit from the Central Valley Regional Water Quality Control Board for the ASR program.

6.3 SURFACE WATER

Although the City's water supplies are technically surface water, it is not considered self-supplied, and is therefore described above in Section 6.1, Purchased or Imported Water.

6.4 STORMWATER

The City does not currently employ any active storm water recovery measures, and does not have plans to do so.

6.5 WASTEWATER AND RECYCLED WATER

The City currently operates two regional wastewater treatment facilities that treat wastewater flow collected from the City, South Placer Municipal Utilities District, and some areas of Placer County. This section provides information on the wastewater and its current and potential reuse as a recycled water resource.

6.5.1 Recycled Water Coordination

The City regards recycled water as a valuable resource that is integrated into the City's overall water supply portfolio. In preparing this UWMP, the City has coordinated its recycled water planning with its regional wastewater partners, including Placer County and South Placer Municipal Utility District.

6.5.2 Wastewater Collection, Treatment, and Disposal

The City, the South Placer Municipal Utility District (SPMUD), and Placer County are regional partners in the South Placer Wastewater Authority (SPWA). The SPWA was created in 2000 to oversee policy for funding regional wastewater and recycled water infrastructure.

The wastewater collection facilities within the City's service area are maintained by the City. The wastewater collection facilities outside of the City's service area are maintained by the other SPWA agencies (Placer County and South Placer Municipal Utility District). Wastewater outside of the City's service area but within the 2005 SPWA Service Area Boundary (SAB) is conveyed through trunk sewers to the City's wastewater treatment facilities located within the City limits. Metering stations are located at the City's service area boundaries to account for the wastewater entering the City's collection system originating from the Placer County and SPMUD collection areas.

The City owns and operates two regional wastewater treatment facilities on behalf of the regional partners. These treatment facilities are the Dry Creek Wastewater Treatment Plant (Dry Creek WWTP) and the Pleasant Grove Wastewater Treatment Plant (Pleasant Grove WWTP). Both plants produce a Title 22 quality effluent that meets the requirements for "full unrestricted reuse" that is available for recycled water applications and discharge of disinfected tertiary treated effluent to nearby creeks.

As their names imply, the Dry Creek WWTP discharges to Dry Creek while the Pleasant Grove WWTP discharges to Pleasant Grove Creek. The two wastewater treatment plants serve an area that is larger than the City boundaries. The SPWA 2005 SAB is shown in Figure 6-1.

The Dry Creek WWTP produces disinfected tertiary-level wastewater treatment through the process of screening, grit removal, primary clarification, aeration, nitrification and denitrification, secondary clarification, filtration, and ultraviolet disinfection. Disinfected tertiary treated

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System Supplies



wastewater from the Dry Creek WWTP meets Title 22 regulations for full, unrestricted use. The current (2015) average dry weather flow (ADWF) is approximately 7.7 MGD, of which approximately 5 MGD comes from the City of Roseville. The plant is currently authorized to discharge up to 18 MGD ADWF into Dry Creek under National Pollutant Discharge Elimination System (NPDES) permit No. CA0079502 adopted on March 28, 2014. The Dry Creek WWTP currently (2015) produces 1,173 AF/YR of recycled water that is used within the City's water service area for landscape irrigation, construction uses, and cooling water makeup.

The Pleasant Grove WWTP currently (2015) treats approximately 6.4 MGD ADWF with approximately 5 MGD coming from the City of Roseville. The Pleasant Grove WWTP produces disinfected tertiary-level treatment through the process of screening, grit removal, extended aeration, nitrification and denitrification, secondary clarification, filtration, and either chlorination (for recycled water) or ultraviolet disinfection (for discharge to Pleasant Grove Creek). Chlorine disinfected tertiary treated wastewater from the Pleasant Grove WWTP meets Title 22 regulations for full, unrestricted use. The Pleasant Grove WWTP is currently authorized to discharge disinfected treated effluent into Pleasant Grove Creek under the NPDES Permit No. CA0084573 adopted on March 28, 2014. Under this permit the Pleasant Grove WWTP can discharge an ADWF of 12 MGD increasing to a permitted ADWF discharge of 15 MGD upon completion of additional treatment facilities. The Pleasant Grove WWTP currently (2015) produces 2,094 AF/YR of recycled water that is used within the City's service area boundary for irrigation and construction uses.

As described above, both treatment plants are regional wastewater facilities and as such, wastewater is generated both inside of and outside of the City from a combination of residential and non-residential sources. A summary of the volume of wastewater processed at and discharged from each of the City's wastewater treatment plants in 2015 is provided in Table 6-4 and Table 6-5.

Table 6-4. Retail: Wastewater Collected Within Service Area in 2015 (DWR Table 6-2)

100	Percentage of 2015 service area covered by wastewater collection system <i>(optional)</i>					
100	Percentage of 2015 service area population covered by wastewater collection system <i>(optional)</i>					
Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	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?	Is WWTP Operation Contracted to a Third Party? <i>(optional)</i>
City of Roseville	Estimated	4,728	City of Roseville	Pleasant Grove WWTP	Yes	No
City of Roseville	Estimated	5,940	City of Roseville	Dry Creek WWTP	Yes	No
Total Wastewater Collected from Service Area in 2015:		10,668				
NOTES: Volumes are in AF. City of Roseville manages wastewater collection within the City limits. Other member agencies of the South Placer Wastewater Authority manage wastewater collection in their respective jurisdictions.						

**Table 6-5. Retail: Wastewater Treatment and Discharge Within Service Area in 2015
(DWR Table 6-3)**

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number (optional)	Method of Disposal	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level	2015 volumes			
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
Pleasant Grove WWTP	Pleasant Grove Creek	Creek		River or creek outfall	Yes	Tertiary	7,504	5,410	2,094	0
Dry Creek WWTP	Dry Creek	Creek		River or creek outfall	Yes	Tertiary	9,428	7,135	1,966	327
Total							16,932	12,545	4,060	327

NOTES: All volumes are in AF. Volume delivered outside service area is to the Morgan Creek Golf Course. Of the 5,410 AF discharged from Pleasant Grove WWTP, 4,480 AF is a required discharge, and is therefore not available for other uses.

6.5.3 Recycled Water System

As indicated above, the City treats wastewater at its Dry Creek and Pleasant Grove WWTPs to Title 22 disinfected tertiary standards and distributes it for landscape irrigation, golf course irrigation, construction uses, and to provide cooling water for the Roseville Energy Park within the City water service area. Recycled water is also conveyed outside the City water service area for golf course irrigation.

The City has prepared the 2009 Updated South Placer Regional Wastewater and Recycled Water Systems Evaluation Report (Appendix H), which delineates the 2005 SAB and provides baseline and projected characterizations of its regional wastewater and recycled water systems.

The Systems Evaluation report was updated in part to assist in the ongoing expansion of a regional water recycling system. The goal of utilizing recycled water supplies is to promote responsible water supply management. Beneficial reuse of available disinfected tertiary treated Title 22 recycled water allows surface water and groundwater supplies be applied to potable uses.

All agency elements for a reuse program within the City boundary, including land planning, development, wastewater treatment, and water supply, are all part of the City of Roseville government organization.

6.5.4 Recycled Water Beneficial Uses

The City's recycled water program predominately serves landscape irrigation customers. The City currently delivers recycled water to four golf courses, several parks, two schools, and several miles of streetscape for landscape irrigation within the City's potable water service area, plus one golf course (Morgan Creek Golf Course) outside of the City's potable water service area. The City also delivers recycled water to the Roseville Energy Park for industrial cooling, and discharges flow to Dry Creek, as described below. Landscapes at both regional treatment plants also use recycled water for irrigation purposes.

The current and projected direct beneficial uses of recycled water in the City's water service area are shown in Table 6-6.

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

Name of Agency Producing (Treating) the Recycled Water:		City of Roseville						
Name of Agency Operating the Recycled Water Distribution System:		City of Roseville						
Supplemental Water Added in 2015		No						
Source of 2015 Supplemental Water								
Beneficial Use Type	General Description of 2015 Uses	Level of Treatment	2015	2020	2025	2030	2035	2040 (opt)
Agricultural irrigation		Tertiary	0	0	0	0	0	0
Landscape irrigation (excludes golf courses)		Tertiary	1,562	1,923	2,293	2,761	3,145	3,460
Golf course irrigation	Only golf courses within potable water service area	Tertiary	1,378	1,378	1,378	1,378	1,378	1,378
Commercial use		Tertiary	0	0	0	0	0	0
Industrial use	Roseville Energy Park Cooling Water.	Tertiary	1,120	1,120	1,120	1,120	1,120	1,120
Geothermal and other energy production		Tertiary	0	0	0	0	0	0
Seawater intrusion barrier		Tertiary	0	0	0	0	0	0
Recreational impoundment		Tertiary	0	0	0	0	0	0
Wetlands or wildlife habitat		Tertiary	0	0	0	0	0	0
Groundwater recharge (IPR) *		Tertiary	0	0	0	0	0	0
Surface water augmentation (IPR) *		Tertiary	0	0	0	0	0	0
Direct potable reuse		Tertiary	0	0	0	0	0	0
Other (Provide General Description)		Tertiary	0	0	0	0	0	0
Total:			4,060	4,421	4,791	5,259	5,643	5,958
*IPR = Indirect Potable Reuse								
NOTES: All volumes in AF. Demands do not include approximately 327 AF delivered to Morgan Creek Golf Course, which is outside the City's potable water service area.								

The uses listed in Table 6-6 include use as recycled water supplies and required discharges. Recycled water uses represent the demands the City has determined are economically feasible to serve within the City's service area boundary including recently approved specific plans (Sierra Vista, Creekview, and Amoruso Ranch). The City is required to maintain four million gallons per day discharge into Dry Creek as an in-stream flow requirement; however, there are no in-stream flow requirements for Pleasant Grove Creek. These discharge flows, totaling 4,480 AFY, are not shown in Table 6-6.

A comparison of the 2015 actual use of recycled water compared to what was projected for use in 2015 in the 2010 UWMP is provided in Table 6-7.

Table 6-7. Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual (DWR Table 6-5)

Use Type		2010 Projection for 2015	2015 Actual Use
Agricultural irrigation		-	0
Landscape irrigation (excludes golf courses)		2,197	1,562
Golf course irrigation		-	1,378
Commercial use		-	0
Industrial use		-	1,120
Geothermal and other energy production		1,120	0
Seawater intrusion barrier		0	0
Recreational impoundment		-	0
Wetlands or wildlife habitat		4,480	0
Groundwater recharge (IPR)		-	0
Surface water augmentation (IPR)		N/A	0
Direct potable reuse		N/A	0
Other	Type of Use	N/A	0
Total		7,797	4,060
NOTES: (1) "2010 Projection for 2015" Landscape Irrigation value of 2,197 included golf courses. (2) The 1,120 AF classified in 2010 as "geothermal and other energy production" was reclassified to industrial use. (3) The 4,480 AF classified in 2010 as "wetlands or wildlife habitat" represents a required discharge to Dry Creek, and has been reclassified to not be included as a recycled water beneficial use. (4) "2010 Projection for 2015" includes approximately 327 AF delivered to the Morgan Creek Golf Course that, although delivered in 2015, is not reported under "2015 Actual Use" due to the Morgan Creek Golf Course location outside of the City's service area.			

The 2015 Actual Use column does not include recycled water uses outside of the City's potable water service area, although the 2010 Projection for 2015 does include these uses.

6.5.5 Actions to Encourage and Optimize Future Recycled Water Use

As of 2015, the City believes it is close to maximizing the use of available recycled water since the volume of recycled water produced in July is approaching the peak recycled water demand in July (the peak demand month and lowest ADWF month). For the City to further expand recycled water usage in summer months, additional recycled water must be made available, most likely through seasonal storage of recycled water that is produced in off-peak times. The storage volume necessary would depend on actual demand requirements. However, the City will continue to evaluate in-City and regional recycled demands and consider its ability to provide recycled water for future projects.

It is the policy of the City that where the use of recycled water is feasible, appropriate, and acceptable to all applicable regulatory agencies, the City will require an owner or customer to use recycled water for non-potable use. The City has other methods of encouraging recycled water use including a rate discount and public education. The recycled water rate for customers is currently 50 percent of the potable water rate. The City currently does not charge a connection fee for

connecting to the City's recycled water system. Not charging a connection fee also represents substantial cost savings to irrigation customers. The City also implements an extensive public education campaign to educate its customers about the reliability and other benefits of recycled water. Another major benefit to customers of using recycled water is that it can be used in times of drought. In the event the City imposes drought restrictions on irrigation water use, recycled water is exempt from these restrictions.

One target of future recycled water use is new development (see Table 6-8). A major hindrance to expanding use of recycled water in existing developments is lack of infrastructure. Installing new infrastructure in existing areas is exceedingly expensive. Due to this, the City requires use of recycled water for all commercial irrigation services in newly developing master planned areas. This is feasible because recycled water infrastructure can be built as a part of the original project. Additionally, the City is considering expanding recycled water distribution to entities both within and outside the potable water service area.

Table 6-8. Retail: Methods to Expand Future Recycled Water Use (DWR Table 6-6)

Section 6.5.5	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Developer Agreements	As part of the entitlement approval process, developers must include recycled water use.	2015-2040	1,898
Total			1,898
NOTES: All volumes in AF.			

6.6 DESALINATED WATER OPPORTUNITIES

There are no opportunities for the development of desalinated water within the City's service area as a future supply source. The City is not located near any bodies of water that would allow the option.

6.7 EXCHANGES OR TRANSFERS

The City maintains an on-demand treated water system that is used for municipal and industrial purposes. The City maintains direct treated water interties with five surrounding jurisdictions, as described in Section 2.2.3. The City can transfer water between jurisdictions through these interties or access water to supplement its distribution system. These facilities are designed to be used for wheeling water through the service area or for short-term demand shortage assistance. These exchanges or transfers are not considered long term and not included as long term or permanent opportunities.

As a condition of the Water Forum Agreement, the City has entered into a re-operation agreement with PCWA for up to 20,000 AF to be used when Roseville's surface diversion is cut back. In general, the agreement calls for PCWA to release up to an additional 20,000 AF to the American River on an annual basis during time of reduced water availability in the system. The water is to maintain flows in the Lower American River (Nimbus dam to Sacramento River), and therefore

is not available for the City's use. This re-operation water is considered a transfer, although the ultimate user, if any, of the water has not been identified as part of the agreement, only that the water would be marketed when it was identified as available. It is possible there could be multiple users, as the water will flow to the Delta and theoretically be available to all Delta water users.

Also as a condition of the Water Forum Agreement, the City has committed to not take the entire amount of contracted water from the Upper American River. As a result of having 66,000 AF of water available through various contracts and a commitment to take no more than 54,900 AF from the American River watershed there is opportunity to find a long term transfer for the 7,100 AF with a user downstream of the confluence of the American and Sacramento Rivers. Several transfer opportunities have been evaluated but none have been completed. The Water Code definition of short and long-term conditions are that short-term is considered for a period of one year or less and long-term is for a period of more than one year.

6.8 FUTURE WATER PROJECTS

Future water supply project opportunities, including purchasing or importing water, further development of groundwater resources, and expansion of the City's ASR program are discussed below.

6.8.1 Purchased or Imported Water

In addition to the current contract with PCWA for 30,000 AFY of surface water, the City is negotiating an agreement with PCWA for additional treated surface water supplies available in all hydrologic year types. The treated PCWA water will be supplied from PCWA's future Ophir Water Treatment Plant (Ophir WTP) which is supplied from PCWA's Middle Fork Project water. The Ophir WTP will be constructed in phases, with the first phase expected to be operational by 2020 and provide 10 MGD total supply to all customers. Additional phases will be evaluated as PCWA wholesale customers need new supply. At a minimum, the City plans to purchase 2.7 MGD of normal year capacity from the Ophir WTP, equivalent to 1,500 AFY of treated surface water supply. The City is also considering purchasing up to 10 MGD of dry-year capacity at this facility to enhance its water supply reliability.

6.8.2 Groundwater

It is the City's current policy that groundwater will be used only for reliability in times of shortage. Therefore, groundwater use is not assumed as part of normal water supply conditions within the planning horizon through 2040. To prepare for shortages in the future, and the eventual development of conjunctive use programs currently being studied, additional wells are being planned for the system. For planning purposes, each well is assumed to produce a nominal 1,500 GPM, with final production identified upon drilling and well development. When wells are used for backup or dry year supply, it is anticipated that they will be run for only short periods of time (in the case of backup), and for only a portion of the year (in the case of dry year supply). All wells will be constructed with capability to recharge the aquifer directly with treated surface water as a key element required for conjunctive use programs (see aquifer storage and recovery discussion below).

The City intends to construct additional groundwater wells over the next fifteen years for a total of ten new wells. Each well is assumed to provide 2,421 AF/YR (1,500 GPM), for a total of 21,789 AF/YR (13,500 GPM) of emergency supply.

6.8.3 Aquifer Storage and Recovery

All existing wells have ASR injection capability, and all future wells are planned to incorporate the same. The ASR program would not only allow the City to change the pattern of water withdrawal from Folsom Reservoir from peak demand times in the summer to better water availability times in the winter, but could also be used as a replacement for surface water in WFA dry/drier years (see Chapter 7).

The expected future water supply programs are listed in Table 6-9.

Table 6-9. Retail: Expected Future Water Supply Programs (DWR Table 6-7)

Name of Future Projects or Programs	Joint Project with other agencies?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Agency
Purchase from PCWA	Yes	PCWA	As described in text	2025-2030	All Year Types	1,500
Well Expansion - Phase I	No		4 New Wells	2015-2020	Single-Dry and Multi-Dry Year	9,684 (2,421 per well)
Well Expansion - Phase II	No		3 New Wells	2020-2025	Single-Dry and Multi-Dry Year	7,263 (2,421 per well)
Well Expansion - Phase III	No		2 New Wells	2025-2030	Single-Dry and Multi-Dry Year	4,842 (2,421 per well)

NOTES: Volumes are in AF. The groundwater projects are intended to act as dry year water supplies and hence increase the City's water supply reliability. It is the City's policy to not use groundwater facilities to increase the available normal year water supply.

6.9 SUMMARY OF EXISTING AND PLANNED SOURCES OF WATER

The City's current and planned sources of water can be summarized as such:

- The City is currently contracted to purchase 66,000 total AF/YR of American River water diverted from Folsom Lake with certain restrictions (see Chapter 7).
- The City intends to purchase an additional treated water supply from PCWA of no-less than 1,500 AF/YR as part of their Ophir Water Treatment Plant project.
- The City maintains groundwater wells for backup, emergency, and dry year supply. All current wells possess ASR capability.
- The City neither currently uses nor plans to use surface water that is not mentioned above.
- The City neither currently uses nor plans to use storm water as a potable water offset.
- The City currently utilizes and has future plans to expand recycled water usage.

Chapter 6

System Supplies



- The City neither currently uses nor plans to use desalinated water.
- The City maintains direct treated water interties with four surrounding jurisdictions for use in emergency situations.

The actual (2015) water supplies for the City are summarized in Table 6-10.

Table 6-10. Retail: Water Supplies – Actual (DWR Table 6-8)

Water Supply	Additional Detail on Water Supply	2015		
		Actual Volume	Water Quality	Total Right or Safe Yield (optional)
Purchased or Imported Water	United States Bureau of Reclamation (USBR)	7,820	Raw Water	32,000
Purchased or Imported Water	Placer County Water Agency (PCWA)	30,000	Raw Water	30,000
Recycled Water	South Placer Wastewater Authority	4,060	Recycled Water	4,060
Total		41,880		66,060
NOTES: All volumes in AF. USBR allocation of 7,820 AF is 25% of recent water use. Actual Volume values in table represent supply available in 2015, actual water use was less (20,881 AF). Recycled water volume represents volume distributed within the City's potable water service area.				

The future projected water supplies for the City are summarized in Table 6-11.

Table 6-11. Retail: Water Supplies – Projected (DWR Table 6-9)

Water Supply	Additional Detail on Water Supply	Projected Water Supply Report To the Extent Practicable									
		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)
Purchased or Imported Water	U.S. Bureau of Reclamation (CVP Supply)	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000
Purchased or Imported Water	PCWA (Middle Fork Supply)	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
Purchased or Imported Water	PCWA Treated Water (Additional Future Purchase)	0	0	0	0	1,500	1,500	1,500	1,500	1,500	1,500
Purchased or Imported Water	San Juan Water District	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Recycled Water	SPWA	4,421	4,421	4,791	4,791	5,259	5,259	5,643	5,643	5,958	5,958
Total		70,421	70,421	70,791	70,791	72,759	72,759	73,143	73,143	73,458	73,458
NOTES: All volumes are in AF. Does not include groundwater or intertie water, as both are intended for emergency situations and/or dry year use.											

6.10 CLIMATE CHANGE IMPACTS TO SUPPLY

At this time, a discussion in the UWMP of the potential impacts of climate change on the City's water supply is not required by the CWC and is therefore not included in this UWMP.

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CHAPTER 7

Water System Reliability



This chapter describes the long term reliability of the City's water supplies. The City's existing and planned water management tools for increasing the reliability of water supplies are also addressed. Shorter term reliability planning that may require immediate action, such as drought or a catastrophic supply interruption, is addressed in Chapter 8.

7.1 CONSTRAINTS ON WATER SOURCES

This section addresses potential legal, environmental, water quality, and climatic effects on the reliability of water supply sources through the year 2040.

7.1.1 Legal Constraints

The City does not anticipate legal factors to affect the reliability of recycled water or purchased water supply within the planning horizon of this UMWP.

There are no existing legal constraints that limit groundwater pumping and the groundwater basin is not adjudicated. However, the legal authority to enforce the safe yield of the basin has not been created, and the basin is subject to the users' cooperation in managing the basin until a formal authority is created. These issues and concerns are being discussed as part of the Western Placer County Groundwater Management Plan along with management objectives and activities. The collaborative group of City of Roseville, PCWA, City of Lincoln, and California American Water is responsible for and has been identified as the responsible entity for monitoring groundwater levels meeting requirements of the 2009 SB X7-6 California Statewide Groundwater Elevation Monitoring (CASGEM) program. Information gathered as part of this program was included in the groundwater model that was developed to support the ASR application with the Regional Water Quality Control Board to determine impacts of proposed extractions and injections related to groundwater levels in the region.

7.1.2 Water Quality Constraints

The City does not anticipate water quality factors to affect the reliability of recycled water, purchased water, or groundwater supply within the planning horizon of this UMWP. If applicable in the future, chemical contamination and the lowering of maximum contaminant levels (MCLs) for naturally-occurring constituents can be mitigated by constructing new treatment facilities.

7.1.3 Physical Constraints

The physical constraints of recycled water, surface water, and groundwater are discussed below.

7.1.3.1 Recycled Water

Recycled Water is physically constrained by flows into the City's wastewater treatment plants.

7.1.3.2 Surface Water

The City has identified its Folsom Lake intake pipe as a possible physical constraint on current surface water supply. If the water level of Folsom Lake were to drop below the intake, the City

would not be able to divert water without additional infrastructure. As a precaution, the City is actively searching for new diversion points.

The capacities of the Folsom Dam diversion, Roseville Water Treatment Plant, and distribution systems are sufficient to divert, treat, and convey the projected surface water demands. A 150 cubic feet per second (CFS) capacity limitation at the USBR pumping plant, agreed to based on pumping plant improvements made, is sufficient to provide water to meet the City's needs.

7.1.3.3 Groundwater

The physical constraints on the current groundwater supply are the pumping capacities of existing wells. The total pumping capacities from all six wells are about 11,050 GPM, approximately 15.9 MGD (see Chapter 3). The City plans to install more ten wells in the future to provide backup and dry year supply.

7.1.4 Other Constraints

Besides the above constraints, several other conditions could result in a reduction of surface water supply. The City's purchased surface water supply is subject to reductions during dry years (seasonal and climatic shortages) pursuant to the Water Forum Agreement (WFA), the USBR Operations Criteria and Plan (OCAP), and the Central Valley Project Municipal and Industrial Water Shortage Policy (CVP M&I WSP). These programs are discussed below.

7.1.4.1 Sacramento Water Forum Agreement

The Sacramento Water Forum is a diverse group of business and agricultural leaders, citizen groups, environmentalists, water managers, and local governments working together to balance two co-equal objectives:

- To provide a reliable and safe water supply for the Sacramento region's long-term growth and economic health; and
- To preserve the fishery, wildlife, recreational, and aesthetic values of the lower American River.

The City, along with several other Sacramento-area water suppliers are signatory to the January 2000 Water Forum Agreement which includes Purveyor Specific Agreements. The Water Forum Agreements provide the framework for how water resources, including surface water and groundwater supplies would be used in the region, through the year 2030. The City's Purveyor Specific Agreement includes limitations on City surface water diversions from the American River under various hydrologic conditions. The Water Forum categorized water years into three types, all of which are defined in terms of the projected March through November unimpaired flow into Folsom Reservoir. These hydrologic year types are defined as follows:

- Normal/Wet Years: When the projected unimpaired flow into Folsom Reservoir is greater than or equal to 950,000 AF
- Drier Years: When the projected unimpaired flow into Folsom Reservoir is between 400,000 AF and 950,000 AF

- **Driest Years:** When the projected unimpaired flow into Folsom Reservoir is less than 400,000 AF

Although Roseville's water contract entitlements total 66,000 AF/YR, the City's diversions from the American River are limited by the WFA in normal/wet years, drier and driest years. In normal/wet years, the City has agreed to limit surface water diversions from the American River to 58,900 AF/YR. In driest years (also called critically dry years), the maximum diversion from the American River is limited to 39,800 AF/YR. In drier years, the City may divert an amount between 39,800 and 54,900 AF/YR from the American River, depending on the unimpaired flow into Folsom Lake.

It is important to note that during the drier and driest years, the City agreed to have PCWA release an additional 20,000 AF/YR of water down the American River on the City's behalf through re-operation of PCWA's American River Middle Fork Project (MFP). This 20,000 AF/YR of water is not part of the City's contracted supply of 66,000 AF/YR. The intent of MFP re-operational releases during drier and driest years is to mitigate environmental impacts resulting from increased diversions above 1995 baseline levels.

7.1.4.2 USBR Operations Criteria and Plan (OCAP)

In addition to WFA, the City's USBR water is also subject to restrictions as detailed in the 2004 Long-Term Central Valley Project Operations and Criteria Plan (Located on USBR's website). Chapter 5 – Operations Forecasting states that CVP allocations can be affected by:

- Forecasted reservoir inflows and Central Valley hydrologic water supply;
- Current amounts of storage in upstream reservoirs and in San Luis Reservoir;
- Projected water demands in the Sacramento Valley;
- Instream and Delta regulatory requirements;
- Annual management of 3406(b)(2) (relating to fish and wildlife) resources; and/or
- Efficient use of CVP-SWP export capacity through Joint Point of Diversion flexibility.

The OCAP includes a requirement that contractors be informed by USBR no later than February 15 of any possible deficiency in supplies that year. Since 1992, increasing constraints placed on operations by legislative and ESA requirements have made water delivery to CVP contractors more difficult, with recent drought conditions further impacting deliveries. Additionally, it is important to note that the City's USBR water deliveries may be curtailed purely based on downstream delta conditions, irrespective of available upstream supply.

7.1.4.3 Central Valley Project Municipal and Industrial Water Shortage Policy (CVP M&I WSP)

Upon a condition of shortage as determined by the OCAP, the CVP M&I WSP details the “incremental steps” for by which the available M&I water supply is allocated to the CVP water service contractors. From the November 2015 USBR news release, elements of the CVP M&I Water Shortage Policy include:

- Define water shortage terms and conditions for applicable CVP water service contractors, as appropriate.
- Determine the quantity of water made available to CVP water service contractors that, together with the M&I water service contractors’ drought water conservation measures and other non-CVP water supplies, would assist the M&I water service contractors in their efforts to protect public health and safety during severe or continuing drought.
- Provide information to CVP water service contractors for their use in water supply planning and development of drought contingency plans.

The Final Environmental Impact Statement (EIS) describes the existing setting, alternatives for future operations under the CVP M&I Water Shortage Policy, and potential environmental impacts of each alternative. USBR selected Alternative 4, the Preferred Alternative, which comprises the Updated CVP M&I Water Shortage Policy developed by USBR with stakeholder input received during preparation of the Final EIS.

The decision will allow USBR the greatest degree of flexibility to address CVP water service contractors’ needs during a Condition of Shortage while recognizing that CVP deliveries are subject to the amount of CVP water available. The Updated CVP M&I Water Shortage Policy also provides clarity to the terms, conditions, and procedures of the CVP M&I Water Shortage Policy. A copy of the November 2015 Final Record of Decision is included in Appendix I.

7.2 RELIABILITY BY TYPE OF YEAR

This section addresses the reliability of the City’s water supply in average, single dry, and multiple dry water years. The City uses the following water year definitions from the DWR 2015 Guidebook:

- **Average year:** a year, or an averaged range of years, that most closely represents the average water supply available to the agency. For the purposes of this UWMP, the terms “normal” and “average” are used interchangeably.
- **Single-dry year:** the year that represents the lowest water supply available to the agency.
- **Multiple-dry year period:** the period that represents the lowest average water supply availability to the agency for a consecutive multiple year period (three years or more).

The reliability of the potable and recycled water supplies are discussed below, and are compared to the projected potable and recycled water demand.

7.2.1 Potable Water Supply and Demand Assessment

This section provides an assessment of the City's expected water supply and demand for average year, single-dry year, and multiple-dry year periods in five year increments through the year 2040, based on data available at the time of publication of this UWMP, and discusses the City plans to mitigate apparent supply deficits.

The City identified base water years for their historical average year, single driest year, and driest multiple-year period in its 2010 UWMP. Base water years were selected based on aggregated information from all water supply sources. The anticipated reliability of the surface water supplies in Normal, Single Dry, and Multi-Dry hydrologic conditions, as a percentage of contracted volume, is shown in Table 7-1.

Table 7-1. Surface Water Supply Reliability, Percent of Contracted Amount

Contracted Water Supply	Normal Year	Single Dry Year ^(a)	Multiple Dry Years ^(b)		
			Year 1	Year 2	Year 3
USBR (Central Valley Project supply)	100	25 ^(c)	75	75	50
PCWA (Middle Fork supply)	100	100	100	100	100
SJWD (Normal year only – Middle Fork supply) ^(d)	100	—	—	—	—
^(a) Minimum American River diversion as outlined in the City's Water Forum Agreement is 39,800 AF/YR (see Water Forum Agreement discussion in text). PCWA assumes full delivery of 30,000 AF/YR in all hydrologic conditions. The actual lowest historical allocation of USBR supply was 25% in 2015, which would not provide for the full WFA volume. ^(b) Based on the 1990-1992 historical hydrologic conditions. ^(c) Lowest historical allocation was 25% in 2015. ^(d) SJWD is available only as a normal or wetter year supply.					

Supply volumes for base years and the available water supply during each water year type are summarized in Table 7-2. As shown, the City has been able to reliably supply water throughout historic average year, single-dry year, and multiple dry year periods.

Table 7-2. Retail: Basis of Water Year Data (DWR Table 7-1)

Year Type	Base Year <i>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</i>	Available Supplies if Year Type Repeats	
		☐	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		☒	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	% of Average Supply
Average Year	1902-2010	58,900	100%
Single-Dry Year	2015	38,000	65%
Multiple-Dry Years 1st Year	1990	51,394	87%
Multiple-Dry Years 2nd Year	1991	54,000	92%
Multiple-Dry Years 3rd Year	1992	45,426	77%

NOTES: This table represents actual historical data, and is not a predictor of future availability. Does NOT include recycled water.

The projected potable water supply by water supply source is shown in Table 7-3.

Table 7-3. Projected Surface Water Contract and Supply Reliability During Hydrologic Normal, Single Dry, and Multiple Dry Years

Wholesale Sources	2020	2025	2030	2035	2040
Existing and Planned Sources of Water - Contracted Volume, AF/YR					
U.S. Bureau of Reclamation (CVP supply)	32,000	32,000	32,000	32,000	32,000
PCWA (Middle Fork supply)	30,000	30,000	30,000	30,000	30,000
PCWA (Ophir WTP Supply)	-	-	1,500	1,500	1,500
San Juan Water District	4,000	4,000	4,000	4,000	4,000
Total	66,000	66,000	67,500	67,500	67,500
Normal Year Water Supplies, AF/YR - 58,900 AF/YR (Base Year Water Forum Limitation)					
U.S. Bureau of Reclamation (CVP supply)	32,000	32,000	32,000	32,000	32,000
PCWA (Middle Fork supply)	30,000	30,000	30,000	30,000	30,000
PCWA (Ophir WTP Supply)	-	-	1,500	1,500	1,500
San Juan Water District	4,000	4,000	4,000	4,000	4,000
Total	66,000	66,000	67,500	67,500	67,500
Single Dry Year Water Supplies, AF/YR - 38,000 AF/YR (Surface Water Allocation)					
U.S. Bureau of Reclamation (CVP supply) ^(a)	8,000	8,000	8,000	8,000	8,000
PCWA (Middle Fork supply)	30,000	30,000	30,000	30,000	30,000
PCWA (Ophir WTP Supply)	-	-	1,500	1,500	1,500
San Juan Water District ^(b)	-	-	-	-	-
Total	38,000	38,000	39,500	39,500	39,500
Multi-Dry Year Water Supplies, First Year, AF/YR - 51,394 AF/YR (Base Year Water Forum Limitation)					
U.S. Bureau of Reclamation (CVP supply) ^(c)	24,000	24,000	24,000	24,000	24,000
PCWA (Middle Fork supply)	30,000	30,000	30,000	30,000	30,000
PCWA (Ophir WTP Supply)	-	-	1,500	1,500	1,500
San Juan Water District	-	-	-	-	-
Total	54,000	54,000	55,500	55,500	55,500
Multi-Dry Year Water Supplies, Second Year, AF/YR - 54,000 AF/YR (Surface Water Allocation)					
U.S. Bureau of Reclamation (CVP supply)	24,000	24,000	24,000	24,000	24,000
PCWA (Middle Fork supply)	30,000	30,000	30,000	30,000	30,000
PCWA (Ophir WTP Supply)	-	-	1,500	1,500	1,500
San Juan Water District	-	-	-	-	-
Total	54,000	54,000	55,500	55,500	55,500
Multi-Dry Year Water Supplies, Third Year, AF/YR - 45,426 AF/YR (Base Year Water Forum Limitation)					
U.S. Bureau of Reclamation (CVP supply)	16,000	16,000	16,000	16,000	16,000
PCWA (Middle Fork supply)	30,000	30,000	30,000	30,000	30,000
PCWA (Ophir WTP Supply)	-	-	1,500	1,500	1,500
San Juan Water District	-	-	-	-	-
Total	46,000	46,000	47,500	47,500	47,500
^(a) Actual 2015 allocation of 25%. ^(b) No supply in Single and Multi-Dry hydrologic conditions. ^(c) See Table 7-1.					

Chapter 7

Water System Reliability



7.2.1.1 Comparison of Supply and Demand

A comparison of projected water supply and demand during normal, single-dry, and multiple-dry years is included in Table 7-4. It is important to note that in all scenarios shown, normal water demands are shown. No demand reductions have been shown for conservation reductions in dry years.

Table 7-4. Summary of Potable Water Demand Versus Supply During Hydrologic Normal, Single Dry, and Multiple Dry Years, AF/YR^(a)

Hydrologic Condition					
	2020	2025	2030	2035	2040
Normal Year					
Available Surface Water Supply	58,900	58,900	60,400	60,400	60,400
Potable Water Demand	41,055	43,300	46,074	48,762	50,907
Potential Surplus (Deficit)	17,845	15,600	14,326	11,638	9,493
Single Dry Year					
Available Surface Water Supply	38,000	38,000	39,500	39,500	39,500
Potable Water Demand	41,054	43,300	46,074	48,762	50,907
Potential Surplus (Deficit)	(3,054)	(5,300)	(6,574)	(9,262)	(11,407)
Multiple Dry Years, First Year Supply					
Available Surface Water Supply	51,394	51,394	52,894	52,894	52,894
Potable Water Demand	41,054	43,300	46,074	48,762	50,907
Potential Surplus (Deficit)	10,340	8,094	6,820	4,132	1,987
Multiple Dry Years, Second Year Supply					
Available Surface Water Supply	54,000	54,000	55,500	55,500	55,500
Potable Water Demand	41,054	43,300	46,074	48,762	50,907
Potential Surplus (Deficit)	12,946	10,700	9,426	6,738	4,593
Multiple Dry Years, Third Year Supply					
Available Surface Water Supply	45,426	45,426	46,926	46,926	46,926
Potable Water Demand	41,054	43,300	46,074	48,762	50,907
Potential Surplus (Deficit)	4,372	2,126	852	(1,836)	(3,981)
^(a) Demands from Table 4-3. Supply from Table 7-3 (using limiting factor).					

As shown, there is adequate water supply in normal years to meet demands through 2040; however, in single dry years, and in certain multiple dry years, a water supply deficit may occur. The apparent potable water supply deficit will be mitigated as described below.

7.2.1.2 Deficit Mitigation

Depending on the raw water supply available from USBR, and in accordance with the WFA, deficits in potable water supply may occur in Single Dry Years and Multi-Dry Years beginning in 2040, as described above. To alleviate the potential deficits, the City will require short term demand reductions (water conservation) and/or pump groundwater. The City would prefer to not require water conservation greater than 20 percent of Normal Year demands. However, as evident by actions taken by the State Water Resources Control Board in 2015, the City was mandated a 28 percent conservation target during the 2015 water year. The City exceeded this water conservation target in 2015 with a 33 percent cumulative conservation compared to 2013 water use, demonstrating that water conservation in excess of 20 percent is achievable.

One potential strategy to alleviate the potential water deficits shown in Table 7-4 is indicated in Tables 7-5 and 7-6. In Table 7-5, the potential volume of water resulting from potable water demand reductions of up to 20 percent of Normal Year demands are shown.

Table 7-5. Potential Water Conservation (up to 20 percent of Normal Year Demand)

Hydrologic Condition	2020	2025	2030	2035	2040
Normal	-	-	-	-	-
Single Dry	3,054	5,300	6,574	9,262	10,181
Multi-Dry (Year 1)	-	-	-	-	-
Multi-Dry (Year 2)	-	-	-	-	-
Multi-Dry (Year 3)	-	-	-	1,836	3,981

The remaining deficit could be alleviated by groundwater pumping, as shown in Table 7-6.

Table 7-6. Potential Groundwater Use to Relieve Remaining Deficit

Hydrologic Condition	2020	2025	2030	2035	2040
Normal	-	-	-	-	-
Single Dry	-	-	-	-	1,226
Multi-Dry (Year 1)	-	-	-	-	-
Multi-Dry (Year 2)	-	-	-	-	-
Multi-Dry (Year 3)	-	-	-	-	-

The City will determine the needed balance between water conservation and groundwater pumping on a case-by-case basis. The City is also considering water supply projects or exchanges that would increase the reliability of the raw water supplies diverted from the American River. When these projects are completed, the necessary demand reduction and groundwater use are expected to decrease.

7.2.2 Recycled Water Supply and Demand Comparison

The recycled water supply is considered to be 100 percent reliable in all water year types, as shown in Table 7-7. The projected recycled water supply has been set equal to the projected recycled water demand in Table 7-7 because showing a surplus recycled water supply would mask potential potable water shortages in Tables 7-8, 7-9 and 7-10 (DWR Tables 7-2, 7-3 and 7-4, respectively).

Table 7-7 Recycled Water Supply and Demand Comparison in All Water Year Types

	2020	2025	2030	2035	2040
Available Recycled Water Supply	4,421	4,791	5,259	5,643	5,958
Recycled Water Demand	4,421	4,791	5,259	5,643	5,958
Difference	0	0	0	0	0

As was indicated in Table 6-5 (DWR Table 6-3), the 2015 volume of wastewater treated to tertiary standards was just less than 17,000 AF.

7.2.3 Total Water Supply and Demand Comparison

A comparison of projected total (potable and recycled) water supply and demand during a normal water year is included in Table 7-8. As shown, there is adequate water supply in normal years to meet demands through 2040.

Table 7-8. Retail: Normal Year Supply and Demand Comparison (DWR Table 7-2)

	2020	2025	2030	2035	2040 (Opt)
Supply totals (autofill from Table 6-9)	70,421	70,791	72,759	73,143	73,458
Demand totals (autofill from Table 4-3)	45,475	48,091	51,333	54,405	56,865
Difference	24,946	22,700	21,426	18,738	16,593
NOTES: Volumes are in AF. Includes Recycled Water. Table references refer to DWR table numbers.					

A comparison of projected water supply and demand during a single dry water year is included in Table 7-9.

Table 7-9. Retail: Single Dry Year Supply and Demand Comparison (DWR Table 7-3)

	2020	2025	2030	2035	2040 (Opt)
Supply totals	42,421	42,791	44,759	45,143	45,458
Demand totals	45,475	48,091	51,333	54,405	56,865
Difference	(3,054)	(5,300)	(6,574)	(9,262)	(11,407)
NOTES: All volumes are in AF. Includes Recycled Water.					

A comparison of projected water supply and demand during multiple dry years is included in Table 7-10.

Table 7-10. Retail: Multiple Dry Years Supply and Demand Comparison (DWR Table 7-4)

		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	55,815	56,185	58,153	58,537	58,852
	Demand totals	45,475	48,091	51,333	54,405	56,865
	Difference	10,340	8,094	6,820	4,132	1,987
Second year	Supply totals	58,421	58,791	60,759	61,143	61,458
	Demand totals	45,475	48,091	51,333	54,405	56,865
	Difference	12,946	10,700	9,426	6,738	4,593
Third year	Supply totals	49,847	50,217	52,185	52,569	52,884
	Demand totals	45,475	48,091	51,333	54,405	56,865
	Difference	4,372	2,126	852	(1,836)	(3,981)
NOTES: All volumes are in Af. Includes Recycled Water.						

The deficits shown in Tables 7-9 and 7-10 are the same as the deficit in potable water demand (Table 7-4). The deficit will be mitigated by a combination of potable water conservation and groundwater pumping, as described above.

7.3 REGIONAL SUPPLY RELIABILITY

All water consumed by the City comes from local supply sources. No water is imported from other regions, nor does the City anticipate importing water from other regions throughout the UWMP planning period.

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CHAPTER 8

Water Shortage Contingency Planning



As part of this UWMP, the City has considered possibilities of shortage and outages that could affect water supply. Water shortage contingency planning includes actions to be implemented during a catastrophic interruption of water supplies including but not limited to regional power outage, earthquake, fire, flooding or other disasters. The City's Water Conservation Ordinance (Appendix J) notes that long-duration shortages are handled through implementation of a drought contingency plan, and short-term disruptions are addressed through use of existing water system storage and water system interties with adjacent jurisdictions. In the event these supplies are not sufficient or available to meet short-term needs, groundwater will be used to supplement water demands.

8.1 GENERAL BACKGROUND

The Water and Energy Conservation component of the City of Roseville General Plan encourages resource conservation and protection, and the City provides a comprehensive program to encourage conservation. The City has implemented various strategies and plans to minimize the use of potable water in order to operate effectively under drought conditions.

In 1991, the City developed and adopted the Roseville Water Conservation Ordinance (Section 14.09 of the Roseville Municipal Code). Under this ordinance, the City has authority to declare water shortage conditions and implement drought related mitigation measures. The City can initiate this process by declaring a drought stage (Stage One through Stage Five) and imposing the appropriate and corresponding drought response measures.

Most recently, in 2015 the City adopted Ordinance 5491, which updated the Roseville Municipal Code regarding water conservation. The purpose of the ordinance is to ensure compliance with all federal, state and local requirements relating to water conservation and drought mitigation by:

- Reducing water consumption throughout the City during years of normal precipitation and during years of drought;
- Protecting and conserving the City's supply of water during times of emergency and/or crisis; and
- Minimizing and/or eliminating the waste through voluntary compliance or punitive action, if necessary.

Governor Brown's Drought Executive Order of April 1, 2015 (EO B-29-15) directed DWR to update the State's Model Water Efficient Landscape Ordinance (MWELO) through expedited regulation. The California Water Commission approved the revised Ordinance on July 15, 2015. City Staff revised the City's Ordinance to comply with the State's Model Ordinance. The revised ordinance is found in Section 14.18 of the Roseville Municipal Code (available via the City's website).

8.2 STAGES OF ACTION

The City's Municipal Code allows the City to implement up to 5 stages for conservation as detailed in Table 8-1. These stages and associated actions are planned for use not only for water shortages caused by emergencies but also to address water supply reductions as a result of drought. Each water conservation stage is estimated to yield a ten percent reduction in surface water supply needs.

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Shortages will be mitigated with use of groundwater, conservation and expansion of recycled water, as available.

Per the Roseville Municipal Code 14.090.050, however, groundwater cannot be used until surface water shortages would result in greater than 20 percent shortage, which would trigger Stage 3 drought conditions. Groundwater cannot be used to decrease drought conditions to lower than Stage 2 conditions. An example of how the City would balance water conservation and groundwater use was provided in Chapter 7.

Pursuant to the City's Water Forum Agreement, the City has assumed it is limited to no less than 39,800 AFY of surface water supplies in the driest of year types although conference years, when unimpaired inflow to Folsom Lake is below 400,000 AFA, may result in further reductions. This represents a 32.4% reduction in average year water supplies of 58,900 AFY. The City has planned groundwater resources to meet the needs of the community so that supply conditions are not anticipated to require conservation reductions greater than 20 percent. In the event conference years require additional reductions in water supplies then increased conservation measures and additional groundwater use would be considered to make up for the shortage.

In 2015, the USBR OCAP operations reduced the provided the City with a 25% allocation of its CVP water supply. This resulted in total surface water supply to the City of 37,820 AFY, which is below the WFA lower limit. The City rounded this number up slightly and used a water supply of 38,000 AFY in its single dry year water supply analysis in Chapter 7. The upward rounding in 2015, does not change the overall analysis in this document.

Table 8-1. Retail: Stages of Water Shortage Contingency Plan (DWR Table 8-1)

Stage	Complete Both	
	Percent Supply Reduction ¹ <i>Numerical value as a percent</i>	Water Supply Condition <i>(Narrative description)</i>
I	Up to 10%	Surface water supply availability of 53,010 AF ^(a)
II	Up to 20%	Surface water supply availability of 47,120 AF
III	Up to 30%	Surface water supply availability of 41,230 AF
IV	Up to 40%	Surface water supply availability of 35,340 AF ^(b)
V	Up to 50%	Surface water supply availability of 29,450 AF ^(b)
¹ One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.		
(a) Surface water availability consistent with Water Forum Agreement for water taken from the American River system.		
(b) Based on water supply portfolio available it is not projected or anticipated that shortages would ever get to levels of 40 – 50% shortage. Measures are planned, however, to meet regulatory requirements or UWMP.		

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8.3 PROHIBITIONS ON END USERS

California Water Code Section 10632 (a)(4) requires mandatory prohibitions against specific water use practices that may be considered excessive during water shortages.

The City originally adopted an ordinance that established rules and regulations prohibiting wasteful water use during a normal water supply situation and providing enforcement thereof. This ordinance was updated to conform to the California Urban Water Conservation Council's (CUWCC) memorandum of understanding (MOU) for best management practices. A copy of the City's current adopted Water Conservation Ordinance is included in Appendix J of this 2015 UWMP. Table 8-2 lists a selection of the City's Restrictions and Prohibitions on End Uses.

Table 8-2. Retail Only: Restrictions and Prohibitions on End Uses (DWR Table 8-2)

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference (optional)	Penalty, Charge, or Other Enforcement?
0	Landscape - Limit landscape irrigation to specific times	Appendix - Water Shortage Ordinance: 14.09.070 (A)	Yes
1	Landscape - Limit landscape irrigation to specific days	Appendix - Water Shortage Ordinance: 14.09.070 (C)	Yes
1	Other - Prohibit use of potable water for washing hard surfaces	Appendix - Water Shortage Ordinance: 14.09.070 (H)	Yes
1	CII - Restaurants may only serve water upon request	Appendix - Water Shortage Ordinance: 14.09.070 (I)	Yes
2	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Appendix - Water Shortage Ordinance: 14.09.070 (H)	Yes
3	Landscape - Other landscape restriction or prohibition	Appendix - Water Shortage Ordinance: 14.09.070 (H)	Yes
3	Water Features - Restrict water use for decorative water features, such as fountains	Appendix - Water Shortage Ordinance: 14.09.070 (J)	Yes
3	Other - Prohibit use of potable water for construction and dust control	Appendix - Water Shortage Ordinance: 14.09.070 (K)	Yes
3	Pools and Spas - Require covers for pools and spas	Appendix - Water Shortage Ordinance: 14.09.070 (L)	Yes
4	Other water feature or swimming pool restriction	Appendix - Water Shortage Ordinance: 14.09.070 (K)	Yes
4	Other	Appendix - Water Shortage Ordinance: 14.09.070 (L)	Yes
5	Landscape - Prohibit certain types of landscape irrigation	Appendix - Water Shortage Ordinance: 14.09.070 (C)	Yes
5	Other water feature or swimming pool restriction	Appendix - Water Shortage Ordinance: 14.09.070 (D)	Yes

8.4 PENALTIES, CHARGES, OTHER ENFORCEMENT OF PROHIBITIONS

Each Stage of the Contingency Plan establishes certain restrictions on the use of potable water. Violating the restrictions in a particular Stage while it is in effect is declared a non-essential, wasteful use of potable water. The procedures for enforcing the mandatory water use restrictions are further described in Section 9.1.1, with the corresponding Roseville Municipal Code Chapter 14.09 found in Appendix J.

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8.5 CONSUMPTION REDUCTION METHODS

Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply. California Water Code Section 10632 (a)(5) requires the water supplier to provide consumption reduction methods in the most restrictive stages of a water shortage. Table 8-3 lists a selection of City's consumption reduction methods for each stage of the City's Water Shortage Contingency Plan (WSCP). Refer to Appendix J for the complete list of consumption reduction methods.

Table 8-3. Retail Only: Stages of WSCP – Consumption Reduction Methods
(DWR Table 8-3)

Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference (optional)
All Stages	Expand Public Information Campaign	
All Stages	Increase Water Waste Patrols	
All Stages	Offer Water Use Surveys	
	Implement or Modify Drought Rate Structure or Surcharge	

8.6 DETERMINING WATER SHORTAGE REDUCTIONS

California Water Code Section 10632 (a)(9) requires the water supplier to develop a mechanism for determining actual reductions in water use in the course of carrying out the urban water supply shortage contingency analysis.

The City evaluates the effectiveness of its water conservation program based on metered water use data. Monitoring involves determining the per capita water use for residential users and the water use per account for non-residential customer categories.

The City determines if the water customers are achieving the required demand reductions by comparing historical metered water use without a water shortage emergency to the metered water use under the declared water shortage stage.

8.7 REVENUE AND EXPENDITURE IMPACTS

Section 10632 (7) of the California Water Code requires an analysis of the impacts of each of the actions taken for conservation and water restriction on the revenues and expenditures of the water supplier.

In an effort to stabilize revenues in times of shortage, the City has incorporated measures to deal with revenue shortfall as well as provide additional price signals to users in the highest use brackets. During water shortages, temporary water shortage surcharges and excess water use charges may be instituted, depending on the severity and duration of the shortage. As a first line of defense, the water utility rate stabilization fund serves to ensure reserves exist to maintain the

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short-term and long-term financial health of the utility. As such, to the extent reserve funds are available to offset reduced revenue and fund unanticipated cost contingencies associated with a water shortage, they will preclude implementation of the water shortage surcharges and excess water use charges. When reserves are no longer sufficient, water shortage surcharges and/or excess water use charges may be implemented at the direction of the City Manager. Any additional surcharge will be scaled to Water shortage rate structures that are developed to be revenue neutral mitigate the financial impacts caused by reduced water sales. Ensuring revenue sufficiency at reduced water usage levels means that a typical customer will not experience an increase in their bill if they meet the required water usage reduction (i.e. 10%, 20%, etc.). Customers not achieving the required water usage reduction, would receive higher water utility bills.

8.8 RESOLUTION OR ORDINANCE

The City's Water Conservation Ordinance (14.09) can be found in Appendix J.

8.9 CATASTROPHIC SUPPLY INTERRUPTION

Section 10632 (3) of the California Water Code requires actions to be undertaken by the water supplier to prepare for and implement during a catastrophic interruption of water supplies.

As discussed in Chapter 6, Roseville maintains direct treated water interties with four surrounding jurisdictions. Roseville can transfer water between jurisdictions through these interties or access water to supplement its distribution system. These facilities can be called upon during a catastrophic supply interruption to provide emergency water from neighboring areas in order to maintain normal distribution.

Additionally, the City maintains groundwater wells for backup supply that can be activated in the event of a catastrophic supply interruption. Details regarding groundwater wells are further discussed in Chapter 6.

8.10 MINIMUM SUPPLY NEXT THREE YEARS

As an UWMP requirement, all water agencies are required to provide an estimate of the minimum water supply available during each of the next three water years, as shown in Table 8-4. This estimate reflects the combined availability of all water sources and assumes the same hydrology that was noted in the historical multiple-dry year period (Chapter 7, Section 7.3).

Table 8-4. Retail: Minimum Supply Next Three Years (DWR Table 8-4)

	2016	2017	2018
Available Water Supply	54,000	54,000	46,000
NOTES: All volumes in AF. Assumes no water from SJWD, minimum recycled water, and minimum groundwater usage.			

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CHAPTER 9

Demand Management Measures



This chapter describes the City's historical and existing water conservation program, status of implementation of Demand Management Measures (DMMs), and projected future conservation implementation. The CWC requires that UWMPs include a comprehensive description of historical, current, and projected water conservation programs.

CWC 10631 (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) (A) ... a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measure that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

(B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:

(i) Water waste prevention ordinances.

(ii) Metering.

(iii) Conservation pricing.

(iv) Public education and outreach.

(v) Programs to assess and manage distribution system real loss.

(vi) Water conservation program coordination and staffing support.

(vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.

In previous UWMPs, a substantial amount of data was required to document a water supplier's progress in implementing fourteen specific DMMs. In 2014, Assembly Bill 2067 simplified, clarified, and updated reporting requirements for DMMs. Starting with this 2015 UWMP, focus has turned away from detailed descriptions of each of the fourteen DMMs and has turned to key water conservation measures that are being implemented to achieve compliance with SB X7-7. For retail agencies, the number of DMMs has been reduced from fourteen to six (plus an "other" category). A narrative description of the status of the DMMs and how the DMMs will help the water supplier achieve its SB X7-7 water use targets is required. Detailed data are not required.

Members of the CUWCC may include their reporting in the UWMP, but a narrative is also required.

9.1 DEMAND MANAGEMENT MEASURES

The six DMMs required to be discussed in the 2015 UWMP include the following:

- Water waste prevention ordinances
- Metering
- Conservation pricing
- Public education and outreach
- Programs to assess and manage distribution system real loss
- Water conservation program coordination and staffing support

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Demand Management Measures



For each DMM, the current program is described, followed by a description of how the DMM was implemented over the previous five years and the planned implementation to achieve the water use targets required by SB X7-7 (see Chapter 5 SB X7-7 Baselines and Targets). Supplemental materials can be found in Appendix K.

9.1.1 Water Waste Prevention Ordinances

The City currently restricts water waste within its service area. Roseville Municipal Code Chapter 14.09, Water Conservation Ordinance (presented in Appendix J), defines water waste and associated penalties of continued infractions. Per the ordinance, customers in violation are provided a series of notifications at one week intervals: first a courtesy notice, second an administrative warning, and finally a formal citation. If the situation is not remedied by the time specified in the formal citation, additional measures can be taken to force compliance. These measures include fines, water restrictions, low flow devices, or discontinued service. In addition, the City may waive the courtesy notice and administrative warning in times of drought.

To enforce the Water Waste Ordinance, the City employs three 1,000 hour/year water conservation workers to patrol within the service area limits. The City has also employed contract help at night to conduct water waste patrols. In addition, full-time City staff patrol for water waste as part of their normal job duties. In addition to patrols by City staff, the City has an on-line reporting mechanism that allows customers to report observed water waste anonymously. Customers can visit www.roseville.ca.us/waterwaste and submit an electronic form, which is then further investigated by City staff.

Implementation of this DMM is ongoing and expected to help the City achieve its water use targets by minimizing the nonessential uses of water so that water is available to be used for human consumption, sanitation, and fire protection.

9.1.2 Metering

A meter retrofit program was developed and implemented from 2001 to 2011. Implementation of metered rates began immediately on all residential metered connections established after January 1, 2002, with the remaining retrofitted homes transitioned in large blocks as retrofits were completed. During program development, it was requested that customers be provided water use information for a period of one year before transitioning to a metered rate. This was incorporated into the plan, and the first block of homes to be transitioned began receiving comparative data in March 2003 with transition to metered rates in April 2004.

The metering DMM helps Roseville achieve its water use targets by providing accurate water use information to the customer and the City. Metering also allows the city to improve leak detection efforts, further discussed in Section 9.1.5.

9.1.3 Conservation Pricing

As a component of its meter retrofit program, the City adopted conservation pricing for water on all metered accounts from 2011 through 2015. To comply with Proposition 218 requirements, the City transitioned to a per-use, uniform rate billing structure in February 2016. Water rates for 2011, 2015, 2016 interim, and 2016 final are shown in Table 9-1, with a complete list of service charges, excess water use charges, and water rates are included in Roseville Municipal Code Sections 14.08.090 Service Charges for Metered Service through 14.08.100 Flat Water Rates.

Table 9-1. City of Roseville Potable Water Usage Rates

Water Use Category	2011	2015	Effective Feb 8, 2016	Effective July 1, 2016
Residential Tier 1 (First 12 CCF)	\$0.39	\$0.52	-	-
Residential Tier 2 (Next 30 CCF)	\$0.78	\$1.01	-	-
Residential Tier 3 (Next 33 CCF)	\$1.17	\$1.53	-	-
Residential Tier 4 (Over 75 CCF)	\$1.74	\$2.29	-	-
Residential Rate (Per CCF)	-		\$0.97	\$1.09
Non-Residential Rate (Per CCF)	\$0.78	\$1.01	\$0.97	\$1.09
Recycled Water Rate (Per CCF)	-	\$0.44	\$0.49	\$0.55

Implementation of this DMM is expected to help the City achieve its water use targets by ensuring water customers pay the true cost of water. Sufficient revenue will be available to fund water system operations, maintenance, and water conservation programs.

9.1.4 Public Education and Outreach

The City promotes water conservation and other resource efficiencies in coordination with the Regional Water Authority (RWA), Roseville Electric, and Roseville's Public Information Department. The City distributes information through paid advertisements, television commercials, featured segments on the local government access channel, the internet (through the City's website and streaming video), the City's Utility Exploration Center, several water efficient workshops each year, movie theater ads, newsletters, bill inserts, bill messages, brochures, vehicle decals, community outreach events, community speaker bureaus, and yearly special events.

9.1.4.1 Water Insight Program

In 2005, water bills were redesigned to show historical water usage on individual accounts. This information allows businesses and homeowners to monitor water usage as it varies throughout the year. Additionally, the City has implemented a usage and tracking program known as Water Insight. The Water Insight program allows customers to view their current water usage and compare against previous-year usage. It also allows customers to compare against other households of similar make-up through the City's website.

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Demand Management Measures



9.1.4.2 Utility Exploration Center

In 2008, the City's utilities jointly funded and created the Roseville Utility Exploration Center. In addition to serving as a "storefront" for the utilities, the Center is used by the City for community outreach and environmental education. Designed for an interactive experience, the Center hosts multiple hands-on exhibits with a "learning lab" for demonstrations, presentations and workshops. Topics include water conservation and watershed protection, energy efficiency, waste reduction, and wastewater management.

Since opening, the Utility Exploration Center has hosted over 350,000 program participants, with approximately 7,000 student (preschool through sixth grade) and 34,000 other annual visitors to the exhibit hall; partnered with cultural, recreational, and utility-related organizations to create a lively series of changing events, workshops, and activities; and, connected with residents in a variety of off-site outreach activities.

The Center is housed within the Gold LEED (Leadership in Energy and Environmental Design) certified Martha Riley Library building, which was the first building in Placer County to be so honored. Future plans (currently targeted for an opening Summer 2018) include a one-acre outdoor expansion called the IDEAScape, further expanding exhibits to include topics such as river-friendly landscaping and irrigation, utility systems, solar energy, and watershed protection.

9.1.4.3 Regional Water Authority

The City also is a member of the Regional Water Authority (RWA). RWA has an active public outreach campaign to which the City contributes. The program consists of paid advertising campaigns to market the Blue Thumb (www.bluthumb.org) program, public service announcements, as well as partnerships with big box stores and the local RiverCats minor-league baseball team. Additionally, the RWA hosts an interactive website (www.rwah20.org/rwa/) that contains blogs on water use efficiency, garden tours and program information. RWA provides conservation materials to Schools within the City's service area.

9.1.4.4 Student Outreach

In addition to RWA student outreach programs, the City independently provides presentations, conservation materials, and facility tours to local schools.

9.1.5 Programs to Assess and Manage Distribution System Real Loss

The City maintains a comprehensive water audit and leak-detection program to assess, identify, and repair potable distribution system losses.

In 2009 the City began using AWWA Water Loss software to develop an annual water loss audit. Results from the audit have helped the City identify where in the distribution process leaks are occurring. When coupled with detailed pipeline information stored in the City's asset management system, audit information helps identify potentially leak prone areas of the City's distribution system. These areas are then monitored through visual and/or auditory methods to isolate individual areas of leakage. Once isolated, responses include corrosion monitoring programs, service cathodic protection and/or replacement. The City's asset management software is then

updated with identified leaks, which in turn provides more information useful for prioritization of future rehabilitation programs.

9.1.6 Water Conservation Program Coordination and Staffing Support

In addition to the employees mentioned in Section 9.1.1, the City employs other individuals as members of the City's internal water conservation program team. Member qualifications include: Certified Landscape Irrigation Auditor (CLIA) certification, Water Distribution Operator D-2 certification, and extensive irrigation system management experience.

In compliance with DWR's UWMP guidelines, the full contact information for the City's Water Conservation Administrator is listed below:

Bobby Alvarez
Water Conservation Administrator
City of Roseville, Environmental Utilities Department
916-746-1710 (office)
916-774-5755 (fax)
BALvarez@roseville.ca.us

9.2 OTHER DEMAND MANAGEMENT MEASURES

In addition to the six DMMs described above, the City also implements the following programs:

- Residential Water Wise House Calls
- Residential HET Replacement Program
- Residential Irrigation Rebates
- Residential Cash for Grass Rebates
- Commercial Irrigation Water "Budgets"
- Commercial Irrigation Audit
- Commercial Water Waste "Night Patrols"
- Commercial Cash for Grass Rebates
- Commercial HET Replacement Program
- Commercial Custom Rebate
- Commercial Landscape Water Use Reviews
- Commercial Interior Water Use Audits

These programs are described below.

9.2.1 Residential Conservation Programs

The City implements several programs to reduce the consumption of water to its residents. The activities of these various programs are described below. Implementation of these programs is expected to help the City achieve its water use targets by reducing the amount of water consumed by its residential customers. Supplemental materials can be found in Appendix K.

9.2.1.1 Water Wise House Calls

The City provides a free home water use inspection service known as the Water Wise House Call Program. Inspections are conducted by trained water conservation technicians, and help identify potential water-savings for the customer.

Single-family inspections are approximately one hour in length, and consist of an indoor and outdoor evaluation. During the interior portion of the inspection, the technician measures flow rates of existing plumbing fixtures (offering high-efficiency alternatives if necessary), checks all fixtures and appliances for leaks, and provides information on the City's currently available rebate programs (further described in Sections 9.2.1.2 - 9.2.1.4 below).

Following the indoor evaluation, the technician then conducts an outdoor inspection. A typical outdoor inspection tests sprinkler system efficiency, distribution uniformity, pool equipment, and for leaks via pressure test. Following the sprinkler test, soil moisture probes are utilized to optimize irrigation scheduling through adjustment of the residence's irrigation controller.

Finally, water use information is reviewed and the customer is provided with suggested corrective actions, information regarding the City's rebate programs, and educational material on how to further water conservation.

In addition to local advertising, Water Wise House Calls are actively marketed to high water use customers by the City's Water Efficiency Division.

9.2.1.2 Residential High Efficiency Toilet Replacement Program

The City first established a HET rebate program in 2008. Residents can receive up to \$100 for replacing an older (pre-1992), non-conserving toilet with a new 1.28 gallon per flush model. Rebates are offered on a first come/first service basis to customers on an annual basis, and the program is advertised regularly on Roseville's Channel 11, bill inserts, conservation articles, newsletters, and the City's website. Customers can also obtain an application by request through the mail or at special events and City office public counters.

The City plans to maintain the replacement program, and will continue to monitor rebate requests. Program expansion will be assessed annually based on past years' participation.

9.2.1.3 Residential Irrigation Efficiency Rebate

The City offers residential customers a rebate of up to \$100 for upgrading an existing irrigation system with new, high efficiency equipment. The program covers 100% of eligible parts, and applications can be accessed via the City's website.

Chapter 9

Demand Management Measures



9.2.1.4 Residential Cash for Grass

In 2008, Roseville created a turf replacement program titled “Cash for Grass” that provides incentive for customers to replace their turf with water efficient landscaping. Turf is purchased at \$.50 per square foot up to \$1,000 per residential site. To comply, participants must not only remove their turf but also install a low volume irrigation system to irrigate their new water efficient landscape.

9.2.2 Commercial, Industrial, Institutional Conservation Programs

The City implements several programs to reduce the consumption of water to its commercial, industrial, and institutional customers. The activities of these various programs are described below. Implementation of these programs is expected to help the City achieve its water use targets by reducing the amount of water consumed by its non-residential customers.

9.2.2.1 Irrigation Water “Budgets”

The City has developed water “budgets” for the majority of its dedicated irrigation accounts (including those owned by the City). These budgets were created using the City’s geographical information system (GIS) to determine irrigated landscape area, and then field verified for accuracy. The budget reports, produced monthly, show the site’s actual water use compared to the estimated water use based on site demographics. If a site’s water usage is significantly greater than expected, City staff may request the site’s owner complete a site water audit.

9.2.2.2 Irrigation Audit

Similar to Water Wise House Calls, the City provides a free landscape audit services for irrigation customers upon request. Staff evaluates the irrigation system and makes recommendations for improvement. Rebates are available to further incentivize the customer to make improvements to their irrigation systems.

The City will continue to implement this program, and will consider expansion based on the past years’ participation.

9.2.2.3 Night Patrols

Over the past two years, the City has implemented a Night Patrol program during peak water usage months that helps to identify commercial water waste after normal business hours. Patrols are typically conducted several nights per week.

9.2.2.4 Commercial Cash for Grass

Similar to the Residential Cash for Grass Program, the City offers rebates to commercial customers for replacing turf with water efficient landscaping. Commercial customers can receive \$1.50 per square foot up to \$2,500.

Chapter 9

Demand Management Measures



9.2.2.5 Commercial High Efficiency Toilet Replacement Program

Similar to the Residential High Efficiency Toilet Replacement Program, commercial customers can receive up to \$175 for replacing an older (pre-1992), non-conserving toilet with a new 1.28 gallon per flush model.

9.2.2.6 Customized Rebate Program

In addition to the above rebates, the Customized Rebate Program helps commercial, industrial, and institutional customers save money with financial incentives on capital expenditures for retrofit of existing equipment with more water-efficient technologies. This program applies to hardware upgrades including equipment and technology for space cooling, refrigeration, laundry, cleaning, and flushing. The customized rebate amount is derived by measuring current usage of the process compared to the water usage of the new retrofitted process. Water savings are estimated using the number of days operated per year and the expected life of the equipment (capped at 10 years). Total amount of saved water is rebated at \$0.50 per 100 Cubic Feet. Rebates will be paid on a first-come, first served basis until program funds are depleted.

9.2.2.7 Commercial Landscape Water Use Review

The Commercial Landscape Water Use Review offers an assessment of irrigation areas to identify inefficiencies and make recommendations for improvement. Water use history is reviewed with landscape managers and watering schedules are prepared to suit the landscape. Comprehensive reports are provided summarizing all finding and recommendations.

9.2.2.8 Commercial Interior Water Use Audit

The Commercial Interior Water Use Audit assists commercial properties in lowering water, wastewater, and energy costs. A facility review identifies equipment inefficiencies and provides a detailed report of all inefficiencies and corresponding recommendations.

9.3 PLANNED IMPLEMENTATION TO ACHIEVE WATER USE TARGETS

In most instances, helping customers understand the savings that can be achieved and methods available to achieve these savings is enough to motivate change. Through the above DMMs, the City can help customers identify these savings, which in turn helps the City to achieve its water use targets. Additionally, the City will continue to work with the Parks Department, area school districts, landscape contractors, and property managers to improve water use efficiency.

9.4 MEMBERS OF THE CALIFORNIA URBAN WATER CONSERVATION COUNCIL

In 1991 (amended September 16, 1999), an MOU regarding urban water conservation in California was made that formalizes an agreement between DWR, water utilities, environmental organizations, and other interested groups to implement Best Management Practices (BMPs) and make a cooperative effort to reduce the consumption of California's water resources. This MOU is administered by the CUWCC.

Chapter 9

Demand Management Measures



In 1991, Roseville became a voluntary signatory of the CUWCC's MOU. Since becoming a signatory to the MOU, the City has implemented and promoted its water use efficiency programs to help customers reduce water demand. The City reports to the CUWCC on its coverage of the recommended BMPs on a fiscal year basis.

The Urban Water Management Planning Act (Water Code Section 10631 (j)) allows for an urban retail water agency that is a signatory (member) of the CUWCC to meet the DMM requirements by documenting that the CUWCC has determined the urban water agency is complying (coverage) with all of the provisions of the MOU. Documentation of the City's compliance is provided in Appendix L.

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CHAPTER 10

Plan Adoption, Submittal, and Implementation



This chapter provides information regarding the notification, public hearing and adoption of the Plan.

10.1 INCLUSION OF ALL 2015 DATA

Because 2015 is the first compliance year for SB X7-7, the 2015 UWMPs must contain data through the end of 2015. If a water supplier bases its accounting on a fiscal year (July through June) the data must be through the end of the 2015 fiscal year (June 2015). If the water supplier bases its accounting on a calendar year, the data must be through the end of the 2015 calendar year (December 2015).

As indicated in Chapter 1, the City uses a calendar year for water supply and demand accounting, and therefore this 2015 UWMP includes data through December 2015.

10.2 NOTICE OF PUBLIC HEARING

The City provided 60-day notice of the preparation of its 2015 UWMP, and notice of the 2015 UWMP Public Hearing to the cities and counties listed in Table 10-1.

Table 10-1. Retail: Notification to Cities and Counties (DWR Table 10-1)

City Name	60 Day Notice	Notice of Public Hearing
Roseville	☒	☒
County Name	60 Day Notice	Notice of Public Hearing
Placer County	☒	☒

Other agencies notified included the following:

- PCWA
- SJWD
- USBR
- City of Citrus Heights

Public hearing notifications for adopting the Plan were published in the local newspaper (_____) and on the City's website. Copies of the published Notice of Public Hearing are included in Appendix D.

Chapter 10

Plan Adoption, Submittal, and Implementation



10.3 PUBLIC HEARING AND ADOPTION

The City has encouraged community and public interest involvement in the Plan update through the use of mailings, public meetings, and web-based communication. Copies of the City's outreach efforts are included in Appendix D.

The public hearings provided an opportunity for all City water users and the general public to become familiar with the Plan and ask questions about its water supply, in addition to the City's continuing plans for providing a reliable, safe, high-quality water supply. Copies of the draft Plan were made available for public inspection on the City's website. The public hearing was held on May 18, 2016.

This Plan was adopted by the City Council on June 1, 2016. A copy of the adoption resolution is provided in Appendix M.

10.4 PLAN SUBMITTAL

A copy of this 2015 UWMP will be submitted to DWR within 30 days of adoption and by July 1, 2016. The adopted 2015 UWMP will be submitted electronically to DWR using the WUEdata submittal tool. A CD or hardcopy of the adopted 2015 UWMP will also be submitted to the California State Library.

No later than 30 days after adoption, a copy of the adopted 2015 UWMP, including the Water Shortage Contingency Plan, will be provided to the cities and counties to which the City provides water.

10.5 PUBLIC AVAILABILITY

No later than 30 days after submittal to DWR, copies of this Plan will be available for public review at the City's public offices. An electronic copy of this Plan will also be available for review and download on the City's website: <https://www.roseville.ca.us/>.

10.6 PLAN IMPLEMENTATION

This Plan will be the source document for any Senate Bill 610 Water Supply Assessments or Senate Bill 221 Water Supply Verifications required for any proposed projects between 2016 and 2020 that are subject to the California Environmental Quality Act (CEQA) and would demand an amount of water equivalent or greater than the amount of water required by a 500 dwelling unit project. This Plan will also be the source document for water demand projections and water supply availability. Lastly, this Plan will provide guidance and direction on development of new local supplies and implementation of water conservation programs and recycled water expansion to meet the requirements of the WC Act.

10.7 AMENDING AN ADOPTED UWMP

If the City amends its 2015 UWMP, copies of amendments or changes to the plans will be submitted to DWR, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.



PUBLIC UTILITIES COMMISSION

Title: Roseville Electric Utility Legislative Update

Meeting Date: 4/26/2016
Item #: 5.5.

ATTACHMENTS:

Description

Roseville Electric Utility Legislative Update



Legislative Update

Shawn Matchim
Electric Regulatory Compliance Administrator
April 26, 2016

City of Roseville, California



2016 Legislative Session

- January 4 - Legislature reconvened
- February 19 - Last day bills introduced
- June 3 - Last day bills to pass house of origin
- July 1 - July 31 - Summer Recess
- August 31 - Last day for each house pass bills
- September 30 - Last day Governor to sign or veto

City of Roseville, California



Introduced Bills

- Key energy bills of particular interest at this time:
 - AB 2339 (Irwin) Net Energy Metering
 - AB 2699 (Gonzalez) Solar Systems
 - SB 1043 (Allen) Renewable Gas
 - ACA 11 (Gatto) Public Utility Reform Act of 2016

City of Roseville, California



AB 2339

- AB 2339 (Irwin) Net Energy Metering (Oppose Unless Amended)
 - Defines aggregate customer peak demand for the purposes of calculating the net energy metering (NEM) program limit
 - Increases amount of behind-the-meter generation eligible for NEM
 - Impacts local authority and program development

City of Roseville, California



AB 2699

- AB 2699 (Gonzalez) Solar Systems (Watch)
 - Would require by July 2017, the Contractors' State License Board to develop and make available on its internet website a specified "solar energy system disclosure document"

City of Roseville, California



AB 2699 – cont.

- AB 2699 (Gonzalez) Solar Systems (Watch)
 - Require the disclosure document to be provided by the solar company to the consumer prior to completion of a sale, financing or lease of a solar energy system

City of Roseville, California



AB 2699 – cont.

- AB 2699 (Gonzalez) Solar Systems (Watch)
 - Disclosure information about the difference between a solar energy system lease and a solar energy system purchase
 - Consumers are provided an opportunity to address solar energy system disputes

City of Roseville, California



SB 1043

- SB 1043 (Allen) Renewable Gas (Watch)
 - Air Resources Board to consider and adopt policies to significantly increase production and use of renewable gas
 - Identify barriers to the rapid development and use of renewable gas and its funding
 - Bill could potentially impact the operating costs for the Roseville generating facilities

City of Roseville, California



ACA 11

- ACA 11 (Gatto) Public Utility Reform Act of 2016 (Watch)
 - Legislature to reallocate or reassign all or a portion of the functions of the California Public Utilities Commission to other state agencies, departments, and boards
 - Legislature to adopt appropriate structures to provide greater accountability for the public utilities of the state

City of Roseville, California



ACA 11 – cont.

- ACA 11 (Gatto) Public Utility Reform Act of 2016 (Watch)
 - This measure would repeal the provisions of the California Constitution pertaining to the commission effective January 1, 2019
 - This is a constitutional amendment, not subject to normal legislative deadlines and requires 2/3 vote by the legislature

City of Roseville, California



Next Steps

- Actively involved in providing advocacy for legislative hearings
- Working with coalition partners and other utilities to implement strategies on bill advocacy
- Continued involvement with state agency meetings on establishing rulemaking for new legislation

City of Roseville, California