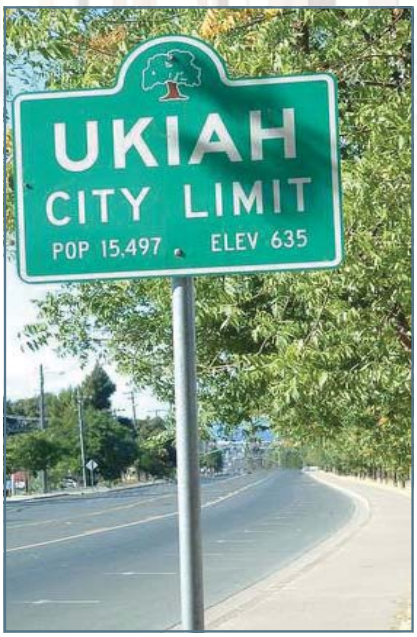

DRAFT
MAY 2016

CITY OF UKIAH

2015 Urban Water Management Plan

WEST YOST ASSOCIATES

City of Ukiah

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Draft
2015 Urban Water Management Plan

Prepared for

City of Ukiah

May 2016

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Table of Contents

Executive Summary

ES.1 Introduction ES-1
ES.2 Water Code Requirements ES-1
ES.3 Legislative Changes from 2010 UWMP ES-2
ES.4 Plan Organization ES-2
ES.5 Plan Review and Adoption ES-3

Chapter 1. Introduction and Overview

1.1 Introduction 1-1
1.2 Importance and Extent of City's Water Management Planning Efforts 1-1
1.3 Changes from 2010 UWMP 1-1
1.4 Plan Organization 1-3

Chapter 2. Plan Preparation

2.1 Basis for Preparing a Plan 2-1
2.2 Regional Planning 2-1
2.3 Individual or Regional Planning and Compliance 2-1
2.4 Fiscal or Calendar Year and Units of Measure 2-2
2.5 Coordination and Outreach 2-2
2.5.1 Wholesale and Retail Coordination 2-3
2.5.2 Coordination with Other Agencies and the Community 2-3
2.5.2.1 Coordination with other Agencies 2-3
2.5.2.2 Coordination with the Community 2-3
2.5.3 Notice to Cities and Counties 2-4

Chapter 3. System Description

3.1 General Description 3-1
3.2 Service Area 3-1
3.3 Service Area Climate 3-2
3.3.1 Climate Change 3-3
3.4 Service Area Population and Demographics 3-3
3.4.1 Service Area Population 3-3
3.4.2 Service Area Demographics 3-4

Chapter 4. System Water Use

4.1 Recycled versus Potable and Raw Water Demand 4-1
4.2 Water Uses by Sector 4-1
4.3 Distribution System Water Losses 4-4
4.4 Estimating Future Water Savings 4-4
4.5 Water Use for Lower Income Households 4-5
4.6 Climate Change 4-5

Chapter 5. SB X7-7 Baselines and Targets

5.1 Updating Calculations from 2010 UWMP 5-1
5.2 Baseline Periods 5-1
5.3 Service Area Population 5-2
5.4 Gross Water Use 5-2
5.5 Baseline Daily Per Capita Water Use 5-3
5.6 2015 and 2020 Targets 5-3
5.7 2015 Compliance Daily Per Capita Water Use (GPCD) 5-4
5.8 Regional Alliance 5-4

Chapter 6. System Supplies

6.1 Purchased or Imported Water 6-1
6.2 Groundwater 6-1
6.2.1 Basin Description 6-1
6.2.2 Groundwater Management 6-2
6.2.2.1 Groundwater Sustainability 6-2
6.2.3 Overdraft Conditions 6-3
6.2.4 Groundwater Pumping 6-3
6.3 Surface Water 6-4
6.3.1 Surface Water Rights 6-4
6.3.2 Surface Water Supply 6-5
6.4 Stormwater 6-5
6.5 Wastewater and Recycled Water 6-6
6.5.1 Recycled Water Coordination 6-6
6.5.2 Wastewater Collection, Treatment, and Disposal 6-6
6.5.3 Recycled Water System 6-8
6.5.4 Recycled Water Beneficial Uses 6-8
6.5.4.1 Current and Planned Uses of Recycled Water 6-8
6.5.4.2 Planned Versus Actual Use of Recycled Water 6-9
6.5.5 Actions to Encourage and Optimize Future Recycled Water Use 6-10
6.6 Desalinated Water Opportunities 6-10
6.7 Exchanges or Transfers 6-10
6.8 Future Water Projects 6-11
6.9 Summary of Existing and Planned Sources of Water 6-11
6.10 Climate Change Impacts to Supply 6-12

Chapter 7. Water Supply Reliability Assessment

7.1 Constraints on Water Sources 7-1
7.1.1 Physical 7-1
7.1.2 Legal 7-1
7.1.3 Environmental 7-1
7.1.4 Water Quality 7-2
7.1.5 Climate 7-2

7.2 Reliability by Type of Year 7-2
7.3 Supply and Demand Assessment 7-3
7.3.1 Normal Year 7-3
7.3.2 Single Dry Year 7-4
7.3.3 Multiple Dry Year 7-5
7.4 Regional Supply Reliability 7-5

Chapter 8. Water Shortage Contingency Planning

8.1 Stages of Action 8-1
8.2 Prohibitions on End Uses 8-1
8.3 Penalties, Charges, Other Enforcement of Prohibitions 8-3
8.4 Consumption Reduction Methods 8-3
8.5 Determining Water Shortage Reductions 8-3
8.6 Revenue and Expenditure Impacts 8-3
8.6.1 Use of Financial Reserves 8-4
8.6.2 Drought Rate Structures and Surcharges 8-4
8.6.3 Other Measures 8-4
8.7 Resolution or Ordinance 8-5
8.8 Catastrophic Supply Interruption 8-5
8.9 Minimum Supply Next Three Years 8-5

Chapter 9. Demand Management Measures

9.1 Water Conservation Program Overview 9-1
9.2 Demand Management Measures 9-1
9.2.1 Water Waste Prevention Ordinances 9-2
9.2.2 Metering 9-2
9.2.3 Conservation Pricing 9-2
9.2.4 Public Education and Outreach 9-3
9.2.5 Programs to Assess and Manage Distribution System Real Loss 9-3
9.2.6 Water Conservation Program Coordination and Staffing Support 9-4
9.3 Other Demand Management Measures 9-5
9.3.1 Large Landscape Irrigation Conservation Program 9-5
9.3.2 Commercial, Industrial, Institutional Customers Conservation Programs 9-5
9.4 Planned Implementation to Achieve Water Use Targets 9-6
9.5 Members of the California Urban Water Conservation Council 9-6

Chapter 10. Plan Adoption, Submittal, and Implementation

10.1 Inclusion of All 2015 Data 10-1
10.2 Notice of Public Hearing 10-1
10.3 Public Hearing and Adoption 10-2

10.4 Plan Submittal 10-2
10.5 Public Availability 10-2
10.6 Plan Implementation 10-3
10.7 Amending an Adopted UWMP 10-3

List of Tables

Table 3-1. Monthly Average Climate Data Summary 3-2
Table 3-2. Retail: Population – Current and Projected (DWR Table 3-1) 3-4
Table 4-1. Historical Water Deliveries by Water Use Sector, AF 4-2
Table 4-2. 2015 Water Accounts 4-2
Table 4-3. Retail: Demands for Potable and Raw Water – Actual (DWR Table 4-1) 4-3
Table 4-4. Retail: Demands for Potable and Raw Water – Projected (DWR Table 4-2) 4-3
Table 4-5. Retail: Total Water Demands (DWR Table 4-3) 4-4
Table 4-6. Retail: 12 Month Loss Audit Reporting (DWR Table 4-4) 4-4
Table 4-7. Retail Only: Inclusion in Water Use Projections (DWR Table 4-5) 4-5
Table 5-1. Baselines and Targets Summary (DWR Table 5-1) 5-4
Table 5-2. 2015 Compliance (DWR Table 5-2) 5-4
Table 6-1. Sustainable Groundwater Management Act and Deadlines 6-2
Table 6-2. Groundwater Basin Prioritization for Sustainable Groundwater Management Act 6-3
Table 6-3. Existing Groundwater Supply Wells 6-4
Table 6-4. Retail: Groundwater Volume Pumped (DWR Table 6-1) 6-4
Table 6-5. Retail: Wastewater Collected Within Service Area in 2015 (DWR Table 6-2) 6-6
Table 6-6. Retail: Wastewater Treatment and Discharge Within Service Area in 2015 (DWR Table 6-3) 6-7
Table 6-7. Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area (DWR Table 6-4) 6-9
Table 6-8. Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual (DWR Table 6-5) 6-9
Table 6-9. Retail: Methods to Expand Future Recycled Water Use (DWR Table 6-6) 6-10

Table 6-10. Retail: Expected Future Water Supply Programs (DWR Table 6-7) 6-11
Table 6-11. Retail: Water Supplies – Actual (DWR Table 6-8) 6-11
Table 6-12. Retail: Water Supplies – Projected (DWR Table 6-9) 6-12
Table 7-1. Retail: Basis of Water Year Data (DWR Table 7-1) 7-3
Table 7-2. Retail: Normal Year Supply and Demand Comparison (DWR Table 7-2) 7-4
Table 7-3. Retail: Single Dry Year Supply and Demand Comparison (DWR Table 7-3) 7-4
Table 7-4. Retail: Multiple Dry Years Supply and Demand Comparison (DWR Table 7-4) 7-5
Table 8-1. Retail: Stages of Water Shortage Contingency Plan (DWR Table 8-1) 8-1
Table 8-2. Retail Only: Restrictions and Prohibitions on End Uses (DWR Table 8-2) 8-2
Table 8-3. Retail Only: Stages of Water Shortage Contingency Plan – Consumption Reduction Methods (DWR Table 8-3) 8-3
Table 8-4. Retail: Minimum Supply Next Three Years (DWR Table 8-4) 8-5
Table 10-1. Retail: Notification to Cities and Counties (DWR Table 10-1) 10-1

List of Figures

Figure 3-1. City of Ukiah Current Water Service Area 3-5

Table of Contents

List of Appendices

Appendix A: Legislative Requirements

Appendix B: DWR Urban Water Management Plan Tables

Appendix C: DWR 2015 UWMP Checklist

Appendix D: Notices

Appendix E: DWR Water Audit

Appendix F: SB X7-7 Compliance and Verification Forms

Appendix G: Technical Memorandum on Water Supply, Rights, and Reliability (Wagner & Bonsignore)

Appendix H: 2014 Annual Water Quality Report

Appendix I: Water Shortage Emergency Plan

Appendix J: Water Shortage Emergency Ordinance and Resolution

Appendix K: UWMP Adoption Resolution

List of Acronyms and Abbreviations

AB	Assembly Bill
Act	Urban Water Management Act
AF	Acre-Feet
AFY	Acre-Feet Per Year
AWT	Advanced Wastewater Treatment
Baseline GPCD	Baseline Gallons Per Capita Per Day
Basin	Ukiah Valley Groundwater Basin
BMP	Best Management Practice
CCR	California Code of Regulations
CDoF	California Department of Finance
cfs	Cubic Feet Per Second
CII	Commercial, Industrial, and Institutional
CIMIS	California Irrigation Management Information System
City	City of Ukiah
CUWCC	California Urban Water Conservation Council
CWC	California Water Code
DEIR	Draft Environmental Impact Report
DMMs	Demand Management Measures
DWR	Department of Water Resources

DWR 2015 Guidebook	2015 Urban Water Management Plans Guidebook for Urban Water Suppliers
ETo	Reference Evapotranspiration
Flood Control District	Mendocino County Russian River Flood Control and Water Conservation Improvement District
GHG	Greenhouse Gas
GPCD	Gallons Per Capita Per Day
GPM	Gallons Per Minute
LID Manual	Low Impact Development Technical Design Manual
MGD	Million Gallons Per Day
MOU	Memorandum of Understanding
NPDES	National Pollutant Discharge Elimination System
PWS	Public Water System
RUWMP	Regional Urban Water Management Plan
SB X7-7	Water Conservation Act of 2009
SOI	Sphere of Influence
UVSD	Ukiah Valley Sanitation District
UWMP	Urban Water Management Plan
UWWTP	Ukiah Wastewater Treatment Plant
West Yost	West Yost Associates

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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 in support of providing water service to existing customers and future development in accordance with adopted General Plans and established Spheres of Influence.

With the current unprecedented water supply conditions in California, development of the 2015 UWMPs comes at a pivotal time. Current 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. With the improving economy statewide, the need for reliable water supplies to serve existing customers, as well as new development, is more critical than ever. Also, 2015 is the first compliance year 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 Ukiah (City's) residents and businesses have responded positively to the call for water conservation and 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. With its 2015 actual per capita water use of 141 gallons per capita per day (GPCD), the City has met its interim 2015 per capita water use target of 209 GPCD by a substantial margin, and can be expected to meet its final 2020 water use target per capita water demand of 186 GPCD by continuing its efficient water use practices, recycled water program, and effective demand management.

ES.2 WATER CODE REQUIREMENTS

The Urban Water Management Planning Act (UWMP Act) requires water suppliers that provide over 3,000 acre-feet per year or have over 3,000 connections to 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 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.

In 2015, the City supplied approximately 2,534 acre-feet of water to approximately 4,781 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 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 contains the appropriate sections and tables required per California Water Code Division 6, Part 2.6 (Urban Water Management Planning Act), included in Appendix A of this 2015 UWMP, and has been prepared based on guidance provided by the DWR in their March 2016 "2015 Urban Water Management Plans, Guidebook for Urban Water Suppliers" (DWR 2015 Guidebook).

DWR's Urban Water Management Plan Checklist, as provided in the DWR 2015 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 Assessment
- 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 Verification Form.

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 June 1, 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 its water supply and 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 Manager'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 _____. A copy of the adoption resolution is provided in Appendix K.

Within 30 days of Plan adoption, a copy of the Plan was submitted to DWR, the California State Library and the cities and counties to which the urban water supplier provides water.

Within 30 days of submitting the adopted Plan to DWR, copies of this Plan will be made available during normal business hours at the following locations:

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

A copy of the adopted Plan will also be available for review and download on the City's website: http://www.cityofukiah.com/.

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 Ukiah (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 (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 has had a long history of providing clean and reliable water to its customers. Production wells and extensive water rights meet the needs for water in the community. 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 was the Water Conservation Act of 2009, also known as Senate Bill Seven of the Senate's Seventh Extraordinary Session of 2009 (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.

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 (DWR) 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.
- The City has opted to not report passive savings in this 2015 UWMP.

- 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 contains the appropriate sections and tables required per California Water Code Division 6, Part 2.6 (Urban Water Management Planning Act), included in Appendix A of this 2015 UWMP, and has been prepared based on guidance provided by the DWR in their March 2016 "2015 Urban Water Management Plans, Guidebook For Urban Water Suppliers" (DWR 2015 Guidebook).

This 2015 UWMP is organized into the following chapters:

- Chapter 1: Introduction and Overview
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- Chapter 7: Water Supply Reliability Assessment
- 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: Legislative Requirements
- Appendix B: DWR Urban Water Management Plan Tables
- Appendix C: DWR 2015 UWMP Checklist
- Appendix D: Notices
- Appendix E: DWR Water Audit
- Appendix F: SB X7-7 Compliance and Verification Forms
- Appendix G: Technical Memorandum on Water Supply, Rights, and Reliability (Wagner & Bonsignore)
- Appendix H: 2014 Annual Water Quality Report
- Appendix I: Water Shortage Emergency Plan
- Appendix J: Water Shortage Emergency Ordinance and Resolution
- Appendix K: UWMP Adoption Resolution

Furthermore, this 2015 UWMP contains all of the tables recommended in the DWR 2015 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 DWR 2015 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 of water annually (AFY).

A Public Water System (PWS) is a system that provides drinking water for human consumption. The City manages PWS CA2310003. As shown in Table 2-1, the City provided water supplies to 4,781 customer connections and supplied 2,534 acre-feet (AF) of water in 2015. Therefore, the City is required to prepare an UWMP. The City's last UWMP, the 2010 UWMP, was adopted by the City Council in June 2011.

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
CA2310003	Ukiah, City of	4,781	2,534
	TOTAL	4,781	2,534
NOTES: Volumes are in AF.			

2.2 REGIONAL PLANNING

As described in Section 2.3 below, the City has prepared this 2015 UWMP on an individual reporting basis, not part of a regional planning process.

2.3 INDIVIDUAL OR REGIONAL PLANNING AND COMPLIANCE

This 2015 UWMP has been prepared on an Individual Reporting basis covering only the City's service area (Table 2-2). The City does not participate in a regional alliance, and it has not prepared a Regional Urban Water Management Plan (RUWMP). 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**		
	☐	Water Supplier is also a member of a RUWMP	
	☐	Water Supplier is also a member of a Regional Alliance	
☐	**Regional Urban Water Management Plan (RUWMP)**		

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, with the calendar year starting on January 1 and ending on December 31 of each year. Water use and planning data for the entire calendar year of 2015 has been included.

The water volumes in this 2015 UWMP are reported in units of AF.

The City's reporting methods for this 2015 UWMP are summarized in Table 2-3.

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 (select from Drop down)	
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. These 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 is a retail agency that does not receive water supply from a wholesaler, therefore, DWR Table 2-4 is not included.

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)*
>
> *(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 draws water from the Russian River and the Ukiah Valley Groundwater Basin. The City shares these water sources with several agencies including: Redwood Valley County Water District, Willow County Water District, Millview County Water District, Calpella County Water District, Rogina Water Company, Mendocino County Russian River Flood Control and Water Conservation District (Flood Control District), Mendocino County Water Agency, and Sonoma County Water Agency. As indicated below, these and other agencies, as well as the public, participated in the coordination and preparation of this 2015 UWMP.

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 encouraged community and public involvement in the 2015 UWMP update. 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.

Public noticing, pursuant to Section 6066 of the Government Code, was conducted prior to commencement of a 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 and at City offices and library.

The public hearing 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.

The organizations that were notified and solicited for input in Plan preparation include:

- City of Ukiah
- Ukiah Chamber of Commerce
- County of Mendocino
- Mendocino County Local Agency Formation Commission
- Mendocino County Planning and Building Services
- Mendocino County Water Agency
- Mendocino Environmental Center
- Sonoma County Water Agency
- Redwood Valley County Water District
- Millview County Water District
- Willow County Water District
- Calpella County Water District
- Rogina Water Company
- Mendocino County Russian River Flood Control and Water Conservation Improvement District

2.5.3 Notice to Cities and Counties

Water Code §10621(b)

Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

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 describes the City's water system and service area. This includes information of the water system facilities, climate, population, and housing within the City's service area.

3.1 GENERAL DESCRIPTION

The City is located in Mendocino County in the northern coastal region of California. The City is situated in the Yokayo (Ukiah) Valley approximately 60 miles north of Santa Rosa, 20 miles south of Willits, and 5 miles south-west of Lake Mendocino. The valley is bordered on the west by the Mendocino Range and on the east by the Mayacamas Mountains. Interstate Highway 101 runs north and south through the City along its eastern boundary. The Russian River flows from north to south through the Ukiah area. The City is the county seat for Mendocino County.

Originally part of a Mexican Land Grant, the City began its history as a valley settlement in 1856. Lumber production became a major industry by the end of the 1940s because of the City's moderate climate and productive soil; currently, agriculture is the largest industry in Ukiah and the rest of Mendocino County. Ukiah is home to wineries, grape vineyards, pear orchards, wood production plants, and non-agricultural manufacturers.

The incorporated area of the City is governed by a five-person City Council in a Council- Mayor-Manager form of government. The Mayor is selected by the City Council each year from the five member Council. General administration and day-to-day operations are directed by the City Manager who is appointed by the Council. The City is a general law municipality, governed by the State of California in conjunction with its local ordinances.

The City water system is responsible for delivering treated water to residential, commercial, and agricultural customers. As of 2015, the system serves about 4,781 connections within the City boundaries. Although the City serves most of the residents within the City limits, a minor amount (less than 1 percent) of City residents are served by other water systems.

3.2 SERVICE AREA

The City's current water service area is predominantly within the City boundaries. Water demand within the City's service area correlates with land use, which is primarily residential, but also includes commercial/institutional, and industrial land use.

In the future, the City's water service area may expand to the "Sphere of Influence" (SOI) as described in the City's General Plan. The SOI is an unincorporated area that represents the land limits to which the City may extend its services and project its growth over the next 20 years.

The location of the City's current and projected service area boundaries are shown in Figure 3-1.

The City's water distribution system consists of five active wells (four groundwater wells and one surface water well), one surface water (Ranney) collector, the water treatment plant, eight distribution reservoirs, and piping to and within the distribution system.

The existing distribution system is divided into four pressure zones. The main zone, Zone 1 (approximately 97 percent of the system) is served by gravity from the two largest storage tanks. The remaining three smaller zones are supplied by booster pump stations via the main distribution zone.

3.3 SERVICE AREA CLIMATE

The City's climate is influenced by the Pacific Ocean and is divided into wet and dry seasons. Most of the annual precipitation normally falls between November and April. Winters are cool, and below-freezing temperatures occasionally occur. Summers are warm and the frost-free season is fairly long. Average annual precipitation in the Ukiah area is 37.26 inches.

Water use within the City's service area is dependent on various climate factors such as temperature, precipitation, and evapotranspiration (ETo). Climate data, including temperature and precipitation estimates, were obtained from the Western Regional Climate Center in Ukiah, California. The period of record was January 1, 1893 to May 24, 2013.

ET describes the combined water lost through evaporation from the soil and surface-water bodies and plant transpiration. In general, the ETo is given for turf grass, and then corrected for a specific crop type. Local ETo data was obtained from the California Irrigation Management Information System (CIMIS) Station 106 (Sanel Valley).

The historical climate characteristics affecting water management in the City's service area is shown in Table 3-1.

Table 3-1. Monthly Average Climate Data Summary

Month	Standard Monthly Average ETo, inches	Average Total Rainfall, inches	Average Temperature, degrees Fahrenheit	
			Max	Min
January	1.26	7.85	56.5	35.5
February	1.81	6.52	60.6	37.7
March	3.28	4.75	64.6	39.0
April	4.65	2.35	70.1	41.2
May	6.29	1.07	76.8	45.4
June	7.32	0.35	84.3	50.3
July	7.92	0.04	92.7	53.5
August	7.03	0.08	92.1	52.3
September	5.23	0.45	87.0	49.0
October	3.40	1.90	77.0	44.0
November	1.53	4.66	64.2	39.0
December	1.03	7.24	56.5	35.8
Totals	50.75	37.26	73.5	43.6

(a) Source: California Irrigation Management Information System (CIMIS) data for Sanel Valley station 106 (downloaded January 28, 2016)

(b) Source: Western Regional Climate Center (www.wrcc.dri.edu) data for Ukiah station 049122 (period of record: June 1, 1902 to January 31, 2013)

3.3.1 Climate Change

The DWR 2015 Guidebook recommends urban water suppliers include a discussion of climate change in their UWMPs. The City's Climate Action Plan (2012) inventories City Greenhouse Gas (GHG) emissions, establishes an emissions reduction target, and outlines strategies to meet these goals. The full public draft report is available at http://www.cityofukiah.com/NewWeb/wp-content/uploads/2013/05/Final-Draft-Climate-Action-Plan.pdf.

The California Adaptive Planning Guide (2012) projects temperature increases throughout the North Coast region. By 2100, January temperatures are projected to increase by 5°F, and July temperatures are projected to increase by 6°F. The number of heat waves, defined regionally as five consecutive days with temperatures as high as 93°F, is not expected to increase within the City. Snowpack is projected to decrease significantly throughout the North Coast region, and precipitation in Ukiah is projected to decrease 10 percent by 2050. The City is not susceptible to the projected rise in sea level associated with global climate change. Public health and safety and sensitive species (e.g., coho salmon) will likely be impacted by climate change. The City has seven adaptation planning strategies for mitigating climate change impacts to residents, businesses, agriculture, infrastructure, biodiversity and public health[1].

3.4 SERVICE AREA POPULATION AND DEMOGRAPHICS

3.4.1 Service Area Population

The City's current (2015) population is derived from United States Census Bureau data. Three water districts surround the city, but they deliver water to a minor amount (less than 1 percent) of City residents. Because the City's water service area boundary is less than 1 percent different than the City limits, California Department of Finance (CDoF) population data for the City is used as the service area population. The CDoF uses an analysis of 2010 census data to update city population estimates for 2001-2015. Service area population is used to determine per capita water use (Chapter 5).

Current and projected service area population is summarized in Table 3-1. The California Department of Finance estimates the City's 2015 population to be 16,073 residents. Based on recent periods of slow growth, population decline, future annexation plans, the projected future service area population was calculated assuming an annual population growth rate of 1 percent. The City considers this the maximum expected growth rate over the next 40 years.

Because very little vacant land remains in the current City limits, the City permits medium- and high-density residential development in its commercial zoning districts. In the City, 518 residential housing units were built between 1990 and 2011. Of those residential housing units, 169 were single family residential units, and 349 were multiple family units[2]. The City's SOI represents the land limits to which the City may extend its services over the next 20 years.

[1] City of Ukiah Climate Action Plan, March 12, 2014

[2] City of Ukiah General Plan Housing Element Update, March 2011

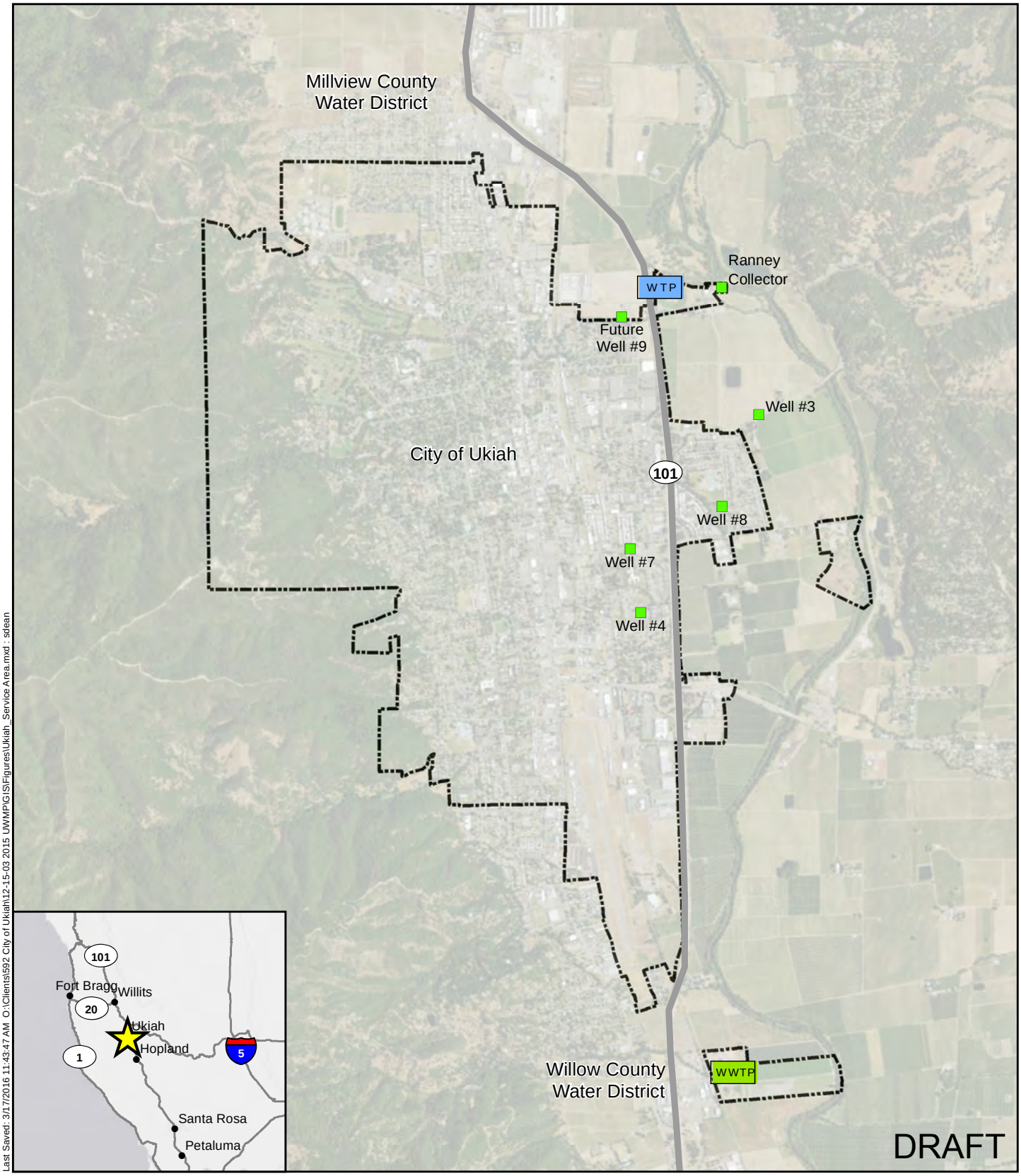
Table 3-2. Retail: Population – Current and Projected (DWR Table 3-1)

Table 3-1 Retail: Population - Current and Projected						
Population Served	2015	2020	2025	2030	2035	2040*(opt)*
	16,073	16,893	17,754	18,660	19,612	20,612
NOTES: Volumes are in AF. 2015 population reported from California Department of Finance. 2020-2040 population growth projected at a rate of 1 percent per year.						

3.4.2 Service Area Demographics

Ukiah is a unique rural city in an exceptionally beautiful setting. It has a diverse community with a variety of cultural influences. There is a significant senior population and a growing Hispanic population[3]. There are no specific community demographics that require special water supply planning.

[3] City of Ukiah General Plan Housing Element Update, March 2011



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Symbology

- Water Service Area
- Well
- WTP — Water Treatment Plant
- WWTP — Wastewater Treament Plant

N

0 1,500 3,000

Feet

City of Ukiah

WEST YOST ASSOCIATES

Figure 3-1

City of Ukiah
Current Water Service Area

City of Ukiah
2015 Urban Water
Management Plan

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CHAPTER 4
System Water Use

This chapter describes and quantifies the City's historical, current and projected water use to the extent that records are available. The terms "water use" and "water demand" are used interchangeably and refer to water conveyed by a distribution system and used by the City and its customers for any purpose.

4.1 RECYCLED VERSUS POTABLE AND RAW WATER DEMAND

The City provides potable 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.

Recycled water is municipal wastewater that has been treated to a specified quality to enable it to be used again. As discussed in Chapter 6, the City treats its wastewater to Title 22 disinfected tertiary recycled water requirements and is constructing a recycled water system. The recycled water system is projected to be in service by 2020. The recycled water system will serve agricultural and landscape irrigation demands both inside and outside of the City's potable water service area.

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.

4.2 WATER USES BY SECTOR

This section describes the City's water use by customer type, or sector, through the year 2040. The City delivers water to the following water use sectors: single-family, multi-family, commercial, institutional/governmental, industrial, landscape irrigation, and other. The City does not have any agricultural customers. For reporting purposes, the City combines commercial and institutional/governmental uses into a single sector, referred to in this 2015 UWMP as "Other (Commercial/Institutional)." Water use by the fire service is reported as "Other (Fire Service)." The remaining "demand" is unaccounted-for system losses, as described below. The City uses the following definitions for each water use 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.
- **Industrial**: A water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development. CWC 10608.12 (h).
- **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.

- **Other (Commercial/Institutional)** A water user that provides or distributes a product or service. CWC 10608.12 (d) (commercial), or, a water user dedicated to public service (institutional/governmental). The institutional/governmental type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions. CWC 10608.12 (i).
- **Other (Fire Service)** A water user that is solely dedicated to servicing fire hydrants and building sprinklers.
- **Distribution System Losses** Distribution system water losses (also known as "real losses") are the physical water losses from the water distribution system and the supplier's storage facilities, up to the point of customer consumption.

The City's historical water deliveries for 2005-2010 are summarized in Table 4-1.

Table 4-1. Historical Water Deliveries by Water Use Sector, AF

Water Use Sector	2005	2010
Single-Family	1,321	738
Multi-Family	1,290	738
Industrial	0	51
Landscape	221	192
Other (Commercial/Institutional)	922	707
Other (Fire)	0	0
Total	3,754	2,427

The City currently serves 4,781 water connections as of December 2015. Of those connections, 80 percent service residential customers. The numbers of accounts in each customer category currently served by the City are shown in Table 4-2.

Table 4-2. 2015 Water Accounts

Customer Class	Number of Accounts in 2015
Single-family Residential	3,249
Multi-Family Residential	573
Industrial	2
Landscape Irrigation	143
Other (Commercial/Institutional)	814
Other (Fire)	0
Total	4,781
Source: DWR 2015 Public Water Systems Statistics	

Water demand by sector for the year 2015 is summarized in Table 4-3. As shown, all of the City's water deliveries were treated to a level of drinking water. The City did not supply water to wholesale customers in 2015. The total water demand for 2015 was 2,534 AF.

Table 4-3. 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
Single Family		Drinking Water	665
Multi-Family		Drinking Water	665
Other	Commercial & Institutional	Drinking Water	594
Industrial		Drinking Water	41
Landscape		Drinking Water	166
Other	Fire Service	Drinking Water	22
Other	Unbilled Metered	Drinking Water	25
Other	Unbilled unmetered	Drinking Water	33
Losses		Drinking Water	323
		TOTAL	2,534
NOTES: Volumes are in AF. Volume for each Water Use Type is based on 2015 Public Water System Statistics.			

Projected water demands by sector through the year 2040 are reported in Table 4-4. Water demand projections in this report assume a 1 percent growth in population, and meeting the 2020 SB X7-7 Target.

Table 4-4. 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
Single Family		924	971	1,021	1,073	1,127
Multi-Family		924	971	1,021	1,073	1,127
Other	Commercial & Institutional	825	867	912	958	1,007
Industrial		57	60	63	66	70
Landscape		231	242	255	268	281
Other	Fire Service	31	32	34	35	37
Losses		528	555	583	613	644
TOTAL		3,520	3,698	3,889	4,086	4,293
NOTES: Volumes are in AF. Volume for each Water Use Type is based on 2015 Public Water System Statistics.						

Actual and projected total water demand from above and recycled water demand from Table 6-7 are summarized in Table 4-5.

Table 4-5. Retail: Total Water Demands (DWR Table 4-3)

	2015	2020	2025	2030	2035	2040 *(opt)*
Potable and Raw Water *From Tables 4-1 and 4-2*	2,534	3,520	3,698	3,889	4,086	4,293
Recycled Water Demand* *From Table 6-4*	0	685	685	685	685	685
TOTAL WATER DEMAND	2,534	4,205	4,383	4,574	4,771	4,978
**Recycled water demand fields will be blank until Table 6-4 is complete.*						
NOTES: Volumes are in AF. Table references refer to DWR table numbers.						

4.3 DISTRIBUTION SYSTEM WATER LOSSES

This section describes the City's distribution system water losses for the most recent 12 month period available. Distribution system water losses are losses from the water distribution system and the City's storage facilities up to the point of customer consumption. A detailed analysis of the system losses was prepared using the DWR Water Audit Method (Appendix E).

The most recent 12 month period began on January 1, 2015. As shown in Table 4-6, City water system losses for 2015 were approximately 323 AF. Projected distribution system losses in five year increments for the years 2020-2040 are included in Table 4-4.

Table 4-6. Retail: 12 Month Loss Audit Reporting (DWR Table 4-4)

Reporting Period Start Date	Volume of Water Loss*
01/2015	323
** Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.*	
NOTES: Volume is in AF.	

4.4 ESTIMATING FUTURE WATER SAVINGS

The DWR 2015 Guidebook suggests that urban water suppliers consider the passive savings from codes, standards, ordinances, or transportation and land use plans. Such water savings decrease the water use for new and future customers.

For the purposes of this 2015 UWMP, the City has opted not to include analysis of passive savings, as indicated in Table 4-7.

Table 4-7. 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)	No
Are Lower Income Residential Demands Included In Projections?	Yes

4.5 WATER USE FOR LOWER INCOME HOUSEHOLDS

A lower income household has an income below 80 percent of an area median income, adjusted for family size. The City's 2009-2014 Housing Element indicates that approximately 67.7 percent of the City's households were Low Income (15.0 percent), Very-Low Income (32.3 percent), or Extremely-Low Income (20.4 percent). The City assumes that gross per capita water demand is equal for all residential housing units regardless of income. Therefore, an estimated 900 AF (67.7 percent) of the City's residential water deliveries (1,330 AF) were to lower income households in 2015.

Projected total water demands described in Section 4.2 include projected water demands for lower income households (Table 4-7). The City assumes that lower income households will continue to represent approximately 67.7 percent of the City's total residential customers through 2040.

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 there are currently no specific requirements related to addressing the potential impacts of climate change. This section includes a discussion of potential climate change impacts on the City's water demand.

The City's Climate Action Plan (2014) inventories City GHG emissions, establishes an emissions reduction target, and outlines strategies to meet these goals. The full report is available from the City website at http://www.cityofukiah.com/NewWeb/wp-content/uploads/2013/05/ Final-Draft-Climate-Action-Plan.pdf.

The City's water demand may be impacted by climate change. For example, wildfire frequency could increase as the climate changes[1]. The City promotes water conservation, repairs leaking infrastructure, and manages water carefully to ensure a reliable water supply for firefighting and other emergencies.

Changing temperatures may affect irrigation and frost protection, the two primary agricultural water demands outside of the City's current service area. Surface water diversions for purposes of frost protection have been shown to have significant effects on salmonid mortality[2]. The City has completed a Recycled Water Feasibility Study and plans to offset nearby agricultural water demand with recycled water.

[1] Department of Water Resources Climate Change Adaptation Strategy, October 2008

[2] City of Ukiah Recycled Water Feasibility Study, December 2012

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CHAPTER 5
SB X7-7 Baselines and Targets

In November 2009, SB X7-7, The Water Conservation Act of 2009, was signed into law 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 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). With its 2015 actual per capita water use of 141 GPCD, the City has met its interim 2015 per capita water use target of 209 GPCD by a substantial margin, and can be expected to meet its final 2020 water use target per capita water demand of 186 GPCD by continuing its efficient water use practices, recycled water program, and effective demand management. The SB X7-7 Verification Forms are included in Appendix F.

5.1 UPDATING CALCULATIONS FROM 2010 UWMP

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 had no recycled water deliveries. Therefore, the City's Baseline GPCD is calculated over a 10-year period. The City has selected a 10-year baseline period of 1995 through 2004 (See Appendix F). This is the same 10-year baseline period reported in the City's 2010 UWMP.

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. The City's 5-year Target Confirmation is calculated for the period 2003 through 2007 (see Appendix F). This is the same 5-year period reported in the City's 2010 UWMP.

5.3 SERVICE AREA POPULATION

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.

Two areas within City limits are served by other water agencies, Millview County Water District and Willow County Water District. The population of the City service area, based on the service area boundary provided by the City, is over 99 percent of the total City population as of the 2010 census. Therefore, Department of Finance population estimates for the City have been used as the water service area population.

Service area population during the current compliance year (2015), and the 10- and 5-year baseline periods are shown 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 City does not deduct indirect recycled water from its gross water use. These values include all of the City's water sources. 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 gross water use and population data in this 2015 UWMP.

As shown in Appendix F, the City's 10-year base daily per capita water use is 233 GPCD. This value is one (1) GPCD greater than the value calculated in the 2010 UWMP.

The City's 5-year base daily per capita water use is 216 GPCD. This value is one (1) GPCD less than the value calculated in the 2010 UWMP.

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 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 April 30, 2009, draft 20x2020 Water Conservation Plan; and
- 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.

The 2015 interim targets for each of the target methods are calculated based on the midpoint of the City's 10-year Baseline GPCD and the 2020 targets calculated for each of the respective target methods. The interim and final targets are summarized in Table 5-1.

Urban water suppliers must verify that their 2020 final water use targets are least a 5 percent reduction from the 5-year Baseline GPCD. As shown in Appendix F, the City's the minimum water reduction for the 2020 final target is 216 GPCD.

The City adopted an SB X7-7 per capita water use 2020 final target of 186 GPCD, based on Target Method 1 (80 percent of base per capita water use).

The interim 2015 target is the midpoint between the City's 10-Year Baseline GPCD (233 GPCD) and the final 2020 target (186 GPCD). Therefore, the City's interim 2015 target is 209 GPCD.

For this 2015 UWMP, the City has selected the same target method as was used in the 2010 UWMP (Method 1). The City understands that this target method may not be changed in any amendments to the 2015 UWMP or 2020 UWMP.

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*	*233*	*209*	*186*
5 Year	*2003*	*2007*	*216*		
*All values are in Gallons per Capita per Day (GPCD)					

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 4 of DWR's *Methodologies* document. As shown in Table 5-2, urban per capita water use in 2015 was 141 GPCD, which is below the 2015 interim water use target of 209 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.

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.

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*		
141	209	0	0	0	0	141	141	Yes
All values are in Gallons per Capita per Day (GPCD)								

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.

This chapter describes the City's supply portfolio including surface water supply, groundwater supply, recycled water supply, and supplies from other agencies. This chapter includes a description of each water source, limitations on each water source, and water quality information. Water volumes discussed below reflect expectations for average year conditions. A technical memorandum on water supply, rights, and reliability (Wagner & Bonsignore, 2011) is included in Appendix G. The following discussion sections describe the existing and projected supply sources available to the City.

6.1 PURCHASED OR IMPORTED WATER

The City purchases water from the Flood Control District. This section describes applicable water rights and volume purchased.

The Flood Control District holds water rights permit 12947B for storage and use of up to 8,000 AFY stored in Lake Mendocino and/or directly diverted from the east fork of the Russian River. The City has a water supply agreement that allows the purchase of up to 800 AFY under the Flood Control District's permit.

In 2015, the City did not purchase water from the Flood Control District. In the future, the city may purchase up to 800 AFY from the Flood Control District.

6.2 GROUNDWATER

The City currently draws groundwater from the Ukiah Valley Groundwater Basin (Basin). This section describes the history and management strategies of the Basin as well as the volume of groundwater pumped by the City.

6.2.1 Basin Description

The City is located within the Basin. The City currently pumps groundwater, and plans to do so in the future. The following groundwater basin description is excerpted from the California DWR Bulletin 118 North Coast Hydrologic Region, Ukiah Valley Groundwater Basin description (last updated 2/27/2004).

> *The Ukiah Valley groundwater basin, located in southeastern Mendocino County, is approximately 22 miles long and 5 miles wide at the widest point, and is the largest of several groundwater basins along the Russian River. The basin is part of the Ukiah and the Redwood Valleys to the north, and their tributary valleys.*
>
> *Based on hydrographs from DWR monitored wells, groundwater levels in the past 30 years have remained relatively stable. During drought conditions there is increased drawdown during summer months and less recovery in winter months. Post-drought conditions rebound to approximately the same levels as pre-drought conditions.*
>
> *Groundwater in storage within the alluvium and younger terrace deposits is estimated to be about 75,000 to 100,000 af (Cardwell 1965). Groundwater in storage within the river-channel deposits between 10 and 50 foot depths is estimated to be 35,000 af based on an average specific yield of 20 percent (Cardwell 1965, DWR 1965). Farrar (1986) estimated that the quantity of groundwater stored in the upper 100 feet of the most productive area of valley fill (Type I) to be about 90,000 af using an average specific yield of 8 percent and an area of 20 square miles. Farrar (1986) also estimated the quantity of groundwater stored along the margins of the valley (Type II area) and underlain by terrace deposits or thin alluvium at 45,000 af. This estimate is based on the upper 100 feet of Type II aquifer materials, an area of 19 square miles, and an average specific yield of 5 percent.*

The document also indicated that there were not sufficient data available to provide an estimate of the basin's water budget.

Based on the historical information available for the Basin, groundwater supplies are expected to adequately meet the City's existing and future demands.

6.2.2 Groundwater Management

A groundwater management plan has not been prepared for the City, Ukiah Valley, or Mendocino County. In the future, the City may consider coordination with other agencies within the Basin to develop a more comprehensive groundwater management plan.

6.2.2.1 Groundwater Sustainability

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 and Deadlines

Implementation Step	Implementation Measure	Deadlines
Step One	Local agencies must form local Groundwater Sustainability Agencies (GSAs) within two years	June 30, 2017
Step Two	Agencies in basins deemed high- or medium-priority must adopt Groundwater Sustainability Plans (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 sub-basins designated by 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 sub-basins 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 Basin is shown in Table 6-2. As shown, the Basin has been ranked as a medium 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
473	1-52	Ukiah Valley	18.5	Medium

[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 either Mendocino County will become the GSA, or the GSA will be formed from a new Joint Powers Authority with representatives from each Basin groundwater pumper. 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 Overdraft Conditions

The Basin is not adjudicated. The Basin is not considered overdrafted, and is not projected to become overdrafted in the near future[1].

6.2.4 Groundwater Pumping

This section details pumping rates for the City's groundwater wells. The Basin provides a reliable high-quality water source for the City. Current and historical trends indicate that there is no long-term decline in water levels that suggest overdraft in the Basin.

The City currently draws groundwater from Wells #4, #7, and #8 and is currently constructing an additional groundwater Well #9. The pumping capacities of the groundwater wells are listed in Table 6-3.

[1] Department of Water Resources Bulletin 118, California's Groundwater (Update 2003)

Table 6-3. Existing Groundwater Supply Wells[a]

Facility	Production Capacity, GPM
Well #4	799[b]
Well #7	799
Well #8	694
Total groundwater well capacity, GPM	2,247
Total groundwater well capacity, AFY	3,700[c]

[a] The City is currently constructing a new groundwater well, Well #9.
[b] Well #4 is currently being rehabilitated. Production capacity may increase once rehabilitation project is complete.
[c] Total groundwater well capacity represents the combined groundwater pumping capacity of Wells #4, #7, and #8 pumping full time to represent a maximum potential capacity.
GPM = gallons per minute

The total groundwater produced for the years 2011 to 2015 is summarized in Table 6-4.

Table 6-4. Retail: Groundwater Volume Pumped (DWR Table 6-1)

Groundwater Type	Location or Basin Name	2011	2012	2013	2014	2015
Alluvial Basin	Ukiah Valley	1,382	1,453	1,397	1,537	1,175
	TOTAL	1,382	1,453	1,397	1,537	1,175

NOTES: Volumes are in AF.

6.3 SURFACE WATER

The City currently uses surface water from the Russian River and plans to do so in the future. This section describes the City's water rights and surface water collection system.

6.3.1 Surface Water Rights

The City has Pre-1914 Appropriative Right for at least 2.8 cubic feet per second (cfs) for diversion from the Russian River for a maximum of 2,027 AFY. This water right is recognized in State Water Rights Board (predecessor to State Water Resources Control Board) Decision 1030.

Additionally, the City holds Water Right Permit 12952 (Application 15704) (Permit) which provides for the diversion of Russian River underflow for municipal purposes. The Permit currently covers Well #2 (no longer in use), Well #3, and the Ranney collector. Under the Permit, water can be diverted at a rate not to exceed 20.0 cfs from January 1 through December 31 with no annual limit. Therefore, the City's water right could provide a water supply of up to 14,480 AFY (20 cfs for 365 days).

The Permit expired on December 31, 2000 and the City filed a Petition for Extension of Time with the State Water Board. The City has also filed petitions to add points of diversion and expand the place of use. The Permit is considered valid while the petitions are processed. In 2013, the City

published a Draft Environmental Impact Report (DEIR) for the proposed Permit amendments. The DEIR is available on the City's website.

6.3.2 Surface Water Supply

The City's surface water supply is obtained from a Ranney collector and Well #3.

The Ranney collector was constructed in 1966 and can draw up to 3,194 GPM (5,155 AFY operated continuously) from the alluvial zone of the Russian River at its current capacity of 4.6 million gallons per day (MGD). The Ranney collector can be used only when turbidity in the Russian River is low, a condition which occurs during dry weather conditions.

Well #3 draws water from an alluvial zone along the Russian River as well. The supply source has been deemed groundwater under the direct influence of surface water by the California Department of Public Health (now the State Water Resources Control Board Division of Drinking Water) pursuant to 22 CCR §64651.10 of the California Water Works Standards. The determination is based on turbidity of the diverted water, which fluctuates with the turbidity in the Russian River. Therefore, water diverted from Well #3 is regulated under the City's surface water right. Well #3 has an estimated pumping capacity of 600 GPM (968 AFY operated continuously).

6.4 STORMWATER

Polluted stormwater runoff can have adverse effects on plants, fish, animals, and people. The state of California requires a National Pollutant Discharge Elimination System (NPDES) permit to regulate stormwater discharges. The City manages stormwater in accordance with its NPDES permit and is in the process of developing a five year stormwater management plan which includes the following six pollution prevention and control activities[2]:

1. Public Outreach and Education
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Storm Water Runoff Control
5. Post Construction Storm Water Management
6. Pollution Prevention and Good Housekeeping for Municipalities

Development of land typically increases impervious surface which can compromise stormwater quality. In 2011, the City of Santa Rosa and County of Sonoma published a Low Impact Development Technical Design Manual (LID Manual). This manual provides technical guidance for redevelopment projects that significantly impact the impervious surface on a redevelopment site, and therefore require permanent stormwater best management practices (BMPs) to offset the impact. The City of Ukiah adopted the LID Manual by Resolution No. 2014-27. For more information about site assessments, projects that trigger LID requirements, and available BMPs,

[2] http://www.cityofukiah.com/stormwater-utility/

including vegetated swales, rain gardens, living roofs, interceptor trees, and many more, the LID Manual is available on the City's website.

6.5 WASTEWATER AND RECYCLED WATER

For the purposes of this UWMP, "recycled water" is defined as municipal wastewater that has been treated and discharged from a wastewater facility for beneficial reuse. This section describes the City's projected collection, treatment, and distribution of recycled water. At the time of publication of this UWMP, the City recently secured grant funding to expand recycled water delivery both inside and outside of its water service area. Recycled water is expected to be delivered inside the service area by 2020. The recycled water delivered outside of the City's service area will not directly offset City potable water use, but will offset other groundwater pumping and river diversions, thus increasing the reliability of the City's use of the groundwater basin and the Russian River diversions.

6.5.1 Recycled Water Coordination

The Ukiah Wastewater Treatment Plant (UWWTP) is responsible for the treatment and disposal of the City's municipal wastewater. The UWWTP is owned and operated by the City. The City coordinates with all local water, wastewater, groundwater, and planning departments and agencies in its recycled water planning.

6.5.2 Wastewater Collection, Treatment, and Disposal

The City operates a wastewater collection system that covers the majority of the City's service area. The Ukiah Valley Sanitation District (UVSD) operates a wastewater collection system for the remaining portion of the service area. The UWWTP receives wastewater from the City and UVSD wastewater collection systems that is generated inside the City's service area boundary. As shown in Table 6-5, the UWWTP collected 2,997 AF of wastewater in 2015.

Table 6-5. Retail: Wastewater Collected Within Service Area in 2015 (DWR Table 6-2)

100	Percentage of 2015 service area covered by wastewater collection system *(optional)*					
100	Percentage of 2015 service area population covered by wastewater collection system *(optional)*					
Wastewater Collection			**Recipient of Collected Wastewater**			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	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? *(optional)*
City of Ukiah	Metered	1,574	City of Ukiah	City of Ukiah WWTP	Yes	No
Ukiah Valley Sanitation District	Metered	1,423	City of Ukiah	City of Ukiah WWTP	Yes	No
Total Wastewater Collected from Service Area in 2015:		2,997				
NOTES: Volumes are in AF.						

The UWWTP includes primary, secondary, and tertiary treatment facilities, as well as solids handling facilities. The tertiary treatment facilities are referred to as the Advanced Wastewater Treatment (AWT) System.

The UWWTP's effluent discharges are regulated by a NPDES permit – Order No. R1-2012-0068, NPDES No. CA0022888. The permit was adopted on August 23, 2012 and expires on September 30, 2017.

The UWWTP discharges disinfected secondary effluent to three percolation/evaporation ponds located at the UWWTP on a year-round basis, and discharges disinfected tertiary effluent to the Russian River as needed during wet weather months. The UWWTP is only permitted to discharge disinfected, tertiary wastewater to the Russian River from October 1 through May 14 at a discharge rate of up to one percent of the total Russian River flow. The Water Quality Control Plan for the North Coast Region prohibits the discharge of treated wastewater from the UWWTP from May 15th through September 30th.

Discharge of treated wastewater effluent is a critical component of the City's water balance. During dry weather months, wastewater flows to the UWWTP are low enough that the full flow is stored in the percolation ponds. During these months, the AWT System is not in operation. During wet weather flows, the AWT System is operated to provide tertiary treatment of flows in excess of that which can be stored in the ponds. The AWT System produces tertiary treated effluent that meets Title 22, Division 4, Chapter 3 California Code of Regulations (CCR) recycled water requirements and is therefore available to be delivered to future recycled water customers. If sufficient wastewater flows were available, the AWT could provide an average annual flow of approximately 7,841 AFY (7 MGD) at full capacity[3]. The City is unlikely to produce recycled water at full capacity because both wastewater flow and recycled water demand are considerably lower than the full capacity of the AWT. As shown in Table 6-6, the AWT treated 1,062 AF in 2015.

Table 6-6. 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
City of Ukiah WWTP	Discharge Point 002	Percolation Ponds	CA0022888	Percolation ponds	No	Secondary, Disinfected - 23	1,971	1,971	0	0
City of Ukiah WWTP	Discharge Point 001	Outfall to Russian River	CA0022888	River or creek outfall	No	Tertiary	1,026	1,026	0	0
						Total	2,997	2,997	0	0
NOTES: Volumes are in AF.										

[3] City of Ukiah, Recycled Water Feasibility Study

6.5.3 Recycled Water System

The UWWTP does not currently deliver recycled water to customers. At the time of preparation of this UWMP, the City recently secured grant funding to expand recycled water delivery both inside and outside of its water service area. For the purposes of this UWMP, recycled water is expected to be delivered inside the service area by 2020.

6.5.4 Recycled Water Beneficial Uses

"Direct beneficial use" of recycled water is defined as recycled water "that has been transported from the point of treatment or production to the point of use without an intervening discharge to waters of the State.[4]" In its 2012 Recycled Water Feasibility Study, the City identified agricultural irrigation and landscape irrigation as potential direct beneficial uses of recycled water in the Ukiah Valley. The Feasibility Study is available on the City's website at: http://www.cityofukiah.com/public-works-downloads/.

6.5.4.1 Current and Planned Uses of Recycled Water

The UWWTP does not currently deliver recycled water to customers.

The Feasibility Study identified a four phase plan to deliver recycled water for agricultural irrigation, landscape irrigation, and industrial uses. The City recently secured grant funding to construct Phases I, II, and III of the plan, including 30,200 feet of pipeline that will deliver recycled water to about 59 parcels both inside and outside the City's water service area. Pending grant funding, Phase IV will also be constructed before 2020. For the purposes of this UWMP, Phases I-IV are included as projected water supply. Through Phase IV, the City is expecting to deliver approximately 1,927 AFY of recycled water to landscape irrigation, golf course irrigation, industrial water use, and agricultural irrigation. Of this 1,927 AFY, approximately 685 AFY will be put to beneficial use within the City's potable water service area as potable water offset to irrigate landscaping and golf courses, as shown in Table 6-7. The remainder will offset other water withdrawals from the Russian River and the Basin.

[4] Code of California Regulations, Title 22, §60301.200

Table 6-7. 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 Ukiah						
Name of Agency Operating the Recycled Water Distribution System:		City of Ukiah						
Supplemental Water Added in 2015		0						
Source of 2015 Supplemental Water		Not Applicable						
Beneficial Use Type	General Description of 2015 Uses	Level of Treatment	2015	2020	2025	2030	2035	2040 (opt)
Agricultural irrigation			0	0	0	0	0	0
Landscape irrigation (excludes golf courses)		Tertiary	0	465	465	465	465	465
Golf course irrigation		Tertiary	0	220	220	220	220	220
Commercial use			0	0	0	0	0	0
Industrial use			0	0	0	0	0	0
Geothermal and other energy production			0	0	0	0	0	0
Seawater intrusion barrier			0	0	0	0	0	0
Recreational impoundment			0	0	0	0	0	0
Wetlands or wildlife habitat			0	0	0	0	0	0
Groundwater recharge (IPR)*			0	0	0	0	0	0
Surface water augmentation (IPR)*				0	0	0	0	0
Direct potable reuse				0	0	0	0	0
Other *(Provide General Description)*			0	0	0	0	0	0
		Total:	0	685	685	685	685	685
*IPR - Indirect Potable Reuse								
NOTES: Volumes are in AF.								

6.5.4.2 Planned Versus Actual Use of Recycled Water

The 2010 UWMP projected that 228 AF of recycled water would be delivered to the City's service area in 2015. A small amount of recycled water was used for process wash-down at the UWWTP, but public access is restricted at the UWWTP. The DWR 2015 Guidebook only allows inclusion of recycled water volumes used for landscaping at a wastewater plant only if public access is not restricted, so 0 AF of recycled water was used inside the service area in 2015 (Table 6-8).

Table 6-8. 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)			0
Golf course irrigation			0
Commercial use			0
Industrial use			0
Geothermal and other energy production			0
Seawater intrusion barrier			0
Recreational impoundment			0
Wetlands or wildlife habitat			0
Groundwater recharge (IPR)			0
Surface water augmentation (IPR)			0
Direct potable reuse			0
Other	*All uses*	288	0
Total		288	0
NOTES: Volumes are in AF. WWTP consumes some secondary recycled water as part of its process. This recycled water use is not included in the table.			

6.5.5 Actions to Encourage and Optimize Future Recycled Water Use

As part of the Feasibility Study, the City identified potential recycled water customers, distributed a recycled water questionnaire, held educational Stakeholder Workshops, quantified recycled water demand, and evaluated project design options. Recently, the City secured funding for the first three phases of their Recycled Water Project. To further encourage recycled water use, the City will provide information to City residents about recycled water use so that the residents are fully informed about recycled water use. As shown in Table 6-9, after 2020, the City does not intend to increase the volume of recycled water used within the City's service area.

Table 6-9. Retail: Methods to Expand Future Recycled Water Use (DWR Table 6-6)

Section 6.5	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Public Outreach	Various ongoing communications	2015	
User Agreements	City actively seals out recycled water users and trains them on proper use of recycled water	2015	
Cost Incentives	City is providing recycled water free of charge	2015	
		Total	0
Actions to expand recycled water use began in 2015 and will continue into the future. Supplier anticipates to complete all construction phases of the current recycled water program prior to 2020. City intends to continue to seek out new users and provide recycled water free of charge.			

To deliver recycled water by 2020, the City plans to:

- Design and construct Recycled Water Project Phase I-III, and
- Secure funding, design and construct Recycled Water Project Phase IV.

6.6 DESALINATED WATER OPPORTUNITIES

The City's surface water and groundwater supplies do not require desalinization. Saltwater intrusion is not expected to occur in the Basin. The City has no immediate plans to explore desalinization opportunities because its surface and groundwater sources are expected to provide adequate long-term supply.

6.7 EXCHANGES OR TRANSFERS

The City does not transfer or exchange water with its neighboring water suppliers. However, the City has emergency intertie agreements with Millview County Water District and Willow County Water District (Chapter 7).

6.8 FUTURE WATER PROJECTS

Although the current water supply sources are considered adequate for existing and projected water demands, the City is actively growing its groundwater and recycled water supply to improve the reliability of the overall water supply.

Construction of groundwater Well #9 is expected to increase the City's water supply by a volume that is yet to be determined.

By 2020, the City plans to deliver 685 AF of recycled water to customers who currently use the City's potable water for landscape and golf course irrigation within the City's service area. Additional recycled water will be delivered outside of the City's service area to properties that currently use private wells or surface water rights for landscape and agricultural irrigation. This additional recycled water is expected to reduce regional demand on the groundwater basin and the Russian River.

The planned projects that increase the City's water supply are summarized in Table 6-10. As shown, these projects will increase supply reliability for all water supply year conditions, which are discussed further in Chapter 7.

Table 6-10. 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
Recycled Water Project Phase I-III	No			2020	All Year Types	80
Recycled Water Project Phase IV	No			2020	All Year Types	605
NOTES: Volumes are in AF. The Recycled Water Project will deliver additional recycled water to customers outside of the City's service area.						

6.9 SUMMARY OF EXISTING AND PLANNED SOURCES OF WATER

A summary of the City's existing sources of water, based on the above description, is provided in Table 6-11.

Table 6-11. 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)*
Surface water	20 cfs direct diversion Jan 1-Dec 31 A012952	1,359	Drinking Water	14,480
Groundwater	Alluvial Groundwater Basin	1,175	Drinking Water	
	Total	2,534		14,480
NOTES: Volumes are in AF.				

A summary of the City's planned sources of water, based on the above description, is provided in Table 6-12.

Table 6-12. 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	Project Water	800	800	800	800	800	800	800	800	800	800
Surface Water	Permit 12952 (Application 15704)	14,480	14,480	14,480	14,480	14,480	14,480	14,480	14,480	14,480	14,480
Surface water	Pre-1914 rights	2,027	2,027	2,027	2,027	2,027	2,027	2,027	2,027	2,027	2,027
Groundwater	Wells	3,700	3,700	3,700	3,700	3,700	3,700	3,700	3,700	3,700	3,700
Recycled Water		685	685	685	685	685	685	685	685	685	685
Total		21,692	21,692	21,692	21,692	21,692	21,692	21,692	21,692	21,692	21,692
NOTES: Volumes are in AF. Projected groundwater supply is based on pumping capacities of existing wells.											

As shown in Table 6-10, based on current well capacities, the City may pump 3,700 AFY of groundwater. As discussed in section 6.8, the City is currently constructing groundwater Well #9 and will continue to construct groundwater wells that will increase the groundwater pumping capacity. The expected increase of groundwater supply from Well #9 or future groundwater wells has not been determined. Based on historical pumping volumes, the City expects the actual volume of groundwater pumped to be much lower than the wells' maximum production capacities.

6.10 CLIMATE CHANGE IMPACTS TO SUPPLY

The Guidebook suggests that UWMPs address potential effects of climate change to water supply. The City's Climate Action Plan (2014) inventories City GHG emissions, establishes an emissions reduction target, and outlines strategies to meet these goals. The full report is available on the City's website.

Neither the Basin nor the Russian River are fed by snowmelt, so the City's supply is not expected to be impacted by reduced snowmelt associated with climate change. The City does not import water from climate sensitive systems outside of the region because the region has sufficient supply to meet current and future demand.

This chapter describes the long term reliability and vulnerability of the City's water supplies. The City's implemented, or planned to be implemented, water management tools for increasing the reliability of water supplies are also addressed.

7.1 CONSTRAINTS ON WATER SOURCES

There are a variety of constraints that can impact water supply reliability. The City evaluated potential physical, legal, environmental, water quality, and climatic effects on its water sources. A full analysis is included in Appendix G. This section describes constraints on the surface water, groundwater, and recycled water supplies as identified by the City at the time of preparation of this 2015 UWMP. As discussed below, it is unlikely that the City will experience a reduction in supply reliability, and all supply sources are generally considered to be available at a consistent level of use.

7.1.1 Physical

A fundamental factor that affects water supply reliability is the hydraulic capacity of supply and distribution system facilities. The current supply and distribution system is considered sufficient for the current and projected demands within the planning horizon of this UWMP. As the City continues to grow, it will construct the additional supply and distribution system facilities necessary to accommodate the increased water demands.

7.1.2 Legal

The City's pre-1914 right to divert from the Russian River provides a reliable supply source, which is unlikely to be interrupted due to legal factors.

The City's Water Right Permit 12952 expired on December 31, 2000. The City filed a petition for extension of time, change in points of diversion, and place of use with the State Water Board; the Permit is still valid while the petition is processed.

The City's agreement with the Flood Control District could be affected by contract changes but is not anticipated to change within the planning horizon of this UWMP.

The Basin is not adjudicated. As discussed in Section 6.2, the Basin is not overdrafted and not anticipated to become overdrafted in the near future. There is a legal presumption that groundwater pumped from a groundwater basin is not subject to appropriation by permit. The City does not waive this legal presumption, therefore, groundwater supply is not expected to be interrupted due to legal factors.

The City's future recycled water supply is not anticipated to be impacted by legal factors.

7.1.3 Environmental

To date, the City's surface water, groundwater, and recycled water supplies have not been impacted by environmental factors, and the City does not anticipate future disruption of supplies as a result of environmental factors.

7.1.4 Water Quality

The quality of existing surface water and groundwater supply sources is expected to be adequate throughout the planning horizon of this UWMP. The quality of the City's water system is regulated by the Department of Public Health which requires regular collection and testing of water samples to ensure that the quality meets regulatory standards and does not exceed maximum contaminant levels. The City performs regular water quality testing and consistently delivers water that is at or below regulatory limits. The most recent Water Quality Report is included in Appendix H, and is available on the City's website. If water quality becomes an issue for water supply reliability in the future, the City will evaluate the need for upgrades to its current treatment system or construction of a new water treatment facility.

7.1.5 Climate

Climatic factors affecting the reliability of a given water supply system generally are a function of seasonal precipitation and runoff characteristics. The Ukiah area receives an average of 37.26 inches of precipitation per a year. The relatively abundant precipitation contributes runoff to the Russian River system and recharges the groundwater basin. During drought conditions, when surface water supplies are limited or unavailable, water supply is available to the City from the groundwater storage basin. Chapter 4 describes the historical and projected characteristics of the groundwater basin and supply sources underlying the City.

Accordingly, it is unlikely that the City's supply reliability would be inhibited by climatic factors, as the groundwater basin can support the City's demand during below-average precipitation periods.

7.2 RELIABILITY BY TYPE OF YEAR

The quantity of supply available from different water supply sources can vary from one year to the next depending on hydrologic conditions. Historical data, where available, were therefore used to develop a projected yield for each water supply source under three conditions: (1) normal water year, (2) single dry year, and (3) multiple dry years. In accordance with the DWR 2015 Guidebook, each condition is defined as follows:

- **Normal Water Year***:* The year, or an averaged range of years, that most closely represents the average water supply available to the City. The terms "normal" and "average" are used interchangeably.
- **Single-Dry Year***:* The year with the lowest annual runoff or allocation in the historical sequence.
- **Multiple-Dry Year***:* The lowest average runoff or allocation for a consecutive 3-year period in the historical sequence.

Years that the City identifies as their historical average, single driest year, and driest multi-year period are shown in Table 7-1 These years are also known as the "Base Years", and represent the availability of all of the City's water supplies combined. The available supplies column specifies the percentage and volume of the water supply expected if there were to be a repeat of the hydrology from that type of year. Although the City is preparing its dry year water supply and demand

comparison by showing a potential 50 percent reduction in available supplies, such a reduction is extremely unlikely. None of the City's water supply sources were curtailed during 2015.

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

Year Type	Base Year *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000*	Available Supplies if Year Type Repeats	
		☐ Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____	
		☑ Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available	% of Average Supply
Average Year	1962	21,692	100%
Single-Dry Year	1977	10,846	50%
Multiple-Dry Years 1st Year	1990	10,846	50%
Multiple-Dry Years 2nd Year	1991	10,846	50%
Multiple-Dry Years 3rd Year	1992	10,846	50%
NOTES: Volumes are in AF. Although the City is presenting the potential for dry year supply reductions, none of the City's supply sources were curtailed in 2015.			

7.3 SUPPLY AND DEMAND ASSESSMENT

In order to make the best determination of the reliability of the City's water supplies, the supply for various types of years are quantified and discussed below. The demands have been projected using the City's projected population growth and adopted SB X7-7 per capita water use target of 186 GPCD for 2020 and subsequent years.

7.3.1 Normal Year

The availability of the City's supplies in Normal Years is described in detail in Chapter 6 and summarized below:

- 2,027 AF of surface water from the City's Pre-1914 Appropriative Right
- 14,480 AF of surface water from the City's Water Right Permit 12952
- 3,700 AF of groundwater
- 800 AF of purchased project water from the Flood Control District

As shown in Table 7-2, the City's Normal Year supplies are adequate to meet projected demands.

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

	2020	2025	2030	2035	2040 *(Opt)*
Supply totals *(autofill from Table 6-9)*	21,692	21,692	21,692	21,692	21,692
Demand totals *(autofill from Table 4-3)*	4,205	4,383	4,574	4,771	4,978
Difference	17,487	17,309	17,118	16,921	16,714
NOTES: Volumes are in AF. Table references refer to DWR table numbers.					

7.3.2 Single Dry Year

In Single Dry Years, although unlikely, the availability of the City's supplies could decrease by up to 50 percent. Therefore, the Single Dry Year availability is assumed to be:

- 1,014 AF of surface water from the City's Pre-1914 Appropriative Right
- 7,240 AF of surface water from the City's Water Right Permit 12952
- 1,850 AF of groundwater
- 400 AF of purchased project water from the Flood Control District

As shown in Table 7-3, even with the conservative assumption of 50 percent supply reduction, the City's Single Dry Year supplies greatly exceed projected demands.

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

	2020	2025	2030	2035	2040 (Opt)
Supply totals	10,846	10,846	10,846	10,846	10,846
Demand totals	4,205	4,383	4,574	4,771	4,978
Difference	6,641	6,463	6,272	6,075	5,868
NOTES: Volumes are in AF.					

7.3.3 Multiple Dry Year

In Multiple Dry Years, although unlikely, the availability of the City's supplies could decrease by up to 50 percent and remain consistent for the duration of the Multiple Dry Year period. Therefore, the Multiple Dry Year availability is assumed to be:

- 1,014 AF of surface water from the City's Pre-1914 Appropriative Right
- 7,240 AF of surface water from the City's Water Right Permit 12952
- 1,850 AF of groundwater
- 400 AF of purchased project water from the Flood Control District

As shown in Table 7-4, even with the conservative assumption of 50 percent supply reduction, the City's Multiple Dry Year supplies greatly exceed projected demands.

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

		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	10,846	10,846	10,846	10,846	10,846
	Demand totals	4,205	4,383	4,574	4,771	4,978
	Difference	6,641	6,463	6,272	6,075	5,868
Second year	Supply totals	10,846	10,846	10,846	10,846	10,846
	Demand totals	4,205	4,383	4,574	4,771	4,978
	Difference	6,641	6,463	6,272	6,075	5,868
Third year	Supply totals	10,846	10,846	10,846	10,846	10,846
	Demand totals	4,205	4,383	4,574	4,771	4,978
	Difference	6,641	6,463	6,272	6,075	5,868
NOTES: Volumes are in AF.						

7.4 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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This chapter describes the City's strategic planning process to prepare for and respond to water shortages. This includes the estimated three-year minimum water supply, the actions and stages described in the water conservation ordinance that will be implemented in the event of a water supply shortage, and the emergency preparedness and plans for catastrophic events. The purpose of a water shortage emergency plan, also known as a water shortage contingency plan, is to help the City maintain reliable supplies and reduce the impacts of supply interruptions. The City adopted its Water Shortage Emergency Plan in 1977 (see Appendix I).

8.1 STAGES OF ACTION

In accordance with California Water Code Section 10632 (a)(1), the City's Water Shortage Emergency Plan includes three stages of action in response to progressively decreasing water supplies, including up to a 50 percent reduction. These stages would be appropriate responses to a drought, emergency supply outage condition, or other water shortages. The City Council can declare a water emergency by resolution.

A summary of the three stages and their water reduction conditions is included in Table 8-1.

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

Stage	Complete Both	
	Percent Supply Reduction[1]	Water Supply Condition
I - Minor Shortage Potential	10-20%	Below average rainfall for 12-24 months, more than 10% of GW Wells out of service.
II - Moderate Shortage Potential	20-35%	Below average rainfall for 24-36 months, more than 10% of GW Wells out of service.
III - Critical Shortage Potential	35-50%	Below average rainfall for more than 36 months, prolonged periods of low water pressure, more than 10% of GW Wells out of service.
[1] One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.		
NOTES: The City's Water Shortage Emergency Plan is also known as a water shortage contingency plan.		

8.2 PROHIBITIONS ON END USES

In accordance with California Water Code Section 10632 (a)(4), the City established different water use prohibitions for each of the three emergency stages. The Water Shortage Emergency prohibits "all nonessential uses" and allocates "the available water supply during any water shortage emergency to the end that sufficient water will be and remain available for human

consumption, sanitation, and fire protection." The definition of nonessential uses adjusts with each water shortage emergency stage.

The Stage I prohibitions include voluntary water conservation measures. The Stage I water emergency restricts application of potable water to outdoor landscapes in a matter that causes runoff, irrigation at a rate that causes ponding or puddling, the use of a hose to wash a motor vehicle unless the hose has a shut-off nozzle, application of potable water onto driveways and sidewalks, and the use of potable water in a decorative water feature except where the water is part of a recirculating system. On August 6, 2014, the City passed a Resolution 2014-31 and declared a Stage I water emergency (Appendix J).

The Stage II and III mandatory prohibitions limit specific uses of water and are summarized in Table 8-2.

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

Stage	Restrictions and Prohibitions on End Users	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
II, III	Other	Prohibit use of water from fire hydrants for any purpose other than fighting fires.	Yes
II, III	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Prohibit use of water from any meter when consumer has been given 2 days notice to repair any leaks and has failed to comply.	Yes
II, III	Other	No golf course watering except tees and greens.	Yes
II, III	Landscape - Prohibit all landscape irrigation		Yes
II, III	Other - Prohibit use of potable water for construction and dust control		Yes
II, III	Other - Prohibit use of potable water for washing hard surfaces		Yes
II, III	Other water feature or swimming pool restriction	No Fill or refill of pools and spas	Yes
II, III	Pools and Spas - Require covers for pools and spas	No Fill or refill of pools and spas without covers	Yes
II, III	Other	No vehicle washing with hoses	Yes
III	Other	Water rationing (SFR or duplex, 50 gpcd; MF 45 gpcd)	Yes
III	Other	Reduce all water use by 50%	Yes
III	Other	Prohibit water to irrigate	Yes
III	Other	Prohibit use of water for hand watering	Yes

8.3 PENALTIES, CHARGES, OTHER ENFORCEMENT OF PROHIBITIONS

The City currently does not have established penalties or charges for excessive water use. During a Stage II or Stage III Water Emergency, any customer violating the prohibitions on water use receives a written warning from the City for the first violation. If the violation continues and the City determines there has been a "willful failure to comply" with the regulations, the City may shut off a customer's water service.

8.4 CONSUMPTION REDUCTION METHODS

In accordance with California Water Code Section 10632 (a)(5), the City may implement consumption reduction methods during water emergency stages. These methods, to be used by the City to reduce water demand, are summarized in Table 8-3.

Table 8-3. Retail Only: Stages of Water Shortage Contingency Plan – Consumption Reduction Methods (DWR Table 8-3)

Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference *(optional)*
All	Provide Rebates on Plumbing Fixtures and Devices	Low flow toilet replacement program
All	Provide Rebates for Turf Replacement	
All	Reduce System Water Loss	Water meter replacement program
II and III	Implement or Modify Drought Rate Structure or Surcharge	Applies to the Mandatory reduction stages

8.5 DETERMINING WATER SHORTAGE REDUCTIONS

The City's primary mechanism for measuring water use, and therefore water use reduction, is water meters. Therefore, to measure the actual reductions in water use during stage of the Water Shortage Emergency Plan, the City will perform frequent water meter readings.

8.6 REVENUE AND EXPENDITURE IMPACTS

Implementation of water emergency stages, enforcement penalties, and consumption reduction methods are likely to impact the City's revenue and expenditures in three ways: (1) reduced water sales, (2) reduced water supply purchase and pumping costs, and (3) increased water conservation education and assistance costs. The net effect of these impacts creates a financial deficit during periods of water shortage[1]. In accordance with the California Water Code

[1] City of Ukiah Final Draft Water Rate Study

Section 10632 (a)(7), the City conducted a Water Rate Study that evaluated the financial impacts of Stages I-III of their Water Shortage Emergency Plan, plus an additional shortage condition of greater than 50 percent reduction in water supply. The purpose of the Water Rate Study was to ensure that water rates were sufficient to meet the water utility's financial and service obligations for ongoing operation and maintenance, debt service, and capital improvements while maintaining service and prudent financial reserves for specified purposes. A copy of the Water Rate Study is available on the City's website. On April 20, 2016, the City conducted a Proposition 218 hearing and adopted the water rates and water shortage surcharges proposed in the Water Rate Study.

The City calculated the following estimated financial deficits, compared to normalized water supply conditions, during each stage of a water emergency:

- Stage I: $588,000
- Stage II: $1,045,000
- Stage III: $1,490,000

As proposed in the Final Draft Water Rate Study, the City plans to use a multi-pronged corrective strategy to recover financial impacts of water shortages. As described below, the City identified three corrective actions to recover the deficits incurred during a water shortage.

8.6.1 Use of Financial Reserves

The City may use Rate Stabilization Reserves to recover all or part of the revenue loss of Stage I-III Water Emergencies.

8.6.2 Drought Rate Structures and Surcharges

The City may implement a temporary water shortage surcharge to recover the revenue loss of a Stage II or Stage III Water Emergency. The customer's monthly service charge is not impacted; the water shortage surcharge is applied to the water usage rate at the following surcharge per unit (a unit is 100 cubic feet):

- Stage II: 15% surcharge
- Stage III: 25% surcharge

8.6.3 Other Measures

The City regularly contributes (transfers) water rate revenue from the Operating Fund to the Capital Replacement Fund to support the capital improvement program. In the most severe water demand reduction conditions, the City may reduce the annual contribution to the Capital Replacement Fund to try and recover revenue loss from a Stage III water emergency.

8.7 RESOLUTION OR ORDINANCE

In 2014, the City adopted Ordinance No. 1150 which updated the definition of a Stage I water emergency by amending Sections 3603 and 3605 of the Ukiah City Code to comply with direction from the State Water Resources Control Board. The City also adopted a Resolution 2014-31 declaring a Stage I water emergency. Copies of these documents are included in Appendix J.

8.8 CATASTROPHIC SUPPLY INTERRUPTION

The City has developed an extensive response plan and has organized its emergency efforts with applicable relief agencies and municipalities in the area; see Division 6, Chapter 2 of the City of Ukiah Municipal code.

8.9 MINIMUM SUPPLY NEXT THREE YEARS

All water agencies are required to provide an estimate of the minimum water supply available during each of the next three water years, 2016, 2017, and 2018 (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 (Section 7.3).

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

	2016	2017	2018
Available Water Supply	10,509	10,509	10,509
NOTES: Volumes are in AF.			

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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.

In previous UWMPs, a substantial amount of data were 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.

9.1 WATER CONSERVATION PROGRAM OVERVIEW

The City actively promotes the reduction of water demand through various water conservation outreach programs. Sections 9.2 and 9.3 include descriptions of DMMs that are currently implemented. The City does not have any upcoming plans to implement new DMMs. The City continually assesses the success of its programs and makes changes to the organization and/or operation of the conservation measures as appropriate.

9.2 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; and
- Water conservation program coordination and staffing support.

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).

9.2.1 Water Waste Prevention Ordinances

The City of Ukiah adopted a water waste prevention ordinance now included in Municipal Code Division 4 Utilities, Chapter 1 Water, Article 7 Service Connections, Meters and Customer's Facilities, Section 3571 Waste of Water, which states:

> *Where negligent or wasteful use of water exists on a customer's premises, seriously affecting the general service, the City may discontinue the service if such conditions are not corrected within five (5) days after giving customer written notice of intent to do so. (Ord. 478, §VIIF, adopted 1954)*

This ordinance has been in place since 1954 and is continually enforced. The City expects to continue to enforce this ordinance through the foreseeable future.

In addition, Article 11 Water Shortage Emergency prohibits "all nonessential uses" and allocates "the available water supply during any water shortage emergency to the end that sufficient water will be and remain available for human consumption, sanitation, and fire protection." The definition of nonessential uses adjusts with each water shortage emergency stage. The water shortage emergency stages and the prohibited water uses are discussed in detail in Chapter 8 Water Shortage Contingency Plan.

Implementation of this DMM is 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.

9.2.2 Metering

The City's water distribution system is fully metered. The City regularly replaces old meters to provide more accurate readings of water use in its service area.

To implement this DMM, the City maintains its meter reading program and continually evaluates replacement of old meters. The City provides support for this DMM with staff time and City resources.

The City implements this DMM on an ongoing, year-round basis. Effectiveness of this DMM is evaluated by comparison of water use before meter retrofit to water use after the meter retrofit. When metered water use increases and unaccounted-for water decreases, the new water meters are probably more accurately recording the actual volume of water delivered to customers. The City does not record number of meter retrofits.

Implementation of this DMM is expected to help the City achieve its water use targets by providing accurate water use information to the customer and the City.

9.2.3 Conservation Pricing

The City started implementing this DMM in 2005 with the development of a water rate schedule that included fixed meter charges based on meter size and variable charges based on consumption, with a single fixed rate per unit of water (commodity pricing).

As discussed in Chapter 8, the City may adopt water rates that include a water shortage emergency surcharge structure, to meet the water utility's financial and service obligations for ongoing operation and maintenance, debt service, and capital improvements. A copy of the Water Rate Study is available on the City's website.

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 and to adequately fund water system operations and maintenance, including repair and replacement programs, and water conservation programs.

9.2.4 Public Education and Outreach

This program consists of distributing information to the public through a variety of methods including brochures, radio and television, school presentations and videos, and web sites, including a school education program that includes providing educational materials and instructional assistance.

The City promotes public awareness of water conservation through occasional bill stuffers, distribution of its Annual Water Quality Report, radio broadcasts, and the City website. In addition, City employees are encouraged to discuss conservation measures with customers. The City offers local school tours of its water treatment plant and provides materials to schools for conservation education. In addition, four science classes on public water supply are offered once a year at the local high school.

The City has implemented this DMM and provides public information programs on water conservation and other water issues on an ongoing, year-round basis. The City understands that public awareness of water conservation issues is an important factor in ensuring a reliable water supply.

The City does not directly measure the effectiveness of this DMM. In general, however, more public awareness and education programs give customers increased knowledge of water conservation opportunities. It is especially important to teach children water conservation practices and to educate them on the important aspects of safe and sustainable water provision.

Implementation of this DMM is expected to help the City achieve its water use targets by educating water users about the importance of improving water use efficiency and avoiding water waste.

9.2.5 Programs to Assess and Manage Distribution System Real Loss

A water audit is a process of accounting for water use throughout a water system to quantify the unaccounted-for water. Unaccounted-for water is the difference between metered production and metered consumption on a system-wide basis. A leak detection program typically consists of both visual inspection and audible inspection. Visual inspection includes the inspection of distribution system appurtenances (e.g., fire hydrants, valves, meters, etc.) to identify obvious signs of leakage. To perform audible leak detection, specialized electronic listening equipment is used to detect the sounds associated with distribution system leakage. This process allows the City to pinpoint the location of suspected leaks.

The City currently performs leak detection and repair on an ongoing basis. Because the City was fully metered in 2005, its system water audit program is thorough and represents an accurate estimate of water system losses. The City calculates system water losses annually and reports this information to DWR. In addition to calculating system losses, the City is in the process of replacing old meters in the system. New meters will provide a more comprehensive portrayal of water use within the City.

To implement this DMM, the City manages an ongoing water system audit program. Steps necessary to implement this DMM include:

- Tracking metered production and delivery values over time to evaluate system losses;
- Compiling annual reports to DWR with unaccounted-for water losses in the system;
- Training staff on system-wide auditing procedures;
- Visual and measured inspection of meter and conveyance infrastructure;
- Replacement of older meters with new meters; and
- Ongoing calibration of water meters to ensure accuracy.

The water system audits and leak detection activities are performed on an ongoing, year-round basis.

The effectiveness of the system water audit program is evaluated through the City's annual report to the DWR. The annual report monitors the unaccounted-for water losses. Any reductions in water loss due to the replacement of old meters and water leak detection and repairs will be reflected in the annual report. The City does not record the number of miles of distribution lines surveyed, nor the expenditures.

Implementation of this DMM is expected to help the City achieve its water use targets by identifying sources of water loss quickly so repairs can be made and losses minimized.

9.2.6 Water Conservation Program Coordination and Staffing Support

The position of water conservation coordinator is an ongoing component of a City's water conservation program. The conservation coordinator position is responsible for implementing and monitoring the City's water conservation activities.

The City has implemented this DMM. In practice, all City staff encourages implementation of water conservation measures by the City's residents. In particular, the Water and Sewer Division provide indoor and outdoor conservation tips for customers. However, the City intentionally calls upon the support of City staff as a whole to perform the duties that would be assigned to an individual conservation coordinator. In this way, coordination can be handled by specialized departments to achieve optimum water conservation.

Water conservation coordination for the City is established by policies determined by the City council and includes answering questions of the public by maintenance and meter reading staff while in the field.

This DMM will be performed on an ongoing, year-round basis.

The effectiveness of this DMM will be evaluated in conjunction with the success of the City's water conservation efforts as a whole.

Implementation of this DMM is expected to help the City achieve its water use targets by making water conservation and implementation of the City's water conservation program a priority to all City employees instead of just one employee.

9.3 OTHER DEMAND MANAGEMENT MEASURES

In addition to the six DMMs described above, the City implements a large landscape irrigation conservation program and a commercial, industrial, institutional water customer conservation program. These two programs are described below.

9.3.1 Large Landscape Irrigation Conservation Program

The City's Planning Department reviews all proposed landscaping plans for new developments. During the review process, the City addresses large landscaping concerns with the developer. Included in the City's Municipal Code is a requirement for all landscape planting to be "those which grow well in Ukiah's climate without extensive irrigation." New developments can only be approved when proposed landscaping plans adhere to the City's Municipal Code. It is through this planning review process that the City manages its large landscape water consumers to ensure responsible water use for new developments.

The City implements this DMM on an ongoing, year-round basis. All new developments are required to adhere to the landscaping ordinances of City's Municipal Code.

The City has very few commercial, industrial, and institutional (CII) accounts and does not track the water use for large landscape consumers. Therefore, the City has not historically tracked the actual water savings associated with the implementation of this DMM. The City has not established other methods of evaluate the effectiveness of this DMM.

Implementation of this DMM is expected to help the City achieve its water use targets by preventing planting of landscaping that would not grow well in Ukiah's climate without extensive irrigation.

9.3.2 Commercial, Industrial, Institutional Customers Conservation Programs

With this DMM, the City would develop a conservation program for CII accounts that includes water audits targeted to the top water users. This program would include surveys of past program participants to determine if audit recommendations were implemented. This program would also include incentives related to the use of efficient water-use technologies.

The City has implemented this DMM.

The City has only three industrial customers, including Mendocino Brewing Company and Maverick Enterprises who make up the majority of the water use in the industrial sector. To implement this DMM, the City surveys the water usage of these industries. Any new commercial, industrial, or institutional developments will be reviewed by the City's Planning Department and must meet all requirements of the City's Municipal Code.

This DMM will continue to be performed on an ongoing basis.

The City has not historically tracked the actual water savings associated with the implementation of this DMM. The City has not established other methods to evaluate the effectiveness of this DMM.

Implementation of this DMM is expected to help the City achieve its water use targets by tracking water use of large industrial customers and alerting the customer to substantial changes in water use that could indicate the need for greater water use awareness within the industrial facility.

9.4 PLANNED IMPLEMENTATION TO ACHIEVE WATER USE TARGETS

As discussed in Chapter 5, the City achieved its 2015 per capita water use targets. The City is committed to the implementation of the above DMMs and plans to continue water conservation efforts into the foreseeable future.

9.5 MEMBERS OF THE CALIFORNIA URBAN WATER CONSERVATION COUNCIL

In 1991 (amended September 16, 1999), an Memorandum of Understanding (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 BMPs and make a cooperative effort to reduce the consumption of California's water resources. This MOU is administered by the California Urban Water Conservation Council (CUWCC). The City is not currently a signatory of the MOU and is therefore not a member of CUWCC.

However, the City realizes the importance of the BMPs to ensure a reliable future water supply. The City is committed to implementing water conservation and water recycling programs to maximize sustainability in meeting future water needs for its customers.

The purpose of this chapter is to provide information regarding 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
City of Ukiah	☑	☑
County Name	**60 Day Notice**	**Notice of Public Hearing**
Mendocino County	☑	☑

Other agencies notified included the following:

- City of Ukiah
- Ukiah Chamber of Commerce
- County of Mendocino
- Mendocino County Local Agency Formation Commission
- Mendocino County Planning and Building Services
- Mendocino County Water Agency
- Mendocino Environmental Center
- Sonoma County Water Agency
- Redwood Valley County Water District

- Millview County Water District
- Willow County Water District
- Calpella County Water District
- Rogina Water Company
- Mendocino County Russian River Flood Control and Water Conservation Improvement District

Public hearing notifications for adopting the Plan were published in the local newspaper (Ukiah Daily Journal) and posted at City facilities. Copies of the published Notice of Preparation and Notice of Public Hearing are included in Appendix D.

10.3 PUBLIC HEARING AND ADOPTION

The City has encouraged community and public interest involvement in the Plan update through the use of public notices and web-based communication.

A public hearing to discuss the Draft 2015 UWMP was held on June 1, 2016, in conjunction with the City Council meeting.

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. 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 City offices, libraries, and City Hall.

This Plan was adopted by the City Council on _____. A copy of the adoption resolution is provided in Appendix K.

10.4 PLAN SUBMITTAL

A copy of this 2015 UWMP, including the Water Shortage Emergency Plan, 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 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 2015 UWMP will be available at local public libraries and the Ukiah City Manager's office for public review during normal business hours. An electronic copy of this Plan will also be available for review and download on the City's website.

10.6 PLAN IMPLEMENTATION

This 2015 UWMP will be the source document for any SB 610 Water Supply Assessments or SB 221 Water Supply Verifications required for any proposed projects between 2016 and 2020 that are subject to the California Environmental Quality Act and would demand an amount of water equivalent or greater than the amount of water required by a 500 dwelling unit project. This 2015 UWMP will also 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 SB X7-7.

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 within 30 days of adoption.

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APPENDIX A

Legislative Requirements

- California Water Code – Urban Water Management Planning
- California Water Code – Sustainable Water Use and Demand Reduction

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California Water Code
Urban Water Management Planning

California Water Code Division 6, Part 2.6.

Chapter 1. General Declaration and Policy §10610-10610.4
Chapter 2. Definitions §10611-10617
Chapter 3. Urban Water Management Plans
Article 1. General Provisions §10620-10621
Article 2. Contents of Plans §10630-10634
Article 2.5. Water Service Reliability §10635
Article 3. Adoption And Implementation of Plans §10640-10645
Chapter 4. Miscellaneous Provisions §10650-10656

Chapter 1. General Declaration and Policy

SECTION 10610-10610.4

10610. This part shall be known and may be cited as the "Urban Water Management Planning Act."

10610.2. (a) The Legislature finds and declares all of the following:

(1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.

(2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.

(3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.

(4) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years.

(5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.

(6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.

(7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.

(8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.

(9) The quality of source supplies can have a significant impact on water management strategies and supply reliability.

(b) This part is intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water.

10610.4. The Legislature finds and declares that it is the policy of the state as follows:

(a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.

(b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.

(c) Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

Chapter 2. Definitions

SECTION 10611-10617

10611. Unless the context otherwise requires, the definitions of this chapter govern the construction of this part.

10611.5. “Demand management" means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.

10612. "Customer" means a purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses.

10613. "Efficient use" means those management measures that result in the most effective use of water so as to prevent its waste or unreasonable use or unreasonable method of use.

10614. "Person" means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of such an entity.

10615. "Plan" means an urban water management plan prepared pursuant to this part. A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses,

reclamation and demand management activities. The components of the plan may vary according to an individual community or area's characteristics and its capabilities to efficiently use and conserve water. The plan shall address measures for residential, commercial, governmental, and industrial water demand management as set forth in Article 2 (commencing with Section 10630) of Chapter 3. In addition, a strategy and time schedule for implementation shall be included in the plan.

10616. "Public agency" means any board, commission, county, city and county, city, regional agency, district, or other public entity.

10616.5. "Recycled water" means the reclamation and reuse of wastewater for beneficial use.

10617. "Urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

Chapter 3. Urban Water Management Plans

Article 1. General Provisions

SECTION 10620-10621

10620. (a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).

(b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.

(c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.

(d) (1) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.

(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.

(e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.

(f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

10621. (a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero, except as provided in subdivision (d).

(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

(c) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

(d) Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.

Article 2. Contents of Plan

SECTION 10630-10634

10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

10631. A plan shall be adopted in accordance with this chapter that shall do all of the following:

(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a). If groundwater is identified as an existing or planned source of

water available to the supplier, all of the following information shall be included in the plan:

(1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For basins that a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(c) (1) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

(A) An average water year.

(B) A single-dry water year.

(C) Multiple-dry water years.

(2) For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.

(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

(e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(J) Distribution system water loss.

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

(3) (A) For the 2015 urban water management plan update, the distribution system water loss shall be quantified for the most recent 12-month period available. For all subsequent updates, the distribution system water loss shall be quantified for each of the five years preceding the plan update.

(B) The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association.

(4) (A) If available and applicable to an urban water supplier, water use projections may display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.

(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following:

(i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.

(ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.

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

(1) (A) For an urban retail water supplier, as defined in Section 10608.12, 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 measures 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.

(2) For an urban wholesale water supplier, as defined in Section 10608.12, a narrative description of the items in clauses (ii), (iv), (vi), and (vii) of subparagraph (B) of paragraph (1), and a narrative description of its distribution system asset management and wholesale supplier assistance programs.

(g) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water

use, as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

(h) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.

(i) For purposes of this part, urban water suppliers that are members of the California Urban Water Conservation Council shall be deemed in compliance with the requirements of subdivision (f) by complying with all the provisions of the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated December 10, 2008, as it may be amended, and by submitting the annual reports required by Section 6.2 of that memorandum.

(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).

10631.1. (a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.

(b) It is the intent of the Legislature that the identification of projected water use for single-family and multifamily residential housing for lower income households will assist a supplier in complying with the requirement under Section 65589.7 of the Government Code to grant a priority for the provision of service to housing units affordable to lower income households.

10631.2. (a) In addition to the requirements of Section 10631, an urban water management plan may, but is not required to, include any of the following information:

(1) An estimate of the amount of energy used to extract or divert water supplies.

(2) An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.

(3) An estimate of the amount of energy used to treat water supplies.

(4) An estimate of the amount of energy used to distribute water supplies through its distribution systems.

(5) An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.

(6) An estimate of the amount of energy used to place water into or withdraw from storage.

(7) Any other energy-related information the urban water supplier deems appropriate.

(b) The department shall include in its guidance for the preparation of urban water management plans a methodology for the voluntary calculation or estimation of the energy intensity of urban water systems. The department may consider studies and calculations conducted by the Public Utilities Commission in developing the methodology.

10631.5. (a) (1) Beginning January 1, 2009, the terms of, and eligibility for, a water management grant or loan made to an urban water supplier and awarded or administered by the department, state board, or California Bay-Delta Authority or its successor agency shall be conditioned on the implementation of the water demand management measures described in Section 10631, as determined by the department pursuant to subdivision (b).

(2) For the purposes of this section, water management grants and loans include funding for programs and projects for surface water or groundwater storage, recycling, desalination, water conservation, water supply reliability, and water supply augmentation. This section does not apply to water management projects funded by the federal American Recovery and Reinvestment Act of 2009 (Public Law 111-5).

(3) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if the urban water supplier has

submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the water demand management measures. The supplier may request grant or loan funds to implement the water demand management measures to the extent the request is consistent with the eligibility requirements applicable to the water management funds.

(4) (A) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if an urban water supplier submits to the department for approval documentation demonstrating that a water demand management measure is not locally cost effective. If the department determines that the documentation submitted by the urban water supplier fails to demonstrate that a water demand management measure is not locally cost effective, the department shall notify the urban water supplier and the agency administering the grant or loan program within 120 days that the documentation does not satisfy the requirements for an exemption, and include in that notification a detailed statement to support the determination.

(B) For purposes of this paragraph, "not locally cost effective" means that the present value of the local benefits of implementing a water demand management measure is less than the present value of the local costs of implementing that measure.

(b) (1) The department, in consultation with the state board and the California Bay-Delta Authority or its successor agency, and after soliciting public comment regarding eligibility requirements, shall develop eligibility requirements to implement the requirement of paragraph (1) of subdivision (a). In establishing these eligibility requirements, the department shall do both of the following:

(A) Consider the conservation measures described in the Memorandum of Understanding Regarding Urban Water Conservation in California, and alternative conservation approaches that provide equal or greater water savings.

(B) Recognize the different legal, technical, fiscal, and practical roles and responsibilities of wholesale water suppliers and retail water suppliers.

(2) (A) For the purposes of this section, the department shall determine whether an urban water supplier is implementing all of the water demand management measures described in Section 10631 based on either, or a combination, of the following:

(i) Compliance on an individual basis.

(ii) Compliance on a regional basis. Regional compliance shall require participation in a regional conservation program consisting of two or more urban water suppliers that achieves the level of conservation or water efficiency savings equivalent to the amount of conservation or savings achieved if each of the participating urban water suppliers implemented the water demand management measures. The urban water supplier administering the regional program shall provide participating urban water suppliers and the department with data to demonstrate that the regional program is consistent with this clause. The department shall review the data to determine whether the urban water suppliers in the regional program are meeting the eligibility requirements.

(B) The department may require additional information for any determination pursuant to this section.

(3) The department shall not deny eligibility to an urban water supplier in compliance with the requirements of this section that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the water demand management measures described in Section 10631.

(c) In establishing guidelines pursuant to the specific funding authorization for any water management grant or loan program subject to this section, the agency administering the grant or loan program shall include in the guidelines the eligibility requirements developed by the department pursuant to subdivision (b).

(d) Upon receipt of a water management grant or loan application by an agency administering a grant and loan program subject to this section, the agency shall request an eligibility determination from the department with respect to the requirements of this section. The department shall respond to the request within 60 days of the request.

(e) The urban water supplier may submit to the department copies of its annual reports and other relevant documents to assist the department in determining whether the urban water supplier is implementing or scheduling the implementation of water demand management activities. In addition, for urban water suppliers that are signatories to the Memorandum of Understanding Regarding Urban Water Conservation in California and submit biennial reports to the California Urban Water Conservation Council in accordance with the memorandum, the department may use these reports to assist in tracking the implementation of water demand management measures.

(f) This section shall remain in effect only until July 1, 2016, and as of that date is repealed, unless a later enacted statute, that is enacted before July 1, 2016, deletes or extends that date.

10631.7. The department, in consultation with the California Urban Water Conservation Council, shall convene an independent technical panel to provide information and recommendations to the department and the Legislature on new demand management measures, technologies, and approaches. The panel shall consist of no more than seven members, who shall be selected by the department to reflect a balanced representation of experts. The panel shall have at least one, but no more than two, representatives from each of the following: retail water suppliers, environmental organizations, the business community, wholesale water suppliers, and academia. The panel shall be convened by January 1, 2009, and shall report to the Legislature no later than January 1, 2010, and every five years thereafter. The department shall review the panel report and include in the final report to the Legislature the department's recommendations and comments regarding the panel process and the panel's recommendations.

10632. (a) The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier:

(1) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions that are applicable to each stage.

(2) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.

(3) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

(4) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.

(5) Consumption reduction methods in the most restrictive stages. 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.

(6) Penalties or charges for excessive use, where applicable.

(7) An analysis of the impacts of each of the actions and conditions described in paragraphs (1) to (6), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

(8) A draft water shortage contingency resolution or ordinance.

(9) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

(b) Commencing with the urban water management plan update due July 1, 2016, for purposes of developing the water shortage contingency analysis pursuant to subdivision (a), the urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following:

(a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.

(b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

(c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.

(d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

(e) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

(f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

(g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

10634. The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

Article 2.5. Water Service Reliability

SECTION 10635

10635. (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

(b) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.

(c) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.

(d) Nothing in this article is intended to change existing law concerning an urban water supplier's obligation to provide water service to its existing customers or to any potential future customers.

Article 3. Adoption and Implementation of Plans

SECTION 10640-10645

10640. Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630). The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

10641. An urban water supplier required to prepare a plan may consult with, and obtain comments from, any public agency or state agency or any person who has special expertise with respect to water demand management methods and techniques.

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.

10643. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

10644. (a) (1) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

(2) The plan, or amendments to the plan, submitted to the department pursuant to paragraph (1) shall be submitted electronically and shall include any standardized forms, tables, or displays specified by the department.

(b) (1) Notwithstanding Section 10231.5 of the Government Code, the department shall prepare and submit to the Legislature, on or before December 31, in the years ending in six and one, a report summarizing the status of the plans adopted pursuant to this part.

The report prepared by the department shall identify the exemplary elements of the individual plans. The department shall provide a copy of the report to each urban water supplier that has submitted its plan to the department. The department shall also prepare reports and provide data for any legislative hearings designed to consider the effectiveness of plans submitted pursuant to this part.

(2) A report to be submitted pursuant to paragraph (1) shall be submitted in compliance with Section 9795 of the Government Code.

(c) (1) For the purpose of identifying the exemplary elements of the individual plans, the department shall identify in the report water demand management measures adopted and implemented by specific urban water suppliers, and identified pursuant to Section 10631, that achieve water savings significantly above the levels established by the department to meet the requirements of Section 10631.5.

(2) The department shall distribute to the panel convened pursuant to Section 10631.7 the results achieved by the implementation of those water demand management measures described in paragraph (1).

(3) The department shall make available to the public the standard the department will use to identify exemplary water demand management measures.

10645. Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

Chapter 4. Miscellaneous Provisions

SECTION 10650-10656

10650. Any actions or proceedings to attack, review, set aside, void, or annul the acts or decisions of an urban water supplier on the grounds of noncompliance with this part shall be commenced as follows:

(a) An action or proceeding alleging failure to adopt a plan shall be commenced within 18 months after that adoption is required by this part.

(b) Any action or proceeding alleging that a plan, or action taken pursuant to the plan, does not comply with this part shall be commenced within 90 days after filing of the plan or amendment thereto pursuant to Section 10644 or the taking of that action.

10651. In any action or proceeding to attack, review, set aside, void, or annul a plan, or an action taken pursuant to the plan by an urban water supplier on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse of discretion is established if the supplier has not proceeded in a manner required by law or if the action by the water supplier is not supported by substantial evidence.

10652. The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) does not apply to the preparation and adoption of plans pursuant to this part or to the implementation of actions taken pursuant to Section 10632. Nothing in this part shall be interpreted as exempting from the California Environmental Quality Act any project that would significantly affect water supplies for fish and wildlife, or any project for implementation of the plan, other than projects implementing Section 10632, or any project for expanded or additional water supplies.

10653. The adoption of a plan shall satisfy any requirements of state law, regulation, or order, including those of the State Water Resources Control Board and the Public Utilities Commission, for the preparation of water management plans or conservation plans; provided, that if the State Water Resources Control Board or the Public Utilities Commission requires additional information concerning water conservation to implement its existing authority, nothing in this part shall be deemed to limit the board or the commission in obtaining that information. The requirements of this part shall be satisfied by any urban water demand management plan prepared to meet federal laws or regulations after the effective date of this part, and which substantially meets the requirements of this part, or by any existing urban water management plan which includes the contents of a plan required under this part.

10654. An urban water supplier may recover in its rates the costs incurred in preparing its plan and implementing the reasonable water conservation measures included in the plan. Any best water management practice that is included in the plan that is identified in the "Memorandum of Understanding Regarding Urban Water Conservation in California" is deemed to be reasonable for the purposes of this section.

10655. If any provision of this part or the application thereof to any person or circumstances is held invalid, that invalidity shall not affect other provisions or applications of this part which can be given effect without the invalid provision or application thereof, and to this end the provisions of this part are severable.

10656. An urban water supplier that does not prepare, adopt, and submit its urban water management plan to the department in accordance with this part, is ineligible to receive funding pursuant to Division 24 (commencing with Section 78500) or Division 26

(commencing with Section 79000), or receive drought assistance from the state until the urban water management plan is submitted pursuant to this article.

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California Water Code
Sustainable Water Use and Demand Reduction

California Water Code Division 6, Part 2.55.

Chapter 1. General Declarations and Policy §10608-10608.8
Chapter 2. Definitions §10608.12
Chapter 3. Urban Retail Water Suppliers §10608.16-10608.44
Chapter 4. Agricultural Water Suppliers §10608.48
Chapter 5. Sustainable Water Management §10608.50
Chapter 6 Standardized Data Collection §10608.52
Chapter 7 Funding Provisions §10608.56-10608.60
Chapter 8 Quantifying Agricultural Water Use Efficiency §10608.64

Chapter 1. General Declarations and Policy

SECTION 10608-10608.8

10608. The Legislature finds and declares all of the following:

(a) Water is a public resource that the California Constitution protects against waste and unreasonable use.

(b) Growing population, climate change, and the need to protect and grow California's economy while protecting and restoring our fish and wildlife habitats make it essential that the state manage its water resources as efficiently as possible.

(c) Diverse regional water supply portfolios will increase water supply reliability and reduce dependence on the Delta.

(d) Reduced water use through conservation provides significant energy and environmental benefits, and can help protect water quality, improve streamflows, and reduce greenhouse gas emissions.

(e) The success of state and local water conservation programs to increase efficiency of water use is best determined on the basis of measurable outcomes related to water use or efficiency.

(f) Improvements in technology and management practices offer the potential for increasing water efficiency in California over time, providing an essential water management tool to meet the need for water for urban, agricultural, and environmental uses.

(g) The Governor has called for a 20 percent per capita reduction in urban water use statewide by 2020.

(h) The factors used to formulate water use efficiency targets can vary significantly from location to location based on factors including weather, patterns of urban and suburban development, and past efforts to enhance water use efficiency.

(i) Per capita water use is a valid measure of a water provider's efforts to reduce urban water use within its service area. However, per capita water use is less useful for measuring relative water use efficiency between different water providers. Differences in weather, historical patterns of urban and suburban development, and density of housing in a particular location need to be considered when assessing per capita water use as a measure of efficiency.

10608.4. It is the intent of the Legislature, by the enactment of this part, to do all of the following:

(a) Require all water suppliers to increase the efficiency of use of this essential resource.

(b) Establish a framework to meet the state targets for urban water conservation identified in this part and called for by the Governor.

(c) Measure increased efficiency of urban water use on a per capita basis.

(d) Establish a method or methods for urban retail water suppliers to determine targets for achieving increased water use efficiency by the year 2020, in accordance with the Governor's goal of a 20-percent reduction.

(e) Establish consistent water use efficiency planning and implementation standards for urban water suppliers and agricultural water suppliers.

(f) Promote urban water conservation standards that are consistent with the California Urban Water Conservation Council's adopted best management practices and the requirements for demand management in Section 10631.

(g) Establish standards that recognize and provide credit to water suppliers that made substantial capital investments in urban water conservation since the drought of the early 1990s.

(h) Recognize and account for the investment of urban retail water suppliers in providing recycled water for beneficial uses.

(i) Require implementation of specified efficient water management practices for agricultural water suppliers.

(j) Support the economic productivity of California's agricultural, commercial, and industrial sectors.

(k) Advance regional water resources management.

10608.8. (a) (1) Water use efficiency measures adopted and implemented pursuant to this part or Part 2.8 (commencing with Section 10800) are water conservation measures subject to the protections provided under Section 1011.

(2) Because an urban agency is not required to meet its urban water use target until 2020 pursuant to subdivision (b) of Section 10608.24, an urban retail water supplier's failure to meet those targets shall not establish a violation of law for purposes of any state administrative or judicial proceeding prior to

January 1, 2021. Nothing in this paragraph limits the use of data reported to the department or the board in litigation or an administrative proceeding. This paragraph shall become inoperative on January 1, 2021.

(3) To the extent feasible, the department and the board shall provide for the use of water conservation reports required under this part to meet the requirements of Section 1011 for water conservation reporting.

(b) This part does not limit or otherwise affect the application of Chapter 3.5 (commencing with Section 11340), Chapter 4 (commencing with Section 11370), Chapter 4.5 (commencing with Section 11400), and Chapter 5 (commencing with Section 11500) of Part 1 of Division 3 of Title 2 of the Government Code.

(c) This part does not require a reduction in the total water used in the agricultural or urban sectors, because other factors, including, but not limited to, changes in agricultural economics or population growth may have greater effects on water use. This part does not limit the economic productivity of California's agricultural, commercial, or industrial sectors.

(d) The requirements of this part do not apply to an agricultural water supplier that is a party to the Quantification Settlement Agreement, as defined in subdivision (a) of Section 1 of Chapter 617 of the Statutes of 2002, during the period within which the Quantification Settlement Agreement remains in effect. After the expiration of the Quantification Settlement Agreement, to the extent conservation water projects implemented as part of the Quantification Settlement Agreement remain in effect, the conserved water created as part of those projects shall be credited against the obligations of the agricultural water supplier pursuant to this part.

Chapter 2 Definitions

SECTION 10608.12

10608.12. Unless the context otherwise requires, the following definitions govern the construction of this part:

(a) "Agricultural water supplier" means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding recycled water. "Agricultural water supplier" includes a supplier or contractor for water, regardless of the basis of right, that distributes or sells water for ultimate resale to customers. "Agricultural water supplier" does not include the department.

(b) "Base daily per capita water use" means any of the following:

(1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the calculation described in paragraph (1) up to an additional five years to a maximum of a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(3) For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

(c) "Baseline commercial, industrial, and institutional water use" means an urban retail water supplier's base daily per capita water use for commercial, industrial, and institutional users.

(d) "Commercial water user" means a water user that provides or distributes a product or service.

(e) "Compliance daily per capita water use" means the gross water use during the final year of the reporting period, reported in gallons per capita per day.

(f) "Disadvantaged community" means a community with an annual median household income that is less than 80 percent of the statewide annual median household income.

(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.

(h) "Industrial water user" means a water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development.

(i) "Institutional water user" means 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.

(j) "Interim urban water use target" means the midpoint between the urban retail water supplier's base daily per capita water use and the urban retail water supplier's urban water use target for 2020.

(k) "Locally cost effective" means that the present value of the local benefits of implementing an agricultural efficiency water management practice is greater than or equal to the present value of the local cost of implementing that measure.

(l) "Process water" means water used for producing a product or product content or water used for research and development, including, but not limited to, continuous manufacturing processes, water used for testing and maintaining equipment used in producing a product or product content, and water used in combined heat and power facilities used in producing a product or product content. Process water does not mean incidental water uses not related to the production of a product or product content, including, but not limited to, water used for restrooms, landscaping, air conditioning, heating, kitchens, and laundry.

(m) "Recycled water" means recycled water, as defined in subdivision (n) of Section 13050, that is used to offset potable demand, including recycled water supplied for direct use and indirect potable reuse, that meets the following requirements, where applicable:

(1) For groundwater recharge, including recharge through spreading basins, water supplies that are all of the following:

(A) Metered.

(B) Developed through planned investment by the urban water supplier or a wastewater treatment agency.

(C) Treated to a minimum tertiary level.

(D) Delivered within the service area of an urban retail water supplier or its urban wholesale water supplier that helps an urban retail water supplier meet its urban water use target.

(2) For reservoir augmentation, water supplies that meet the criteria of paragraph (1) and are conveyed through a distribution system constructed specifically for recycled water.

(n) "Regional water resources management" means sources of supply resulting from watershed-based planning for sustainable local water reliability or any of the following alternative sources of water:

(1) The capture and reuse of stormwater or rainwater.

(2) The use of recycled water.

(3) The desalination of brackish groundwater.

(4) The conjunctive use of surface water and groundwater in a manner that is consistent with the safe yield of the groundwater basin.

(o) "Reporting period" means the years for which an urban retail water supplier reports compliance with the urban water use targets.

(p) "Urban retail water supplier" means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes.

(q) "Urban water use target" means the urban retail water supplier's targeted future daily per capita water use.

(r) "Urban wholesale water supplier," means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes.

Chapter 3 Urban Retail Water Suppliers

SECTION 10608.16-10608.44

10608.16.(a) The state shall achieve a 20-percent reduction in urban per capita water use in California on or before December 31, 2020.

(b) The state shall make incremental progress towards the state target specified in subdivision (a) by reducing urban per capita water use by at least 10 percent on or before December 31, 2015.

10608.20.(a) (1) Each urban retail water supplier shall develop urban water use targets and an interim urban water use target by July 1, 2011. Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis, as provided in subdivision (a) of Section 10608.28, and may determine the targets on a fiscal year or calendar year basis.

(2) It is the intent of the Legislature that the urban water use targets described in paragraph (1) cumulatively result in a 20-percent reduction from the baseline daily per capita water use by December 31, 2020.

(b) An urban retail water supplier shall adopt one of the following methods for determining its urban water use target pursuant to subdivision (a):

(1) Eighty percent of the urban retail water supplier's baseline per capita daily water use.

(2) The per capita daily water use that is estimated using the sum of the following performance standards:

(A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's 2016 report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.

(B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.

(C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020.

(3) Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.

(4) A method that shall be identified and developed by the department, through a public process, and reported to the Legislature no later than December 31, 2010. The method developed by the department shall identify per capita targets that cumulatively result in a statewide 20-percent reduction in urban daily per capita water use by December 31, 2020. In developing urban daily per capita water use targets, the department shall do all of the following:

(A) Consider climatic differences within the state.

(B) Consider population density differences within the state.

(C) Provide flexibility to communities and regions in meeting the targets.

(D) Consider different levels of per capita water use according to plant water needs in different regions.

(E) Consider different levels of commercial, industrial, and institutional water use in different regions of the state.

(F) Avoid placing an undue hardship on communities that have implemented conservation measures or taken actions to keep per capita water use low.

(c) If the department adopts a regulation pursuant to paragraph (4) of subdivision (b) that results in a requirement that an urban retail water supplier achieve a reduction in daily per capita water use that is greater than 20 percent by December 31, 2020, an urban retail water supplier that adopted the method

described in paragraph (4) of subdivision (b) may limit its urban water use target to a reduction of not more than 20 percent by December 31, 2020, by adopting the method described in paragraph (1) of subdivision (b).

(d) The department shall update the method described in paragraph (4) of subdivision (b) and report to the Legislature by December 31, 2014. An urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may adopt a new urban daily per capita water use target pursuant to this updated method.

(e) An urban retail water supplier shall include in its urban water management plan due in 2010 pursuant to Part 2.6 (commencing with Section 10610) the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.

(f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.

(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).

(h) (1) The department, through a public process and in consultation with the California Urban Water Conservation Council, shall develop technical methodologies and criteria for the consistent implementation of this part, including, but not limited to, both of the following:

(A) Methodologies for calculating base daily per capita water use, baseline commercial, industrial, and institutional water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use, and landscaped area water use.

(B) Criteria for adjustments pursuant to subdivisions (d) and (e) of Section 10608.24.

(2) The department shall post the methodologies and criteria developed pursuant to this subdivision on its Internet Web site, and make written copies available, by October 1, 2010. An urban retail water supplier shall use the methods developed by the department in compliance with this part.

(i) (1) The department shall adopt regulations for implementation of the provisions relating to process water in accordance with subdivision (l) of Section 10608.12, subdivision (e) of Section 10608.24, and subdivision (d) of Section 10608.26.

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the

Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

(j) (1) An urban retail water supplier is granted an extension to July 1, 2011, for adoption of an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) due in 2010 to allow the use of technical methodologies developed by the department pursuant to paragraph (4) of subdivision (b) and subdivision (h). An urban retail water supplier that adopts an urban water management plan due in 2010 that does not use the methodologies developed by the department pursuant to subdivision (h) shall amend the plan by July 1, 2011, to comply with this part.

(2) An urban wholesale water supplier whose urban water management plan prepared pursuant to Part 2.6 (commencing with Section 10610) was due and not submitted in 2010 is granted an extension to July 1, 2011, to permit coordination between an urban wholesale water supplier and urban retail water suppliers.

10608.22. Notwithstanding the method adopted by an urban retail water supplier pursuant to Section 10608.20, an urban retail water supplier's per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use as defined in paragraph(3) of subdivision (b) of Section 10608.12. This section does not apply to an urban retail water supplier with a base daily per capita water use at or below 100 gallons per capita per day.

10608.24.(a) Each urban retail water supplier shall meet its interim urban water use target by December 31, 2015.

(b) Each urban retail water supplier shall meet its urban water use target by December 31, 2020.

(c) An urban retail water supplier's compliance daily per capita water use shall be the measure of progress toward achievement of its urban water use target.

(d) (1) When determining compliance daily per capita water use, an urban retail water supplier may consider the following factors:

(A) Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.
(B) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.

(C) Substantial changes to institutional water use resulting from fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.

(2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in

paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.

(e) When developing the urban water use target pursuant to Section 10608.20, an urban retail water supplier that has a substantial percentage of industrial water use in its service area may exclude process water from the calculation of gross water use to avoid a disproportionate burden on another customer sector.

(f) (1) An urban retail water supplier that includes agricultural water use in an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) may include the agricultural water use in determining gross water use. An urban retail water supplier that includes agricultural water use in determining gross water use and develops its urban water use target pursuant to paragraph (2) of subdivision (b) of Section 10608.20 shall use a water efficient standard for agricultural irrigation of 100 percent of reference evapotranspiration multiplied by the crop coefficient for irrigated acres.

(2) An urban retail water supplier, that is also an agricultural water supplier, is not subject to the requirements of Chapter 4 (commencing with Section 10608.48), if the agricultural water use is incorporated into its urban water use target pursuant to paragraph (1).

10608.26.(a) In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:

(1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.

(2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.

(3) Adopt a method, pursuant to subdivision (b) of Section 10608.20, for determining its urban water use target.

(b) In complying with this part, an urban retail water supplier may meet its urban water use target through efficiency improvements in any combination among its customer sectors. An urban retail water supplier shall avoid placing a disproportionate burden on any customer sector.

(c) For an urban retail water supplier that supplies water to a United States Department of Defense military installation, the urban retail water supplier's implementation plan for complying with this part shall consider the conservation of that military installation under federal Executive Order 13514.

(d) (1) Any ordinance or resolution adopted by an urban retail water supplier after the effective date of this section shall not require existing customers as of the effective date of this section, to undertake changes in product formulation, operations, or equipment that would reduce process water use, but may provide technical assistance and financial incentives to those customers to implement efficiency measures for process water. This section shall not limit

an ordinance or resolution adopted pursuant to a declaration of drought emergency by an urban retail water supplier.

(2) This part shall not be construed or enforced so as to interfere with the requirements of Chapter 4 (commencing with Section 113980) to Chapter 13 (commencing with Section 114380), inclusive, of Part 7 of Division 104 of the Health and Safety Code, or any requirement or standard for the protection of public health, public safety, or worker safety established by federal, state, or local government or recommended by recognized standard setting organizations or trade associations.

10608.28.(a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement, by any of the following:

(1) Through an urban wholesale water supplier.

(2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).

(3) Through a regional water management group as defined in Section 10537.

(4) By an integrated regional water management funding area.

(5) By hydrologic region.

(6) Through other appropriate geographic scales for which computation methods have been developed by the department.

(b) A regional water management group, with the written consent of its member agencies, may undertake any or all planning, reporting, and implementation functions under this chapter for the member agencies that consent to those activities. Any data or reports shall provide information both for the regional water management group and separately for each consenting urban retail water supplier and urban wholesale water supplier.

10608.32. All costs incurred pursuant to this part by a water utility regulated by the Public Utilities Commission may be recoverable in rates subject to review and approval by the Public Utilities Commission, and may be recorded in a memorandum account and reviewed for reasonableness by the Public Utilities Commission.

10608.36. Urban wholesale water suppliers shall include in the urban water management plans required pursuant to Part 2.6 (commencing with Section 10610) an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions required by this part.

10608.40. Urban water retail suppliers shall report to the department on their progress in meeting their urban water use targets as part of their urban water management plans

submitted pursuant to Section 10631. The data shall be reported using a standardized form developed pursuant to Section 10608.52.

10608.42.(a) The department shall review the 2015 urban water management plans and report to the Legislature by July 1, 2017, on progress towards achieving a 20-percent reduction in urban water use by December 31, 2020. The report shall include recommendations on changes to water efficiency standards or urban water use targets to achieve the 20-percent reduction and to reflect updated efficiency information and technology changes.

(b) A report to be submitted pursuant to subdivision (a) shall be submitted in compliance with Section 9795 of the Government Code.

10608.43. The department, in conjunction with the California Urban Water Conservation Council, by April 1, 2010, shall convene a representative task force consisting of academic experts, urban retail water suppliers, environmental organizations, commercial water users, industrial water users, and institutional water users to develop alternative best management practices for commercial, industrial, and institutional users and an assessment of the potential statewide water use efficiency improvement in the commercial, industrial, and institutional sectors that would result from implementation of these best management practices. The taskforce, in conjunction with the department, shall submit a report to the Legislature by April 1, 2012, that shall include a review of multiple sectors within commercial, industrial, and institutional users and that shall recommend water use efficiency standards for commercial, industrial, and institutional users among various sectors of water use. The report shall include, but not be limited to, the following:

(a) Appropriate metrics for evaluating commercial, industrial, and institutional water use.

(b) Evaluation of water demands for manufacturing processes, goods, and cooling.

(c) Evaluation of public infrastructure necessary for delivery of recycled water to the commercial, industrial, and institutional sectors.

(d) Evaluation of institutional and economic barriers to increased recycled water use within the commercial, industrial, and institutional sectors.

(e) Identification of technical feasibility and cost of the best management practices to achieve more efficient water use statewide in the commercial, industrial, and institutional sectors that is consistent with the public interest and reflects past investments in water use efficiency.

10608.44. Each state agency shall reduce water use at facilities it operates to support urban retail water suppliers in meeting the target identified in Section 10608.16.

Chapter 4 Agricultural Water Suppliers

SECTION 10608.48

10608.48.(a) On or before July 31, 2012, an agricultural water supplier shall implement efficient water management practices pursuant to subdivisions (b) and (c).

(b) Agricultural water suppliers shall implement all of the following critical efficient management practices:

(1) Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10 and to implement paragraph (2).

(2) Adopt a pricing structure for water customers based at least in part on quantity delivered.

(c) Agricultural water suppliers shall implement additional efficient management practices, including, but not limited to, practices to accomplish all of the following, if the measures are locally cost effective and technically feasible:

(1) Facilitate alternative land use for lands with exceptionally high water duties or whose irrigation contributes to significant problems, including drainage.

(2) Facilitate use of available recycled water that otherwise would not be used beneficially, meets all health and safety criteria, and does not harm crops or soils.

(3) Facilitate the financing of capital improvements for on-farm irrigation systems.

(4) Implement an incentive pricing structure that promotes one or more of the following goals:

(A) More efficient water use at the farm level.

(B) Conjunctive use of groundwater.

(C) Appropriate increase of groundwater recharge.

(D) Reduction in problem drainage.

(E) Improved management of environmental resources.

(F) Effective management of all water sources throughout the year by adjusting seasonal pricing structures based on current conditions.

(5) Expand line or pipe distribution systems, and construct regulatory reservoirs to increase distribution system flexibility and capacity, decrease maintenance, and reduce seepage.

(6) Increase flexibility in water ordering by, and delivery to, water customers within operational limits.

(7) Construct and operate supplier spill and tailwater recovery systems.

(8) Increase planned conjunctive use of surface water and groundwater within the supplier service area.

(9) Automate canal control structures.

(10) Facilitate or promote customer pump testing and evaluation.

(11) Designate a water conservation coordinator who will develop and implement the water management plan and prepare progress reports.

(12) Provide for the availability of water management services to water users. These services may include, but are not limited to, all of the following:

(A) On-farm irrigation and drainage system evaluations.

(B) Normal year and real-time irrigation scheduling and crop evapotranspiration information.

(C) Surface water, groundwater, and drainage water quantity and quality data.

(D) Agricultural water management educational programs and materials for farmers, staff, and the public.

(13) Evaluate the policies of agencies that provide the supplier with water to identify the potential for institutional changes to allow more flexible water deliveries and storage.

(14) Evaluate and improve the efficiencies of the supplier's pumps.

(d) Agricultural water suppliers shall include in the agricultural water management plans required pursuant to Part 2.8 (commencing with Section 10800) a report on which efficient water management practices have been implemented and are planned to be implemented, an estimate of the water use efficiency improvements that have occurred since the last report, and an estimate of the water use efficiency improvements estimated to occur five and 10 years in the future. If an agricultural water supplier determines that an efficient water management practice is not locally cost effective or technically feasible, the supplier shall submit information documenting that determination.

(e) The data shall be reported using a standardized form developed pursuant to Section 10608.52.

(f) An agricultural water supplier may meet the requirements of subdivisions (d) and (e) by submitting to the department a water conservation plan submitted to the United States Bureau of Reclamation that meets the requirements described in Section 10828.

(g) On or before December 31, 2013, December 31, 2016, and December 31, 2021, the department, in consultation with the board, shall submit to the Legislature a report on the agricultural efficient water management practices that have been implemented and are planned to be implemented and an assessment of the manner in which the implementation of those efficient water management practices has affected and will affect agricultural operations, including estimated water use efficiency improvements, if any.

(h) The department may update the efficient water management practices required pursuant to subdivision (c), in consultation with the Agricultural Water Management Council, the United States Bureau of Reclamation, and the board. All efficient water management practices for agricultural water use pursuant to this chapter shall be adopted or revised by the department only after the department conducts public hearings to allow participation of the diverse geographical areas and interests of the state.

(i) (1) The department shall adopt regulations that provide for a range of options that agricultural water suppliers may use or implement to comply with the measurement requirement in paragraph (1) of subdivision (b).

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

Chapter 5 Sustainable Water Management

Section 10608.50

10608.50.(a) The department, in consultation with the board, shall promote implementation of regional water resources management practices through increased incentives and removal of barriers consistent with state and federal law. Potential changes may include, but are not limited to, all of the following:

(1) Revisions to the requirements for urban and agricultural water management plans.

(2) Revisions to the requirements for integrated regional water management plans.

(3) Revisions to the eligibility for state water management grants and loans.

(4) Revisions to state or local permitting requirements that increase water supply opportunities, but do not weaken water quality protection under state and federal law.

(5) Increased funding for research, feasibility studies, and project construction.

(6) Expanding technical and educational support for local land use and water management agencies.

(b) No later than January 1, 2011, and updated as part of the California Water Plan, the department, in consultation with the board, and with public input, shall propose new statewide targets, or review and update existing statewide targets, for regional water resources management practices, including, but not limited to, recycled water, brackish groundwater desalination, and infiltration and direct use of urban stormwater runoff.

Chapter 6 Standardized Data Collection

SECTION 10608.52

10608.52.(a) The department, in consultation with the board, the California Bay-Delta Authority or its successor agency, the State Department of Public Health, and the Public Utilities Commission, shall develop a single standardized water use reporting form to meet the water use information needs of each agency, including the needs of urban water suppliers that elect to determine and report progress toward achieving targets on a regional basis as provided in subdivision (a) of Section 10608.28.

(b) At a minimum, the form shall be developed to accommodate information sufficient to assess an urban water supplier's compliance with conservation targets pursuant to Section 10608.24 and an agricultural water supplier's compliance with implementation of efficient water management practices pursuant to subdivision (a) of Section 10608.48. The form shall accommodate reporting by urban water suppliers on an individual or regional basis as provided in subdivision (a) of Section 10608.28.

Chapter 7 Funding Provisions

Section 10608.56-10608.60

10608.56.(a) On and after July 1, 2016, an urban retail water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

(b) On and after July 1, 2013, an agricultural water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

(c) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for achieving the per capita reductions. The supplier may request grant or loan funds to achieve the per capita reductions to the extent the request is consistent with the eligibility requirements applicable to the water funds.

(d) Notwithstanding subdivision (b), the department shall determine that an agricultural water supplier is eligible for a water grant or loan even though the supplier is not implementing all of the efficient water management practices described in Section 10608.48, if the agricultural water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the efficient water management practices. The supplier may request grant or loan funds to implement the efficient water management practices to the extent the request is consistent with the eligibility requirements applicable to the water funds.

(e) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.

(f) The department shall not deny eligibility to an urban retail water supplier or agricultural water supplier in compliance with the requirements of this part and Part 2.8 (commencing with Section 10800), that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the requirements of this part or Part 2.8 (commencing with Section 10800).

10608.60.(a) It is the intent of the Legislature that funds made available by Section 75026 of the Public Resources Code should be expended, consistent with Division 43 (commencing with Section 75001) of the Public Resources Code and upon appropriation by the Legislature, for grants to implement this part. In the allocation of funding, it is the intent of the Legislature that the department give consideration to disadvantaged communities to assist in implementing the requirements of this part.

(b) It is the intent of the Legislature that funds made available by Section 75041 of the Public Resources Code, should be expended, consistent with Division 43 (commencing with Section 75001) of the Public Resources Code and upon appropriation by the Legislature, for direct expenditures to implement this part.

Chapter 8 Quantifying Agricultural Water Use Efficiency

SECTION 10608.64

10608.64. The department, in consultation with the Agricultural Water Management Council, academic experts, and other stakeholders, shall develop a methodology for quantifying the efficiency of agricultural water use. Alternatives to be assessed shall include, but not be limited to, determination of efficiency levels based on crop type or irrigation system distribution uniformity. On or before December 31, 2011, the department shall report to the Legislature on a proposed methodology and a plan for implementation. The plan shall include the estimated implementation costs and the types of data needed to support the methodology. Nothing in this section authorizes the department to implement a methodology established pursuant to this section.

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APPENDIX B

DWR Urban Water Management Plan Tables

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Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
CA2310003	Ukiah, City of	4,781	2,534
	TOTAL	4,781	2,534
NOTES: Volumes are in AF.			

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

Table 2-3: Agency Identification	
Type of Agency (select one or both)	
☐	Agency is a wholesaler
☑	Agency is a retailer
Fiscal or Calendar Year (select one)	
☑	UWMP Tables Are in Calendar Years
☐	UWMP Tables Are in Fiscal Years
Units of Measure Used in UWMP (select from Drop down)	
Unit	AF
NOTES:	

Table 2-4 Retail: Water Supplier Information Exchange
The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with CWC 10631.
Wholesale Water Supplier Name *(Add additional rows as needed)*
NOTES: The City does not receive water from any wholesale suppliers.

Table 3-1 Retail: Population - Current and Projected						
Population Served	2015	2020	2025	2030	2035	2040*(opt)*
	16,073	16,893	17,754	18,660	19,612	20,612
NOTES: Volumes are in AF. 2015 population reported from California Department of Finance. 2020-2040 population growth projected at a rate of 1 percent per year.						

Table 4-1 Retail: Demands for Potable and Raw Water - Actual			
Use Type	2015 Actual		
	Additional Description *(as needed)*	Level of Treatment When Delivered	Volume
Single Family		Drinking Water	665
Multi-Family		Drinking Water	665
Other	Commercial & Institutional	Drinking Water	594
Industrial		Drinking Water	41
Landscape		Drinking Water	166
Other	Fire Service	Drinking Water	22
Other	Unbilled Metered	Drinking Water	25
Other	Unbilled unmetered	Drinking Water	33
Losses		Drinking Water	323
		TOTAL	2,534
NOTES: Volumes are in AF. Volume for each Water Use Type is based on 2015 Public Water System Statistics.			

Table 4-2 Retail: Demands for Potable and Raw Water - Projected						
Use Type	Additional Description *(as needed)*	Projected Water Use *Report To the Extent that Records are Available*				
		2020	2025	2030	2035	2040-opt
Single Family		924	971	1,021	1,073	1,127
Multi-Family		924	971	1,021	1,073	1,127
Other	Commercial & Institutional	825	867	912	958	1,007
Industrial		57	60	63	66	70
Landscape		231	242	255	268	281
Other	Fire Service	31	32	34	35	37
Losses		528	555	583	613	644
TOTAL		3,520	3,698	3,889	4,086	4,293
NOTES: Volumes are in AF. Volume for each Water Use Type is based on 2015 Public Water System Statistics.						

Table 4-3 Retail: Total Water Demands						
	2015	2020	2025	2030	2035	2040 *(opt)*
Potable and Raw Water *From Tables 4-1 and 4-2*	2,534	3,520	3,698	3,889	4,086	4,293
Recycled Water Demand* *From Table 6-4*	0	685	685	685	685	685
TOTAL WATER DEMAND	2,534	4,205	4,383	4,574	4,771	4,978
**Recycled water demand fields will be blank until Table 6-4 is complete.*						
NOTES: Volumes are in AF. Table references refer to DWR table numbers.						

Table 4-4 Retail: 12 Month Water Loss Audit Reporting	
Reporting Period Start Date	Volume of Water Loss*
01/2015	323
** Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.*	
NOTES: Volume is in AF.	

Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook)	No
Are Lower Income Residential Demands Included In Projections?	Yes
NOTES:	

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

Baseline Period	Start Year	End Year	Average Baseline GPCD*	2015 Interim Target *	Confirmed 2020 Target*
10-15 year	*1995*	*2004*	*233*	*209*	*186*
5 Year	*2003*	*2007*	*216*		

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

NOTES:

Table 5-2: 2015 Compliance

Retail Agency or Regional Alliance Only

Actual 2015 GPCD*	2015 Interim Target GPCD*	Optional Adjustments to 2015 GPCD *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*		
141	209	0	0	0	0	141	141	Yes

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

NOTES:

Table 6-1 Retail: Groundwater Volume Pumped						
☐	Supplier does not pump groundwater. The supplier will not complete the table below.					
Groundwater Type	Location or Basin Name	2011	2012	2013	2014	2015
Alluvial Basin	Ukiah Valley	1,382	1,453	1,397	1,537	1,175
	TOTAL	1,382	1,453	1,397	1,537	1,175
NOTES: Volumes are in AF.						

Table 6-2 Retail: Wastewater Collected Within Service Area in 2015						
☐	There is no wastewater collection system. The supplier will not complete the table below.					
100	Percentage of 2015 service area covered by wastewater collection system *(optional)*					
100	Percentage of 2015 service area population covered by wastewater collection system *(optional)*					
Wastewater Collection			**Recipient of Collected Wastewater**			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	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? *(optional)*
City of Ukiah	Metered	1,574	City of Ukiah	City of Ukiah WWTP	Yes	No
Ukiah Valley Sanitation District	Metered	1,423	City of Ukiah	City of Ukiah WWTP	Yes	No
Total Wastewater Collected from Service Area in 2015:		2,997				
NOTES: Volumes are in AF.						

Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015										
☐	No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.									
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)*	Method of Disposal	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
City of Ukiah WWTP	Discharge Point 002	Percolation Ponds	CA0022888	Percolation ponds	No	Secondary, Disinfected - 23	1,971	1,971	0	0
City of Ukiah WWTP	Discharge Point 001	Outfall to Russian River	CA0022888	River or creek outfall	No	Tertiary	1,026	1,026	0	0
						Total	2,997	2,997	0	0
NOTES: Volumes are in AF.										

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

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

Name of Agency Producing (Treating) the Recycled Water:	City of Ukiah
Name of Agency Operating the Recycled Water Distribution System:	City of Ukiah
Supplemental Water Added in 2015	0
Source of 2015 Supplemental Water	Not Applicable

Beneficial Use Type	General Description of 2015 Uses	Level of Treatment	2015	2020	2025	2030	2035	2040 (opt)
Agricultural irrigation			0	0	0	0	0	0
Landscape irrigation (excludes golf courses)		Tertiary	0	465	465	465	465	465
Golf course irrigation		Tertiary	0	220	220	220	220	220
Commercial use			0	0	0	0	0	0
Industrial use			0	0	0	0	0	0
Geothermal and other energy production			0	0	0	0	0	0
Seawater intrusion barrier			0	0	0	0	0	0
Recreational impoundment			0	0	0	0	0	0
Wetlands or wildlife habitat			0	0	0	0	0	0
Groundwater recharge (IPR)*			0	0	0	0	0	0
Surface water augmentation (IPR)*				0	0	0	0	0
Direct potable reuse				0	0	0	0	0
Other *(Provide General Description)*			0	0	0	0	0	0
		Total:	0	685	685	685	685	685

**IPR - Indirect Potable Reuse*

NOTES: Volumes are in AF.

Table 6-5 Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual			
☐	Recycled water was not used in 2010 nor projected for use in 2015. The supplier will not complete the table below.		
Use Type		**2010 Projection for 2015**	**2015 Actual Use**
Agricultural irrigation			0
Landscape irrigation (excludes golf courses)			0
Golf course irrigation			0
Commercial use			0
Industrial use			0
Geothermal and other energy production			0
Seawater intrusion barrier			0
Recreational impoundment			0
Wetlands or wildlife habitat			0
Groundwater recharge (IPR)			0
Surface water augmentation (IPR)			0
Direct potable reuse			0
Other	*All uses*	288	0
	Total	288	0
NOTES: Volumes are in AF. WWTP consumes some secondary recycled water as part of its process. This recycled water use is not included in the table.			

Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
| |	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
Section 6.5	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Public Outreach	Various ongoing communications	2015	
User Agreements	City actively seals out recycled water users and trains them on proper use of recycled water	2015	
Cost Incentives	City is providing recycled water free of charge	2015	
		Total	0
Actions to expand recycled water use began in 2015 and will continue into the future. Supplier anticipates to complete all construction phases of the current recycled water program prior to 2020. City intends to continue to seek out new users and provide recycled water free of charge.			

Table 6-7 Retail: Expected Future Water Supply Projects or Programs						
☐	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.					
☐	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other agencies?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Agency
Recycled Water Project Phase I-III	No			2020	All Year Types	80
Recycled Water Project Phase IV	No			2020	All Year Types	605
NOTES: Volumes are in AF. The Recycled Water Project will deliver additional recycled water to customers outside of the City's service area.						

Table 6-8 Retail: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2015		
		Actual Volume	Water Quality	Total Right or Safe Yield *(optional)*
Surface water	20 cfs direct diversion Jan 1-Dec 31 A012952	1,359	Drinking Water	14,480
Groundwater	Alluvial Groundwater Basin	1,175	Drinking Water	
	Total	2,534		14,480
NOTES: Volumes are in AF.				

Table 6-9 Retail: Water Supplies — Projected											
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	Project Water	800	800	800	800	800	800	800	800	800	800
Surface Water	Permit 12952 (Application 15704)	14,480	14,480	14,480	14,480	14,480	14,480	14,480	14,480	14,480	14,480
Surface water	Pre-1914 rights	2,027	2,027	2,027	2,027	2,027	2,027	2,027	2,027	2,027	2,027
Groundwater	Wells	3,700	3,700	3,700	3,700	3,700	3,700	3,700	3,700	3,700	3,700
Recycled Water		685	685	685	685	685	685	685	685	685	685
	Total	21,692	21,692	21,692	21,692	21,692	21,692	21,692	21,692	21,692	21,692
NOTES: Volumes are in AF. Projected groundwater supply is based on pumping capacities of existing wells.											

Table 7-1 Retail: Basis of Water Year Data			
Year Type	**Base Year** *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000*	**Available Supplies if Year Type Repeats**	
		☐ Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____	
		☑ Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available	**% of Average Supply**
Average Year	1962	21,692	100%
Single-Dry Year	1977	10,846	50%
Multiple-Dry Years 1st Year	1990	10,846	50%
Multiple-Dry Years 2nd Year	1991	10,846	50%
Multiple-Dry Years 3rd Year	1992	10,846	50%
NOTES: Volumes are in AF. Although the City is presenting the potential for dry year supply reductions, none of the City's supply sources were curtailed in 2015.			

Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 *(Opt)*
Supply totals *(autofill from Table 6-9)*	21,692	21,692	21,692	21,692	21,692
Demand totals *(autofill from Table 4-3)*	4,205	4,383	4,574	4,771	4,978
Difference	17,487	17,309	17,118	16,921	16,714
NOTES: Volumes are in AF. Table references refer to DWR table numbers.					

Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 (Opt)
Supply totals	10,846	10,846	10,846	10,846	10,846
Demand totals	4,205	4,383	4,574	4,771	4,978
Difference	6,641	6,463	6,272	6,075	5,868
NOTES: Volumes are in AF.					

Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	10,846	10,846	10,846	10,846	10,846
	Demand totals	4,205	4,383	4,574	4,771	4,978
	Difference	6,641	6,463	6,272	6,075	5,868
Second year	Supply totals	10,846	10,846	10,846	10,846	10,846
	Demand totals	4,205	4,383	4,574	4,771	4,978
	Difference	6,641	6,463	6,272	6,075	5,868
Third year	Supply totals	10,846	10,846	10,846	10,846	10,846
	Demand totals	4,205	4,383	4,574	4,771	4,978
	Difference	6,641	6,463	6,272	6,075	5,868
NOTES: Volumes are in AF.						

Table 8-1 Retail Stages of Water Shortage Contingency Plan		
Stage	Complete Both	
	Percent Supply Reduction[1]	Water Supply Condition
I - Minor Shortage Potential	10-20%	Below average rainfall for 12-24 months, more than 10% of GW Wells out of service.
II - Moderate Shortage Potential	20-35%	Below average rainfall for 24-36 months, more than 10% of GW Wells out of service.
III - Critical Shortage Potential	35-50%	Below average rainfall for more than 36 months, prolonged periods of low water pressure, more than 10% of GW Wells out of service.
[1] *One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.*		
NOTES: The City's Water Shortage Emergency Plan is also known as a water shortage contingency plan.		

Table 8-2 Retail Only: Restrictions and Prohibitions on End Uses			
Stage	Restrictions and Prohibitions on End Users	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
II, III	Other	Prohibit use of water from fire hydrants for any purpose other than fighting fires.	Yes
II, III	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Prohibit use of water from any meter when consumer has been given 2 days notice to repair any leaks and has failed to comply.	Yes
II, III	Other	No golf course watering except tees and greens.	Yes
II, III	Landscape - Prohibit all landscape irrigation		Yes
II, III	Other - Prohibit use of potable water for construction and dust control		Yes
II, III	Other - Prohibit use of potable water for washing hard surfaces		Yes
II, III	Other water feature or swimming pool restriction	No Fill or refill of pools and spas	Yes
II, III	Pools and Spas - Require covers for pools and spas	No Fill or refill of pools and spas without covers	Yes
II, III	Other	No vehicle washing with hoses	Yes
III	Other	Water rationing (SFR or duplex, 50 gpcd; MF 45 gpcd)	Yes
III	Other	Reduce all water use by 50%	Yes
III	Other	Prohibit water to irrigate	Yes
III	Other	Prohibit use of water for hand watering	Yes
NOTES:			

Table 8-3 Retail Only: **Stages of Water Shortage Contingency Plan - Consumption Reduction Methods**		
Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference *(optional)*
All	Provide Rebates on Plumbing Fixtures and Devices	Low flow toilet replacement program
All	Provide Rebates for Turf Replacement	
All	Reduce System Water Loss	Water meter replacement program
II and III	Implement or Modify Drought Rate Structure or Surcharge	Applies to the Mandatory reduction stages
NOTES:		

Table 8-4 Retail: Minimum Supply Next Three Years			
	2016	2017	2018
Available Water Supply	10,509	10,509	10,509
NOTES: Volumes are in AF.			

Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
City of Ukiah	☑	☑
County Name	60 Day Notice	Notice of Public Hearing
Mendocino County	☑	☑

APPENDIX C

DWR 2015 UWMP Checklist

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Appendix C. Urban Water Management Plan Checklist
Checklist Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	**Section 2.1 (page 2-1)**
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	**Section 2.5.2 (pages 2-3 through 2-4)**
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	**Section 2.5.2.2 (pages 2-3 through 2-4)**
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	**Section 3.1 and 3.2 (pages 3-1 through 3-1)**
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	**Section 3.3 (page 3-1)**
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	**Section 3.4.1 (pages 3-3 through 3-4)**
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	**Section 3.4.2 (page 3-4)**
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	**Section 3.4.1 (pages 3-3 through 3-4); Appendix F**
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	**Section 4.2 (pages 4-1 through 4-4)**
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	**Section 4.3 (page 4-4); Appendix E**
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	**Section 4.5 (page 4-5); Table 4-5**
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and Appendix E	**Section 5.6 (page 2-1); Appendix F**
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Chapter 5 and Appendix E	**Section 5.5, 5.6, and 5.7 (pages 5-3 through 5-4); Appendix F**
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5-year baseline. This does not apply is the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	**Section 5.6 (pages 5-3 through 5-4); Appendix F**
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and Appendix E	**Section 5.7 (page 5-4); Appendix F**
1608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	**Section 5.7 (page 5-4)**
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	**Section 2.4 (Agency is not a wholesale supplier) (page 2-2)**
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and Appendix E	**Section 5.7 (page 5-4); Appendix F**
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	**Chapter 6 (pages 6-1 through 6-13)**
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	**Section 6.2 (page 6-1)**
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	**Section 6.2.2 (page 6-2)**
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	**Section 6.2.1 (page 2-1)**

Appendix C. Urban Water Management Plan Checklist Checklist Arranged by Subject				
CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	**Section 6.2.3 (pages 6-1 through 6-2)**
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	**Section 6.2.3 (page 6-3)**
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years.	System Supplies	Section 6.2.4	**Section 6.2.4 (pages 6-3 through 6-4)**
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	**Section 6.9 (page 6-12)**
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	**Section 6.7 (page 6-10)**
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	**Section 6.8 (page 6-11)**
10631(i)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	**Section 6.6 (page 6-10)**
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	**Section 2.5.1 (page 2-3)**
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	**Section 2.4 (Agency is not a wholesale supplier) (page 2-2)**
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	**Section 6.5.1 (page 6-6)**
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	**Section 6.5.2 (pages 6-6 through 6-7)**
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	**Section 6.5.2 (pages 6-6 through 6-7)**
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	**Sections 6.5.3 and6.5.4.1 (pages 6-9 through 6-9)**
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	**Section 6.5.4.1 (pages 6-8 through 6-9);**
10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6.5.4	**Section 6.5.4 (pages 6-8 through 6-9)**
10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.5	**Section 6.5.5 (page 2-1)**
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	**Section 6.5.5 (page 6-10); Section 6.8 (page 6-11)**
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	**Section 7.4 (page 7-5)**
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	**Section 7.1.5 (page 7-2)**
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	**Section 7.2 (pages 7-2 through 7-3)**
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	**Section 7.1 (pages 7-1 through 7-2)**
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	**Section 7.1.4 (page 7-2)**

Appendix C. Urban Water Management Plan Checklist
Checklist Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	**Section 7.3 (pages 7-3 through 7-5)**
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	**Section 8.1 (page 8-1); Appendix I**
10632(a)(2)	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency.	Water Shortage Contingency Planning	Section 8.9	**Section 8.9 (page 8-5)**
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	**Section 8.8 (page 8-5)**
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	**Section 8.2 (pages 8-1 through 8-2)**
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	**Section 8.4 (page 8-3)**
10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	**Section 8.3 (page 8-3)**
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	**Section 8.6 (pages 8-3 through 8-4)**
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	**Section 8.7 (page 8-4); Appendix J**
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	**Section 8.5 (page 8-3)**
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	**Sections 9.2 and 9.3 (pages 9-1 through 9-6)**
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	**Section 2.4 (Agency is not a wholesale supplier) (page 2-2)**
10631(j)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	**Section 9.5 (page 9-6)**
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	**Section 10.3 (page 10-2)**
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	**Section 10.2 (pages 10-1 through 10-2)**
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	**Section 10.3 and 10.4 (page 10-2)**
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 10.4 (page 10-2)**
10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	**Section 2.5 (pages 2-3 through 2-4), 10.2 and 10.3 (pages 10-1 through 10-2); Appendix D**
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	**Section 10.2 (pages 10-1 through 10-2)**
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	**Section 10.3 (page 10-2)**
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	**Section 10.4 (page 10-2)**

Appendix C. Urban Water Management Plan Checklist Checklist Arranged by Subject				
CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 10.4 (page 10-2)**
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	**Section 10.4 (page 10-2)**
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	**Section 10.5 (page 10-2)**

APPENDIX D

Notices

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City of Ukiah

March 2, 2016

Mr. Sage Sangiacomo
City Manager
City of Ukiah
300 Seminary Avenue
Ukiah, CA 95482

RE: Update of the City of Ukiah Urban Water Management Plan

Dear Mr. Sangiacomo:

The City of Ukiah (City) is currently in the process of updating its Urban Water Management Plan (UWMP). The Urban Water Management Planning Act, Water Code Section 10610 et seq., requires every urban water supplier providing water for municipal purposes, either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, to prepare and adopt an UWMP and periodically update that plan at least every five years. The UWMP is a planning document and a source document which reports, describes and evaluates water deliveries and uses, water supply sources and conservation efforts.

As an urban water supplier, the City coordinates with water management agencies, relevant public agencies and other water suppliers on the preparation of the UWMP update. The City will be reviewing the UWMP and will make amendments and updates, as appropriate.

If you wish to contact the City about its review process, you may do so by writing to the undersigned or by email to jthiele@cityofukiah.com.

Sincerely,

Jarod Thiele
Public Works Analyst
707-5463-6755

cc: City of Ukiah
Mendocino County Local Agency Formation Commission
Redwood Valley County Water District
Millview County Water District
Willow County Water District
Calpella County Water District
Rogina Water Company
Ukiah Chamber of Commerce

Mendocino Environmental Center
Mendocino County
Mendocino County Planning and Building Services
Mendocino County Water Agency
Sonoma County Water Agency
Mendocino County Russian River Flood Control and Water Conservation Improvement District

City of Ukiah

March 2, 2016

Ms. Carmel Angelo
Chief Executive Officer
Mendocino County
501 Low Gap Road
Ukiah, CA 95482

RE: Update of the City of Ukiah Urban Water Management Plan

Dear Ms. Angelo:

The City of Ukiah (City) is currently in the process of updating its Urban Water Management Plan (UWMP). The Urban Water Management Planning Act, Water Code Section 10610 et seq., requires every urban water supplier providing water for municipal purposes, either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, to prepare and adopt an UWMP and periodically update that plan at least every five years. The UWMP is a planning document and a source document which reports, describes and evaluates water deliveries and uses, water supply sources and conservation efforts.

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Sincerely,

Jarod Thiele
Public Works Analyst
707-5463-6755

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City of Ukiah

March 2, 2016

Mr. David Redding
General Manager
Calpella County Water District
PO Box 115
Calpella, CA 95418

RE: Update of the City of Ukiah Urban Water Management Plan

Dear Mr. Redding:

The City of Ukiah (City) is currently in the process of updating its Urban Water Management Plan (UWMP). The Urban Water Management Planning Act, Water Code Section 10610 et seq., requires every urban water supplier providing water for municipal purposes, either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, to prepare and adopt an UWMP and periodically update that plan at least every five years. The UWMP is a planning document and a source document which reports, describes and evaluates water deliveries and uses, water supply sources and conservation efforts.

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City of Ukiah

March 2, 2016

Mr. George Williamson
Executive Officer
Mendocino County Local Agency Formation Commission
200 South School Street
Ukiah, CA 95482

RE: Update of the City of Ukiah Urban Water Management Plan

Dear Mr. Williamson:

The City of Ukiah (City) is currently in the process of updating its Urban Water Management Plan (UWMP). The Urban Water Management Planning Act, Water Code Section 10610 et seq., requires every urban water supplier providing water for municipal purposes, either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, to prepare and adopt an UWMP and periodically update that plan at least every five years. The UWMP is a planning document and a source document which reports, describes and evaluates water deliveries and uses, water supply sources and conservation efforts.

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Jarod Thiele
Public Works Analyst
707-5463-6755

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City of Ukiah

March 2, 2016

Mr. Steve Dunnicliff
Director
Mendocino County Planning and Building Services
860 North Bush Street
Ukiah, CA 95482

RE: Update of the City of Ukiah Urban Water Management Plan

Dear Mr. Dunnicliff:

The City of Ukiah (City) is currently in the process of updating its Urban Water Management Plan (UWMP). The Urban Water Management Planning Act, Water Code Section 10610 et seq., requires every urban water supplier providing water for municipal purposes, either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, to prepare and adopt an UWMP and periodically update that plan at least every five years. The UWMP is a planning document and a source document which reports, describes and evaluates water deliveries and uses, water supply sources and conservation efforts.

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Sincerely,

Jarod Thiele

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Public Works Analyst
707-5463-6755

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City of Ukiah

March 2, 2016

General Manager
Mendocino County Russian River Flood Control and Water Conservation Improvement District
151 Law Avenue, Suite D
Ukiah, CA 95482

RE: Update of the City of Ukiah Urban Water Management Plan

Dear General Manager:

The City of Ukiah (City) is currently in the process of updating its Urban Water Management Plan (UWMP). The Urban Water Management Planning Act, Water Code Section 10610 et seq., requires every urban water supplier providing water for municipal purposes, either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, to prepare and adopt an UWMP and periodically update that plan at least every five years. The UWMP is a planning document and a source document which reports, describes and evaluates water deliveries and uses, water supply sources and conservation efforts.

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Public Works Analyst
707-5463-6755

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City of Ukiah

March 2, 2016

Ms. Carmel Angelo
General Manager
Mendocino County Water Agency
501 Low Gap Road, Room 1010
Ukiah, CA 95482

RE: Update of the City of Ukiah Urban Water Management Plan

Dear Ms. Angelo:

The City of Ukiah (City) is currently in the process of updating its Urban Water Management Plan (UWMP). The Urban Water Management Planning Act, Water Code Section 10610 et seq., requires every urban water supplier providing water for municipal purposes, either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, to prepare and adopt an UWMP and periodically update that plan at least every five years. The UWMP is a planning document and a source document which reports, describes and evaluates water deliveries and uses, water supply sources and conservation efforts.

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City of Ukiah

March 2, 2016

Board of Directors
Mendocino Environmental Center
106 West Standley Street
Ukiah, CA 95482

RE: Update of the City of Ukiah Urban Water Management Plan

Dear Board of Directors:

The City of Ukiah (City) is currently in the process of updating its Urban Water Management Plan (UWMP). The Urban Water Management Planning Act, Water Code Section 10610 et seq., requires every urban water supplier providing water for municipal purposes, either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, to prepare and adopt an UWMP and periodically update that plan at least every five years. The UWMP is a planning document and a source document which reports, describes and evaluates water deliveries and uses, water supply sources and conservation efforts.

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707-5463-6755

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City of Ukiah

March 2, 2016

Mr. Bill Koehler
General Manager
Millview County Water District
151 Laws Avenue
Ukiah, CA 95482

RE: Update of the City of Ukiah Urban Water Management Plan

Dear Mr. Koehler:

The City of Ukiah (City) is currently in the process of updating its Urban Water Management Plan (UWMP). The Urban Water Management Planning Act, Water Code Section 10610 et seq., requires every urban water supplier providing water for municipal purposes, either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, to prepare and adopt an UWMP and periodically update that plan at least every five years. The UWMP is a planning document and a source document which reports, describes and evaluates water deliveries and uses, water supply sources and conservation efforts.

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City of Ukiah

March 2, 2016

Mr. Dan Rogina
President
Rogina Water Company
1850 Talmage Road
Ukiah, CA 95482

RE: Update of the City of Ukiah Urban Water Management Plan

Dear Mr. Rogina:

The City of Ukiah (City) is currently in the process of updating its Urban Water Management Plan (UWMP). The Urban Water Management Planning Act, Water Code Section 10610 et seq., requires every urban water supplier providing water for municipal purposes, either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, to prepare and adopt an UWMP and periodically update that plan at least every five years. The UWMP is a planning document and a source document which reports, describes and evaluates water deliveries and uses, water supply sources and conservation efforts.

As an urban water supplier, the City coordinates with water management agencies, relevant public agencies and other water suppliers on the preparation of the UWMP update. The City will be reviewing the UWMP and will make amendments and updates, as appropriate.

If you wish to contact the City about its review process, you may do so by writing to the undersigned or by email to jthiele@cityofukiah.com.

Sincerely,

Jarod Thiele

Jarod Thiele
Public Works Analyst
707-5463-6755

cc: City of Ukiah
Mendocino County Local Agency Formation Commission
Redwood Valley County Water District
Millview County Water District
Willow County Water District
Calpella County Water District
Rogina Water Company
Ukiah Chamber of Commerce

Mendocino Environmental Center
Mendocino County
Mendocino County Planning and Building Services
Mendocino County Water Agency
Sonoma County Water Agency
Mendocino County Russian River Flood Control and Water Conservation Improvement District

City of Ukiah

March 2, 2016

Mr. Bill Koehler
General Manager
Redwood Valley County Water District
PO Box 399
Redwood Valley, CA 95470

RE: Update of the City of Ukiah Urban Water Management Plan

Dear Mr. Koehler:

The City of Ukiah (City) is currently in the process of updating its Urban Water Management Plan (UWMP). The Urban Water Management Planning Act, Water Code Section 10610 et seq., requires every urban water supplier providing water for municipal purposes, either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, to prepare and adopt an UWMP and periodically update that plan at least every five years. The UWMP is a planning document and a source document which reports, describes and evaluates water deliveries and uses, water supply sources and conservation efforts.

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Sonoma County Water Agency
Mendocino County Russian River Flood Control and Water Conservation Improvement District

City of Ukiah

March 2, 2016

Mr. Grant Davis
General Manager
Sonoma County Water Agency
404 Aviation Boulevard
Santa Rosa, CA 95403

RE: Update of the City of Ukiah Urban Water Management Plan

Dear Mr. Davis:

The City of Ukiah (City) is currently in the process of updating its Urban Water Management Plan (UWMP). The Urban Water Management Planning Act, Water Code Section 10610 et seq., requires every urban water supplier providing water for municipal purposes, either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, to prepare and adopt an UWMP and periodically update that plan at least every five years. The UWMP is a planning document and a source document which reports, describes and evaluates water deliveries and uses, water supply sources and conservation efforts.

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Sincerely,

Jarod Thiele
Public Works Analyst
707-5463-6755

cc: City of Ukiah
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Mendocino County Russian River Flood Control and Water Conservation Improvement District

City of Ukiah

March 2, 2016

Ms. Erica Banta
Executive Director
Ukiah Chamber of Commerce
200 South School Street
Ukiah, CA 95482

RE: Update of the City of Ukiah Urban Water Management Plan

Dear Ms. Banta:

The City of Ukiah (City) is currently in the process of updating its Urban Water Management Plan (UWMP). The Urban Water Management Planning Act, Water Code Section 10610 et seq., requires every urban water supplier providing water for municipal purposes, either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, to prepare and adopt an UWMP and periodically update that plan at least every five years. The UWMP is a planning document and a source document which reports, describes and evaluates water deliveries and uses, water supply sources and conservation efforts.

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Sincerely,

Jarod Thiele
Public Works Analyst
707-5463-6755

cc: City of Ukiah
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Mendocino County Russian River Flood Control and Water Conservation Improvement District

City of Ukiah

March 2, 2016

Mr. David Redding
General Manager
Willow County Water District
151 Laws Avenue
Ukiah, CA 95482

RE: Update of the City of Ukiah Urban Water Management Plan

Dear Mr. Redding:

The City of Ukiah (City) is currently in the process of updating its Urban Water Management Plan (UWMP). The Urban Water Management Planning Act, Water Code Section 10610 et seq., requires every urban water supplier providing water for municipal purposes, either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, to prepare and adopt an UWMP and periodically update that plan at least every five years. The UWMP is a planning document and a source document which reports, describes and evaluates water deliveries and uses, water supply sources and conservation efforts.

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Sincerely,

Jarod Thiele
Public Works Analyst
707-5463-6755

cc: City of Ukiah
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Mendocino County Russian River Flood Control and Water Conservation Improvement District

APPENDIX E

DWR Water Audit

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AWWA Free Water Audit Software v5.0

This spreadsheet-based water audit tool is designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. It provides a "top-down" summary water audit format, and is not meant to take the place of a full-scale, comprehensive water audit format.

Auditors are strongly encouraged to refer to the most current edition of AWWA M36 Manual for Water Audits for detailed guidance on the water auditing process and targetting loss reduction levels

The spreadsheet contains several separate worksheets. Sheets can be accessed using the tabs towards the bottom of the screen, or by clicking the buttons below.

Please begin by providing the following information

Name of Contact Person:	Sean White
Email Address:	swhite@cityofukiah.com
Telephone (incl Ext.):	707 467-5712
Name of City / Utility:	City of Ukiah
City/Town/Municipality:	Ukiah
State / Province:	California (CA)
Country:	USA
Year:	2015
Start Date:	01/2015 Enter MM/YYYY numeric format
End Date:	12/2015 Enter MM/YYYY numeric format
Audit Preparation Date:	5/5/2016
Volume Reporting Units:	Million gallons (US)
PWSID / Other ID:	2310003

The following guidance will help you complete the Audit

All audit data are entered on the ***Reporting Worksheet***

- Value can be entered by user
- Value calculated based on input data
- These cells contain recommended default values

Use of Option (Radio) Buttons: Pcnt: 0.25% Value:

Select the default percentage by choosing the option button on the left

To enter a value, choose this button and enter a value in the cell to the right

The following worksheets are available by clicking the buttons below or selecting the tabs along the bottom of the page

Instructions
The current sheet. Enter contact information and basic audit details (year, units etc)

Reporting Worksheet
Enter the required data on this worksheet to calculate the water balance and data grading

Comments
Enter comments to explain how values were calculated or to document data sources

Performance Indicators
Review the performance indicators to evaluate the results of the audit

Water Balance
The values entered in the Reporting Worksheet are used to populate the Water Balance

Dashboard
A graphical summary of the water balance and Non-Revenue Water components

Grading Matrix
Presents the possible grading options for each input component of the audit

Service Connection Diagram
Diagrams depicting possible customer service connection line configurations

Definitions
Use this sheet to understand the terms used in the audit process

Loss Control Planning
Use this sheet to interpret the results of the audit validity score and performance indicators

Example Audits
Reporting Worksheet and Performance Indicators examples are shown for two validated audits

Acknowledgements
Acknowledgements for the AWWA Free Water Audit Software v5.0

If you have questions or comments regarding the software please contact us via email at: wlc@awwa.org

AWWA Free Water Audit Software:
Reporting Worksheet

? Click to access definition
+ Click to add a comment

Water Audit Report for: City of Ukiah (2310003)
Reporting Year: 2015 (1/2015 - 12/2015)

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

<---------- Enter grading in column 'E' and 'J' ----------> Pcnt: Value:

Volume from own sources:	10	825.544	MG/Yr	10	0.00%		MG/Yr
Water imported:	n/a	0.000	MG/Yr				MG/Yr
Water exported:	n/a	0.000	MG/Yr				MG/Yr
WATER SUPPLIED:		**825.544**	MG/Yr				

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

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

Pcnt: Value:

Billed metered:	9	701.679	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	8.298	MG/Yr			
Unbilled unmetered:		10.319	MG/Yr	1.25%		MG/Yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

Use buttons to select percentage of water supplied **OR** value

AUTHORIZED CONSUMPTION:	**720.296**	MG/Yr			
WATER LOSSES (Water Supplied - Authorized Consumption)	**105.248**	MG/Yr			

Apparent Losses

Pcnt: Value:

Unauthorized consumption:	2.064	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies: 8	0.000	MG/Yr			MG/Yr
Systematic data handling errors: 8	1.754	MG/Yr	0.25%		MG/Yr
Apparent Losses:	**3.818**	MG/Yr			

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses:	**101.430**	MG/Yr
WATER LOSSES:	**105.248**	MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER:	**123.865**	MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains: 8	62.0	miles	
Number of active AND inactive service connections: 8	4,779		
Service connection density:	77	conn./mile main	
Are customer meters typically located at the curbstop or property line?	Yes		(length of service line, beyond the property boundary, that is the responsibility of the utility)
Average length of customer service line:			

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

Average operating pressure: 8	85.0	psi	

COST DATA

Total annual cost of operating water system: 9	$3,135,637	$/Year	
Customer retail unit cost (applied to Apparent Losses): 9	$2.73	$/100 cubic feet (ccf)	
Variable production cost (applied to Real Losses): 9	$621.41	$/Million gallons	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 87 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Unauthorized consumption
2: Systematic data handling errors
3: Unbilled metered

APPENDIX F

SB X7-7 Compliance and Verification Forms

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

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	**Parameter**	**Value**	**Units**
10- to 15-year baseline period	2008 total water deliveries	3,059	Acre Feet
	2008 total volume of delivered recycled water	-	Acre Feet
	2008 recycled water as a percent of total deliveries	0.00%	Percent
	Number of years in baseline period[1, 2]	10	Years
	Year beginning baseline period range	1995	
	Year ending baseline period range[3]	2004	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2003	
	Year ending baseline period range[4]	2007	

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

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

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

NOTES:

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

SB X7-7 Table 3: Service Area Population		
Year		**Population**
10 to 15 Year Baseline Population		
Year 1	1995	14,977
Year 2	1996	15,088
Year 3	1997	15,263
Year 4	1998	15,351
Year 5	1999	15,403
Year 6	2000	15,497
Year 7	2001	15,622
Year 8	2002	14,747
Year 9	2003	16,009
Year 10	2004	16,029
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2003	16,009
Year 2	2004	16,029
Year 3	2005	16,020
Year 4	2006	15,960
Year 5	2007	15,959
2015 Compliance Year Population		
2015		16,073
NOTES:		

SB X7-7 Table 4: Annual Gross Water Use *

Baseline Year *Fm SB X7-7 Table 3*		Volume Into Distribution System *This column will remain blank until SB X7-7 Table 4-A is completed.*	Deductions					Annual Gross Water Use
			Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water *This column will remain blank until SB X7-7 Table 4-B is completed.*	Water Delivered for Agricultural Use	Process Water *This column will remain blank until SB X7-7 Table 4-D is completed.*	
10 to 15 Year Baseline - Gross Water Use								
Year 1	1995	3,879			-		-	3,879
Year 2	1996	4,036			-		-	4,036
Year 3	1997	3,910			-		-	3,910
Year 4	1998	3,762			-		-	3,762
Year 5	1999	4,223			-		-	4,223
Year 6	2000	4,097			-		-	4,097
Year 7	2001	4,088			-		-	4,088
Year 8	2002	4,164			-		-	4,164
Year 9	2003	3,870			-		-	3,870
Year 10	2004	4,131			-		-	4,131
Year 11	0	-			-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
10 - 15 year baseline average gross water use								**4,016**
5 Year Baseline - Gross Water Use								
Year 1	2003	3,870			-		-	3,870
Year 2	2004	4,131			-		-	4,131
Year 3	2005	3,753			-		-	3,753
Year 4	2006	3,833			-		-	3,833
Year 5	2007	3,744			-		-	3,744
5 year baseline average gross water use								**3,866**
2015 Compliance Year - Gross Water Use								
2015		2,534	-		-		-	**2,534**

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

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution System(s)

Complete one table for each source.

Name of Source	All sources		
This water source is:			
☑	The supplier's own water source		
☐	A purchased or imported source		

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1995	3879		3,879
Year 2	1996	4036		4,036
Year 3	1997	3910		3,910
Year 4	1998	3762		3,762
Year 5	1999	4223		4,223
Year 6	2000	4097		4,097
Year 7	2001	4088		4,088
Year 8	2002	4164		4,164
Year 9	2003	3870		3,870
Year 10	2004	4131		4,131
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-
5 Year Baseline - Water into Distribution System				
Year 1	2003	3870		3,870
Year 2	2004	4131		4,131
Year 3	2005	3753		3,753
Year 4	2006	3833		3,833
Year 5	2007	3744		3,744
2015 Compliance Year - Water into Distribution System				
2015		2534		2,534

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

NOTES: Volumes are in AF.

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Annual Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1995	14,977	3,879	231
Year 2	1996	15,088	4,036	239
Year 3	1997	15,263	3,910	229
Year 4	1998	15,351	3,762	219
Year 5	1999	15,403	4,223	245
Year 6	2000	15,497	4,097	236
Year 7	2001	15,622	4,088	234
Year 8	2002	14,747	4,164	252
Year 9	2003	16,009	3,870	216
Year 10	2004	16,029	4,131	230
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				**233**
5 Year Baseline GPCD				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use
Year 1	2003	16,009	3,870	216
Year 2	2004	16,029	4,131	230
Year 3	2005	16,020	3,753	209
Year 4	2006	15,960	3,833	214
Year 5	2007	15,959	3,744	209
5 Year Average Baseline GPCD				**216**
2015 Compliance Year GPCD				
2015		16,073	2,534	**141**

NOTES: Volumes are in AF.

SB X7-7 Table 6: Gallons per Capita per Day *Summary From Table SB X7-7 Table 5*	
10-15 Year Baseline GPCD	233
5 Year Baseline GPCD	216
2015 Compliance Year GPCD	141
NOTES:	

SB X7-7 Table 7: 2020 Target Method

Select Only One

Target Method		Supporting Documentation
☑	Method 1	SB X7-7 Table 7A
☐	Method 2	SB X7-7 Tables 7B, 7C, and 7D *Contact DWR for these tables*
☐	Method 3	SB X7-7 Table 7-E
☐	Method 4	Method 4 Calculator

NOTES:

SB X7-7 Table 7-A: Target Method 1 20% Reduction	
10-15 Year Baseline GPCD	**2020 Target GPCD**
233	**186**
NOTES:	

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD *From SB X7-7 Table 5*	Maximum 2020 Target[1]	Calculated 2020 Target[2]	**Confirmed 2020 Target**
216	205	186	**186**

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

NOTES:

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target *Fm SB X7-7 Table 7-F*	10-15 year Baseline GPCD *Fm SB X7-7 Table 5*	**2015 Interim Target GPCD**
186	233	**209**
NOTES:		

SB X7-7 Table 9: 2015 Compliance								
Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments *(in GPCD)* Enter "0" if Adjustment Not Used			TOTAL Adjustments	Adjusted 2015 GPCD	2015 GPCD *(Adjusted if applicable)*	**Did Supplier Achieve Targeted Reduction for 2015?**
		Extraordinary Events	Weather Normalization	Economic Adjustment				
141	209	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	0	141	141	**YES**
NOTES:								

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APPENDIX G

Technical Memorandum on Water Supply, Rights, and Reliability
(Wagner & Bonsignore)

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Technical Analysis
of
Future Water Supply Reliability

Supporting Chapters 4 and 5
Of the
City of Ukiah 2010 Urban Water Management Plan

June, 2011

Wagner&Bonsignore
Consulting Civil Engineers, A Corporation
2151 River Plaza Drive, Suite 100
Sacramento CA 95833

Table of Contents

EXECUTIVE SUMMARY 4

UWMP CHAPTER 4 5

4.1 Water Supply Sources 6
4.2 Groundwater Basin 10
4.3 Existing And Projected Groundwater Pumping 13
4.4 Transfer And Exchange Opportunities 14
4.5 Desalinated Water Opportunities 15
4.6 Recycled Water Opportunities 15
4.7 Future Water Projects 15

UWMP CHAPTER 5 16

5.1 Water Supply Reliability 17
5.2 Water Shortage Contingency Planning 23
5.3 Water Quality 23
5.4 Drought Planning 24

EVALUATION OF WATER SUPPLY RELIABILITY SUPPORTING CHAPTERS 4 AND 5 OF THE UWMP 29

Introduction 30
Assumptions And Supporting Documentation 30
Section 1: Projected Water Use 30
Section 2: Projected Future Russian River Hydrology 32
Evaluation Of Water Supply Reliability 36

ATTACHMENTS

List of Figures:

Figure 1 – City of Ukiah Water Use

Figure 2 – City of Ukiah Average Monthly Water Use

Figure 3 - City of Ukiah Monthly Pattern of Pumping & Resulting Depletion to Russian River

Figure 4 - Lake Pillsbury Target and Maximum Storage

Figure 5 - Potter Valley Project Imports to East Fork Russian River

Figure 6 - Historical Lake Mendocino Content

Figure 7 - Russian River Average Net Loss, Forks to Healdsburg, 1987-2009

Figure 8 - Historical Russian Minimum River Flow in Excess of D-1610 Requirement Attributable to Release from Lake Mendocino, 1988-2006

Figure 9 - Historical Change in Russian River Net Loss, Forks to Healdsburg

Figure 10 - Average Modeled Downstream Demand, 1961-2009

Figure 11 - Average Modeled Downstream Demand, 1961-2009

Figure 12 - Lake Mendocino Modeled Outflow

Figure 13 - Lake Mendocino Modeled Elevation

List of Tables:

Table 1 Projected Total Annual Diversion

Table 2 Estimated Annual Depletion

Table 3 Historical Potter Valley PowerHouse Import to E. Fork of the Russian River

Table 4 Lake Mendocino Historical Inflows

Plates

Plate I - Groundwater Availability in the Ukiah Groundwater Basin

Plate II - Groundwater Wells in Ukiah Valley

Executive Summary

This report documents analyses conducted to evaluate water supply reliability for the 2010 City of Ukiah Urban Water Management Plan update. The analysis considers the Russian River hydrology in the context of the changing regulatory environment affecting resource management decisions, as well as City of Ukiah projected maximum demand authorized under its existing water right permit.

The City holds, among other water rights, a 1954 appropriative water right Permit 12952 (Application 15704) for 20 cfs from Russian River Underflow. To determine the maximum authorized diversion volume under the terms of the permit, we evaluated monthly water use for the 2004 through 2010 period, and found that peak demand occurs in July. Accordingly, we fixed July demand at 20 cfs, and projected demand for the remaining months based on the monthly average use pattern. The projected annual demand is expected to be around 8,700 acre-feet. This demand was used to evaluate depletion from the Russian River, which was estimated to be 37% of the total demand on an annual basis.

In addition to projected demand from the City, the analysis evaluated water required to satisfy other demands downstream of Lake Mendocino, including river losses, and all releases required to meet minimum instream flow requirements under both the 2008 Biological Opinion related to salmonids in the Russian River, and State Water Resources Control Board Decision 1610. Inflow to the Russian River system was estimated based on historic gaged flow from the Eel River imports, the East and West Forks of the Russian River and naturally tributary areas.

The results of the analysis indicate that water is available from the Russian River to meet the City of Ukiah's projected maximum demand under Permit 12952 (Application 15704) under a regulatory environment dictated by the terms of Decision 1610, or the Biological Opinion. Furthermore, the analysis demonstrates that the City's maximum demand has an insignificant impact on the Russian River system, as demonstrated by the negligible reduction in water surface elevation of Lake Mendocino.

Average unimpaired tributary inflow to the Ukiah Valley as measured at the West Fork Russian River gage is about 126,000 acre feet annually. Average unimpaired inflow as previously calculated for the 1975 through 2003 period of record from the East Fork Russian River is 77,000 acre feet annually. Precipitation falling on the watershed tributary to Ukiah Valley (137 square miles) is 267,000 acre feet annually, based on an average of 36.5 inches of precipitation per year. Although a portion of the precipitation will contribute to runoff, conservatively assuming that 25% recharges, an average of 67,000 acre-feet per year is available. Accordingly, the total recharge opportunity to the Ukiah Valley including the Russian River and precipitation is conservatively estimated at about 270,000 acre-feet per year, on average, and exceeds the City's expected maximum 8,700 acre-foot draft on the groundwater resources by 3,100%. Consequently we do not expect the groundwater resources to experience any meaningful long term decline in the future.

Accordingly, the analysis supports the information provided in Chapters 4 and 5 of the Urban Water Management Plan. Specifically, the analysis demonstrates that the City's appropriative rights provide a reliable water supply, and that the City's projected maximum diversion does not measurably impact the underlying groundwater table or the Russian River.

CHAPTER 4

2010 CITY OF UKIAH

URBAN WATER MANAGEMENT PLAN

4.1 WATER SUPPLY SOURCES

The City's water supply sources include groundwater, surface water from the underflow of the Russian River, and 800 acre-feet of project water available from the Mendocino County Russian River Flood Control and Water Conservation Improvement District. The City is completing a recycled water management plan, and recycled water may become available as an additional supply. Table 4.2 below below provides a summary of the water supply sources.

4.1.1 Water Supply Facilities

The following table provides a list of all groundwater and surface water diversion facilities currently in use by the City.

Table 4.1 Water Supply Wells
2010 Urban Water Management Plan
City of Ukiah

Facility	Type of Supply	Current Status	Production Capacity (gpm)
Ranney Collector[(2)]	Surface water	Active	3194
Well #3	Groundwater influenced by surface water	Active	600
Well #4	Groundwater	Active	799
Well #5	Groundwater influenced by surface water	Active	300
Well #7	Groundwater	Active	799
Well #8	Groundwater	Active	694
	Total Active Well Capacity 100% (gpm)		**6,386**
	Total Active Well Capacity 100% (AFY)		**10,308**
	Total Active Well Capacity 80% (AFY)		**8,246**

Notes:
1. Source: City staff records.
2. The Ranney Collector can only be used during the dry season when surface water turbidity is low.

The supply facilities summarized above are described in more detail in the following sections.

Surface Water Diversion

The City's surface water supply is obtained from a Ranney collector and Wells 3 and 5, which draw water from an alluvial zone along the Russian River. The supply source has been deemed groundwater under the direct influence of surface water by the California Department of Public Health (CDPH) pursuant to 22 CCR §64651.10 of the California Water Works Standards. The determination is based on turbidity of the diverted water, which fluctuates with the turbidity in the Russian River. Accordingly, although the diversion is from Russian River underflow and may also be considered groundwater, water diverted from the Ranney Collector and Wells 3 and 5 is classified as surface water. Well 3 has an estimated pumping capacity of 600 gpm and Well 5 has an estimated pumping capacity of 300 gpm. The Ranney collector was constructed in 1966 along the banks of the Russian River with a design capacity of 13 million gallons per day (mgd). Production has steadily declined from a maximum of 9 mgd to a current capacity of 4.6 mgd. The significant capacity loss may be a result of clay and silt compaction above the Ranney Collector, or may indicate that the Russian River channel is moving away from the Ranney collector. The Ranney collector can only be used when turbidity in the Russian River is low, a condition which occurs during dry weather conditions. During the rainy months, Russian River turbidity increases and the Microfloc contact clarification-filtration units located at the water treatment plant cannot be operated efficiently.

Groundwater

The City currently diverts groundwater at Wells 4, 7 and 8. Well 4 has a capacity of 799 gpm, Well 7 has a capacity of 799 gpm and Well 8 has a capacity of 694 gpm. Wells 7 and 8 were brought online in 2008.

4.1.2 Distribution System and Storage

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Current and Projected Water Sources

The following is a summary of the City's current and projected water sources, followed by a description of the basis of right for each source.

Table 4.2 Water Supplies – Current and Projected (Guidebook Table 16)
2010 Urban Water Management Plan
City of Ukiah

Water Supply Sources		2010	2015	2020	2025	2030	2035 - opt
Water purchased from:	**Wholesaler supplied volume (yes/no)**						
Project Water (Mendocino County Russian River Flood Control and Water Conservation Improvement District)	Yes	800	800	800	800	800	800
Supplier-produced groundwater[1]	No	3,705	3,705	3,705	3,705	3,705	3,705
Supplier-produced surface water Permit 12952 (Application 15704)[2]	No	14,480	14,480	14,480	14,480	14,480	14,480
Supplier-produced surface water (pre-1914 Rights)	No	2,027	2,027	2,027	2,027	2,027	2,027
Transfers in	No	0	0	0	0	0	0
Exchanges In	No	0	0	0	0	0	0
Recycled Water[3]	No	0	603	883	1,163	1,723	2,283
Desalinated Water	No	0	0	0	0	0	0
	Total	**21,012**	**21,615**	**21,895**	**22,175**	**22,735**	**23,295**

Units: acre-feet per year

[1] Assumed groundwater pumping capacity based on information from Carollo Engineering is 3,705 acre-feet.
[2]Permit 12952 (A15704) is authorizes diversion of 20 cfs, with no annual limit. As a practical matter, if peak demand is 20 cfs, annual total diversion distributed according to current use patterns would result in a total diversion of approximately 8,700 acre-feet. However, the City's water right is valid for the 14,480 acre-feet as reported above.
[3] Estimate of recycled water available provided by Carollo Engineering.

The following sections describe the water supply sources itemized in Table 4.2 above.

Contract Water/Project Water

Mendocino County Russian River Flood Control and Water Conservation Improvement District (District) holds Water Right Permit 12947B for storage and use of up to 8,000 AF annually of water stored in Lake Mendocino and/or directly diverted from the East Fork of the Russian River. The City has a water supply agreement that allows the purchase up to 800 AF of water annually under the District's permit. The District is considered a wholesale provider for purposes of this UWMP, and Table 4.3 in section 4.1.4 provides the projected wholesale amounts of project water.

Supplier Produced Groundwater

The City assumes Wells 4, 7 and 8 pump groundwater. However, the City has filed petitions with the State Water Resources Control Board to add Wells 5, 7 and 8 to its water right permit, as a precaution in the event there is an evidentiary finding that the water pumped from wells is actually subject to the permitting authority of the Sate Water Board. There is a legal presumption that groundwater pumped from a groundwater basin is not subject to appropriation by permit. The City does not waive this legal presumption regarding groundwater.

Appropriative Rights: Supplier Produced Surface Water

An evaluation of the groundwater and surface water available to satisfy the City's appropriative rights is provided in Appendix 1 for reference. The following describes the City's appropriative rights.

Water Right Permit 12952 (Application 15704)

Water Right Permit 12952 (Application15704) provides for the diversion of Russian River underflow for municipal purposes. Under this Permit, water can be diverted at a rate not to exceed 20.0 cfs (9,000 gpm) from January 1 through December 31 (with no annual limit). The Permit expired on December 31, 2000 and the City filed a Petition for Extension of Time with the State Water Board. The City has also filed a Petition with the State Water Board to add Wells 5, 7 and 8 and expand its place of use under Permit 12952 (Application 15704). The Permit is valid while the Petitions are processed and currently covers Wells 2 (no longer in use) and 3 and the Ranney collector.

Pre 1914 Water Right

The City has Pre-1914 Appropriative Right for at least 2.8 cfs for diversion from the Russian River for a maximum of 2,027 acre-feet annually. This water right is recognized in State Water Rights Board (predecessor to State Water Resources Control Board) Decision 1030.

Recycled Water

The City is currently completing a recycled water management plan, and anticipates that recycled water could be available for landscape irrigation and consumptive reuse within the water treatment plant.

Wholesale Supplies

Table 4-3	Wholesale Supplies – Existing, Planned Sources of Water (Guidebook Table 17) 2010 Urban Water Management Plan City of Ukiah					
Wholesale sources	**Contracted Volume**	**2015**	**2020**	**2025**	**2030**	**2035 - opt**
District[1]	800	800	800	800	800	800

Units: acre-feet per year

[1]*Mendocino County Russian River Flood Control and Water Conservation Improvement District*

4.2 GROUNDWATER BASIN

This section provides a description of the Ukiah Valley Groundwater Basin.

4.2.1 Groundwater Basin Description

The Ukiah Valley groundwater basin (Number 1-52 as described in California Department of Water Resources Bulletin 118) is located in southeastern Mendocino County and is the largest basin along the Russian River. This basin is not adjudicated.

The Ukiah Valley groundwater basin (aquifer) is approximately 22 miles long and 5 miles wide and underlies Ukiah Valley and Redwood Valley. Geologic and groundwater characteristics underlying Sanel Valley are similar, however, bedrock effectively separates the Sanel aquifer from the Ukiah aquifer.

The Ukiah Valley is the largest of several interior valleys in Mendocino County that fall along the north-northwest trending Maacama Fault Zone. The basement rock is of the Franciscan Complex, of variable but minor water yielding capacity. The valley is filled up to 2000 feet deep with unconsolidated or loosely cemented gravel, sand, silt, and clay deposited through eons of erosion, transport and sedimentation.

The valley fill is categorized as three separate deposits. The oldest and lowest unit is the continental basin deposits. It is estimated to be up to 2000 feet in depth near the axis of the valley. Wells completed in the continental basin deposits produce water slowly because of consolidated, fine-grained material and low permeability. Well yield ranges from 1 – 50 gallons per minute (gpm). The second unit is the continental terrace deposits, situated mostly on the periphery of the valley. These deposits are relatively thin (up to 25 feet), have a low permeability and are not a significant groundwater source.

The third valley fill unit is the Holocene alluvium, consisting of uncemented gravel, sand, silt and clay deposited in the last 10,000 years. The Holocene alluvium covers approximately 30 square miles

throughout broad areas of the flood plain and more narrow bands along the Russian River north of the Forks and along tributary streams. It is generally less than 100 feet thick but extends up to 200 feet in depth. Consisting of coarse and uncemented sediments, the alluvium exhibits high porosity and permeability, thereby holding a significant quantity of water and transmitting water rapidly. Well yields range from 100 to 1000 gpm. The principal source of groundwater is infiltration of precipitation. Other sources contributing to Ukiah valley groundwater are streamflow leakage, deep percolation from irrigation and treated effluent discharged via the City of Ukiah percolation ponds.

Information on the storage capacity and groundwater levels within the Ukiah Valley Groundwater Basins is found in the United States Geological Survey (USGS) published Water Resources Investigation Report 85-4258, "Groundwater Resources in Mendocino County, California" which states the following:

• Groundwater wells in the Ukiah Valley Groundwater Basin monitored over a 30 year period show no prominent long-term declines. Hydrograph analysis indicates the Basin is recharged fully each year except when precipitation falls below 60 percent of normal. During the drought of 1976/77 when rainfall was less than 60 percent of normal, the groundwater wells recovered to normal levels by the end of the 1978 rainfall season.

Further, California Department of Water Resources Bulletin 118 "California's Groundwater" states the following:

- Groundwater in storage in the upper 100 feet of the most productive area of the Ukiah Valley is estimated at 90,000 acre-feet.
- Groundwater storage located within the margins of the Ukiah Valley is estimated at an additional 45,000 acre-feet.
- Groundwater levels in the Ukiah Valley Groundwater Basin for the past 30 years have remained relatively stable.
- During drought conditions, drawdown of groundwater levels increases, but the levels recover in post-drought conditions.

The volume of water available from pumping from upper 100 feet of the most productive portion of the aquifer is estimated at 90,000 acre-feet. Groundwater in the alluvium is hydraulically connected to and interacts with surface flows.

The attached Plate I shows the estimated boundaries of the groundwater basin, consistent with DWR Bulletin 118 and estimated groundwater availability within the Ukiah Valley Groundwater Basin.

4.2.2 Groundwater Management Plan

A groundwater management plan has not been prepared for the Ukiah Valley or Mendocino County.

The City may coordinate with other affected agencies within the Basin to develop more information about the Ukiah groundwater basin and as a first step toward developing a groundwater study and a groundwater management plan.

4.2.3 Groundwater Levels and Historical Trends

In general, the Ukiah Valley groundwater basin experiences seasonal and year to year variation in water levels due to climate and pumping stresses, as described in Bulletin 118 and the USGS Investigative Report 85-4258 referenced above. However, these variations tend to be small. Water levels decline in the dry months and some wells may experience declines during successive dry years. But water levels in general have always recovered.

The groundwater table (the underground water surface) fluctuates seasonally, being at its highest level in March or April at the end of the wet season, and at its lowest in October, at the end of the dry season. Seasonal fluctuations range on the order of 5 to 20 feet. Measurements have been taken and recorded over a long time period at a few wells in the valley.

Measurements were generally taken twice a year, at the end of the wet season and at the end of the dry season. The groundwater measurements show the water table rebounds during the wet season to about the same elevation in all but abnormally dry years such as 1977. The water table rebounded completely in one year of normal precipitation. Water surface measurements over the long-term show no trend in groundwater levels.

The attached Plate II shows available groundwater hydrographs within the Ukiah Valley, as described above.

A 1986 USGS investigation of groundwater levels in the Ukiah Valley (Ground-water Resources in Mendocino County, California; U.S. Geological Survey Water-Resources Investigations Report 85-4258; July 1986) found that, “None of the hydrographs show any prominent long-term declines. Water levels measured during the 1980’s are remarkably similar to those measured during the 1960’s and 1970’s.” Bulletin 118 of the California Department of Water Resources, updated 2/27/04, in its section on the Ukiah Valley Groundwater Basin (referenced below and attached) states, “Based on hydrographs from DWR monitored wells, groundwater levels in the past 30 years have remained relatively stable. During drought conditions there is increased drawdown during summer months and less recovery in winter months. Post-drought conditions rebound to approximately the same levels as pre-drought conditions.” (A third reference regarding Ukiah valley groundwater is: Cardwell, G. T.; Geology and Ground Water in Russian River Valley Areas and in Round, Laytonville and Little Lake Valleys Sonoma and Mendocino Counties, California; Geological Survey Water Supply Paper 1548; 1965.)

When the river stage is high, water moves from the river into bank storage, where it is temporarily held until the river stage falls and water drains back to the river. When the aquifer water table is low, as happens toward the end of the dry season, water moves from the river to the aquifer. This is compounded by the effect of phreatophytes (water-loving plants) drawing water from the aquifer. Finally, pumping of wells may cause a localized drawdown of the water table, which may result in flow moving from the river to the aquifer.

Accordingly, as described above, published data indicates the groundwater supplies are adequate to meet existing and future demands. In addition, Plate II contains hydrographs of long-term monitoring wells in

Ukiah Valley. The hydrographs show the seasonal fluctuation due to precipitation, the effect of drought in 1977 and the absence of a long-term trend in water surface elevation.

4.2.4 Groundwater Overdraft

There does not appear to be a long term decline in water levels that would suggest shortage or overdraft in the Ukiah Valley. The basin is not considered over drafted and is not currently projected to be over drafted.

The attached Plate II provides groundwater hydrographs of long-term monitoring wells in Ukiah Valley. The hydrographs show the seasonal fluctuation due to precipitation, the effect of drought in 1977 and the absence of a long-term trend in water surface elevation.

4.3 EXISTING AND PROJECTED GROUNDWATER PUMPING

Table 4.4 below provides information on groundwater pumping reported on the Department of Water Resources Statistics Sheets from 2006 through 2010.

Table 4.4 Groundwater Volume Pumped (Guidebook Table 18)
2010 Urban Water Management Plan
City of Ukiah

Basin name(s)	Metered or Unmetered	2006	2007	2008	2009	2010
Ukiah Valley Groundwater Basin[1]	Metered	1,347	1,185	1,380	1,486	1,990
	Total groundwater pumped	1,347	1,185	1,380	1,486	1,990
Groundwater as a percent of total water supply[2]		**6.4%**	**5.6%**	**6.6%**	**7.1%**	**9.5%**

Units: acre-feet per year

[1]Total water supply is provided in Table 4.2 and is 21,012 acre-feet per year, including contract water, appropriative rights and groundwater. We note that all of the City water whether diverted from groundwater wells or diverted under its appropriative rights is supplied by groundwater.

[2] Groundwater volume reported above taken from DWR statistic sheets 2006-2010.

Table 4.5 below provides projected groundwater pumping volumes for the 2015 – 2035 period of record. The volume is assumed to be the maximum capacity of the City's existing groundwater pumping facilities, which are itemized in Figure 4-1.

Table 4.5	Groundwater – Volume Projected to be Pumped (Guidebook Table 19) 2010 Urban Water Management Plan City of Ukiah				
Basin name(s)	**2015**	**2020**	**2025**	**2030**	**2035**
Total Water Supply (Table 4.2)	21,615	21,895	22,175	22,735	23,295
Ukiah Valley Groundwater Basin[1]	3,705	3,705	3,705	3,705	3,705
Total groundwater pumped	3,705	3,705	3,705	3,705	3,705
Percent of total water supply	17%	17%	17%	16%	16%
Units: acre-feet per year *[1]Groundwater pumped assumed to be total groundwater pumping capacity of Wells 4, 5, 7 and 8.*					

4.4 TRANSFER AND EXCHANGE OPPORTUNITIES

The City does not transfer or exchange water with any of the surrounding water suppliers. However, the City has emergency intertie agreements with Millview County Water District and Redwood Valley County Water District, which provide that in the event of a water supply emergency, the City will receive water deliveries from the Districts through the interconnected supply system.

In addition, the City is considering a regional approach to water management involving water purveyors within the Ukiah Valley. Such an approach would involve cooperation and potential transfers and exchanges between the following regional water suppliers:

- Millview County Water District
- Willow County Water District
- Rogina Water Company
- Calpella County Water District
- Redwood Valley County Water District
- Sonoma County Water Agency
- Hopland Utilities District

The regional planning effort is currently in its early stages, and agencies are identifying priorities and needs prior to moving forward with any potential future transfers or exchanges.

Table 4.6 Transfer and Exchange Opportunities (Guidebook Table 20)
2010 Urban Water Management Plan
City of Ukiah

Transfer agency	Transfer or exchange	Short term or long term	Proposed Volume
Millview County Water District[1]	Yes	Long-term	N/A
Willow County Water District	N/A	0	0
Rogina Water Company	N/A	0	0
Calpella County Water District	N/A	0	0
Redwood Valley County Water District[1]	Yes	Long-Term	N/A
Sonoma County Water Agency	N/A	0	0
Hopland Utility District	N/A	0	0
Total			**0**

Notes:
Units: acre-feet per year
[1]Millview and Redwood Valley Water District are part of an emergency intertie agreement with the City. Although the agreement does not specify volumes, the signatories have agreed to provide water supplies through the interconnected systems in the event of a water supply emergency.

4.5 DESALINATED WATER OPPORTUNITIES

Currently the surface water and groundwater supplies available to the City do not require desalinization. The City has no immediate plans to explore opportunities to desalinate ocean water, due to the plentiful supply of surface and groundwater in the region.

4.6 RECYCLED WATER OPPORTUNITIES

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4.7 FUTURE WATER PROJECTS

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CHAPTER 5

2010 CITY OF UKIAH

URBAN WATER MANAGEMENT PLAN

5.1 WATER SUPPLY RELIABILITY

The following sections provide a description of the City's water supply reliability.

5.1.1 Resource Maximization/Import Minimization

As described in Chapter 4, the City has groundwater and surface water resources available within the Ukiah Valley to meet existing and projected demand. To maximize resources available, the City has continued development of groundwater resources, bringing groundwater Wells 7 and 8 online in 2008. Chapter 4 includes a list of additional water supply development projects the City has planned. In addition, the City maintains its existing surface water diversion facilities (the Ranney Collector and Well 3) and has petitioned the State Water Resources Control Board to include additional points of diversion under Permit 12952 (Application 15704).

Currently the City does not import water and does not anticipate importing water in the future to augment supply.

5.1.2 Factors Affecting Supply Reliability

The following sections provide a description of the various factors which might impact water supply reliability, including legal, environmental, water quality and climatic factors. As indicated below, due to the nature of the City's appropriative rights and the volume of storage within the groundwater basin, it is unlikely that the City would experience a reduction in supply reliability.

An evaluation of the groundwater and surface water available to satisfy the City's appropriative rights is provided in Appendix 1 for reference.

5.1.2.1 Legal Factors

Legal Factors Affecting Groundwater Reliability:

Absent sufficient evidence to the contrary, groundwater is presumed to be percolating groundwater. The 1999 State Water Resources Control Board Decision No. 1639 *In the Matter of Garrapata Water Company* in Monterey County set forth criteria regarding the legal classification of groundwater. According to the Garrapata decision, for groundwater to be classified as surface water subject to appropriation, the following conditions must exist:

1. A subsurface channel must be present;
2. The channel must have relatively impermeable bed and banks;
3. The course of the channel must be known or capable of being determined by reasonable inference;
4. Groundwater must be flowing in the channel.

The Garrapata decision, interpreting section 1200 of the Water Code, was followed and applied in the 2006 opinion of the First District Court of Appeals in the case, *North Gualala Water Company v. State Water Resources Board* (139 Cal. App. 4th 1577). That decision was left standing by the California Supreme Court.

With respect to Ukiah, the State Water Board has not made a finding related to groundwater the City might pump in the future. The legal presumption is that well water is percolating groundwater, and using the applicable legal standards and the available data, the City will make a determination regarding whether future wells require an appropriative water rights permit from the State Water Board. Historically, Division of Water Rights staff have generally accepted that existing Wells 4 pumps groundwater. City Wells 7 and 8 are presumed to pump groundwater, however, in the event of an evidentiary finding, the City has named the wells as proposed points of diversion in its petition before the State Water Board.

Future diversions will be from groundwater sources, whether or not these sources are determined to be under the jurisdiction of the State Water Board.

Legal Factors Affecting Surface Water Reliability

The City's Water Right Permit 12952 expired on December 31, 2000 and the City filed a Petition for Extension of Time with the State Water Board. The Permit is still valid while the Petition for Extension of Time is processed. The City is preparing an environmental impact report (EIR) in support of its application for an extension of time and the City's pending Petitions to change its points of diversion and place of use. The initial study is complete, and the City is currently evaluating its response to comments on the proposed scope of the EIR.

The City has steadily increased its use and has been diligent about maintaining its water right. The State Water Board is empowered to grant an extension of time to put water to beneficial use upon a showing to the State Water Board's satisfaction that due diligence has been exercised, that failure to comply with previous time requirements has been occasioned by obstacles that could not reasonably be avoided, and that satisfactory progress will be made if an extension of time is granted. (See 23 CCR §844.) The City should be able to make the required showing of due diligence, since through no fault of the City, the demand for water has not developed as quickly as was anticipated when the City's permit was issued. The State Water Board wrote in WRO 2000-13, In the Matter of the Petition for Extension of Time of the City of San Luis Obispo, Permit 5882 (A10216)… "a municipality such as San Luis Obispo is to be afforded some latitude in putting water to beneficial use, because the municipality must be able to plan for, and meet, the needs of its existing and future citizens (Water Code section 106.5, 1203.)"

It is reasonable, although not guaranteed, that similar latitude would be granted to the City of Ukiah to develop full beneficial use of its water rights. Water Board approvals of successive extensions of time for municipalities to allow for gradual development has been the norm. As a matter of statutory policy (Water Code, sec. 106.5), municipal water rights are to be "protected to the fullest extent necessary for existing and future uses…" The greater deference shown a municipality is counter balanced by the allowance of temporary permits for the use of excess municipal water by other parties pending the expansion of the municipality's use (Water Code, sec. 1203). There does not appear to be any obstacles to approval of the changes in points of diversion and place of use, subject to California Environmental Quality Act review. The City's request for an extension of time to make full beneficial use of water under its permit does not require a showing of water availability since such a finding was made by the predecessor to the State Water Board in Decision 1030.

In order to grant the City's Petition to change points of diversion and place of use, the State Water Board will need to make a finding that "the change will not operate to the injury of any legal user of water involved" (Water Code, sec. 1702). In relation to junior appropriators, the City has a priority right to the beneficial use of water up to the full volume or rate authorized in its appropriative permit. Beneficial use within that volume and rate does not in itself equate to injury to juniors under the "non-injury" rule. The State Water Board has discretion under appropriate circumstances to condition change orders for the protection of other users. The City knows of no reasonable basis for negative action by the State Water Board concerning the Petition change.

The City's existing permit and pre 1914 right to divert from the Russian River provide a reliable supply source, which is unlikely to be interrupted due to legal factors, as illustrated above.

5.1.2.2 Environmental Factors

Environmental factors affecting water supply reliability include any impediments to supply related to protection of fish and wildlife resources. Groundwater supply has not been impacted by any environmental factors to date, and the City does not anticipate future disruption of groundwater supply as a result of environmental factors. Similarly, the City does not anticipated disruption of surface water supply as a result of environmental factors due to existing regulation of flow rates in the Russian River.

Decision 1610 of the State Water Resources Control Board regarding permits for diversion by the Sonoma County Water Agency (SCWA) specified minimum flow rates to be maintained on the Russian River from the Forks (at Ukiah) to Dry Creek (just south of Healdsburg). The Decision also specified minimum flow rates on Dry Creek (below Lake Sonoma) and on the Russian River from Dry Creek to the ocean. SCWA has met these flow requirements by releasing water from Lake Mendocino and Lake Sonoma in the dry season. Because of the rates involved and the location of Lake Sonoma, the requirements below Healdsburg do not affect management of Lake Mendocino.

Decision 1610 specified minimum flow rates that differ by season of the year and type of water year. The requirements range from as low as 25 cfs in a critically dry month to as high as 185 cfs in the spring with high reservoir levels. The requirements of D-1610 are conditioned on inflow to and storage in Lake Pillsbury (in the headwaters of the Eel River) and on storage in Lake Mendocino.

The Biological Opinion (BO) pursuant to the Endangered Species Act for anadromous salmonids in the Russian River basin issued September 24, 2008 directed the SCWA to file a petition to the State Water Board to amend D-1610 for the purpose of reducing Russian River flows during the dry season. SCWA has filed that petition (as well as an Urgency Petition for the same effect which has been accepted by the State Water Board). The effect of the requirements for the Russian River above Dry Creek is to reduce the minimum flow during the months of June through October in normal years from 150 or 185 cfs (depending on hydrological conditions) to 125 cfs.

The 2007 UWMP included an analysis of water available under various surface water supply scenarios, including a reduction in Eel River imports. In addition, the model was updated in 2010 as part of the City's ongoing EIR analysis. The results of the model indicated that given the current regulatory parameters, surface water is available for diversion by the City. The report is included herewith for reference.

As described above, water is available for diversion under the regulations currently in place to protect fish and wildlife resources. Accordingly, existing environmental regulations ensure supply reliability for the City.

5.1.2.3 Water Quality Factors

Water quality issues are not anticipated to have significant impact on water supply reliability. If applicable in the future, chemical contamination and the lowering of maximum contaminate levels for naturally occurring constituents can be mitigated by construction new treatment facility prior to water delivery into the water distribution system.

5.1.2.4 Climatic Factors

The Ukiah area receives an average of 36.5 inches of precipitation a year, as measured by the DWR "Ukiah" gage near the City of Ukiah. Table 5.1 below shows the annual rainfall measured at the Ukiah gage near the City of Ukiah. The relatively abundant precipitation contributes runoff to the Russian River system and recharges the groundwater basin. During average and above average years, supply exceeds the City's demand.

To evaluate precipitation during dry periods, we evaluated the 25% driest years of record. Table 5.2 shows that during 19 of the 25 dry years, precipitation was over 20 inches. During the dry years, should surface water be unavailable, water supply is available to the City from the groundwater storage basin. The City's demand is insignificant when compared to the volume of water in the groundwater basin, which DWR Bulletin 118 estimates to contain approximately 90,000 acre-feet in storage. In addition, the hydrographs in Plate II demonstrate that groundwater surface elevations do not show evidence of long term reduction, remaining relatively stable.

Accordingly, it is unlikely that the City's supply reliability would be influenced by climatic factors, as the groundwater basin can support the City's demand during below-average precipitation periods.

Chart 5.1

Annual Precipitation Measured at Ukiah Precipitation Station near Ukiah, California

(Precipitation measured in inches)

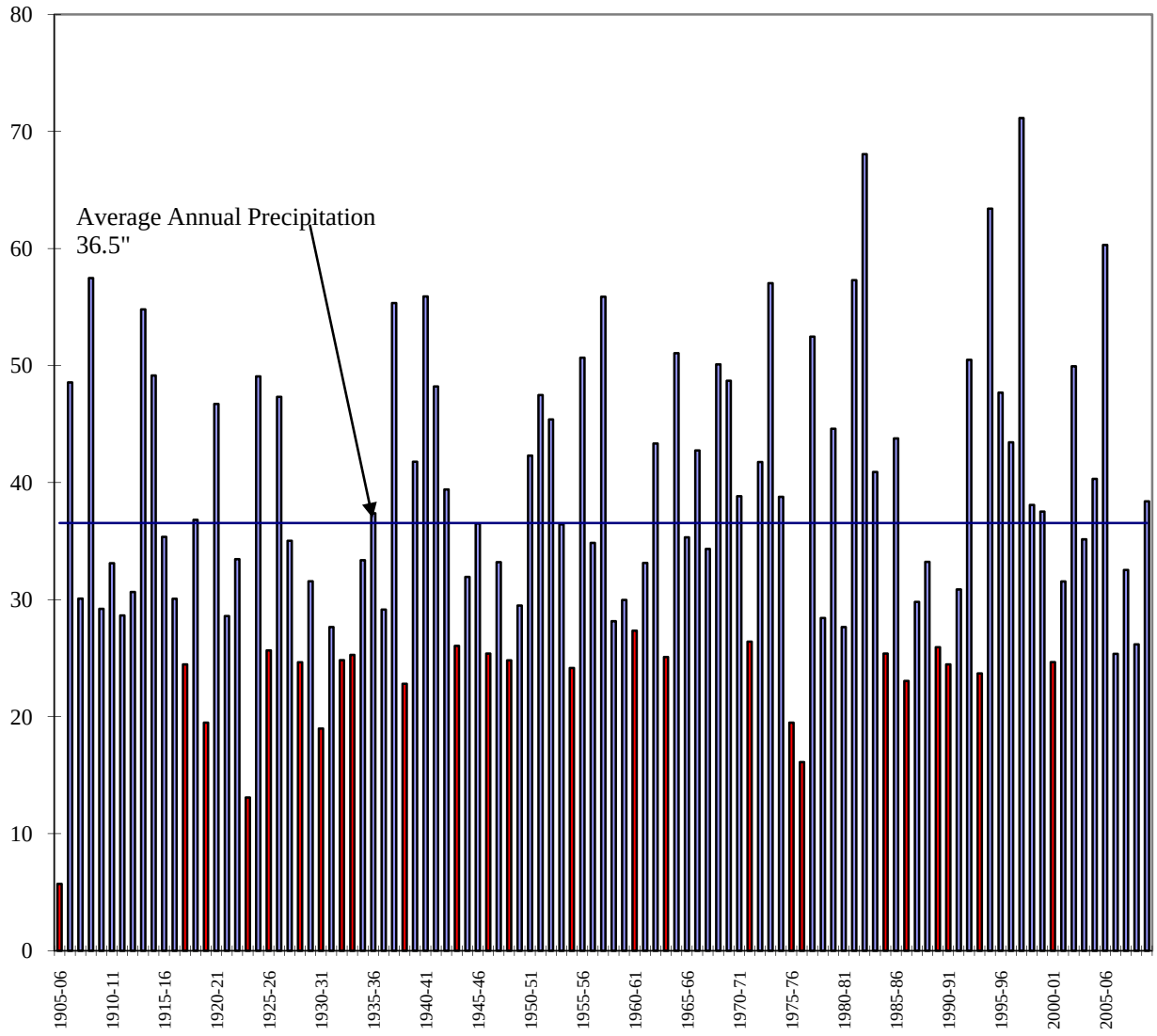
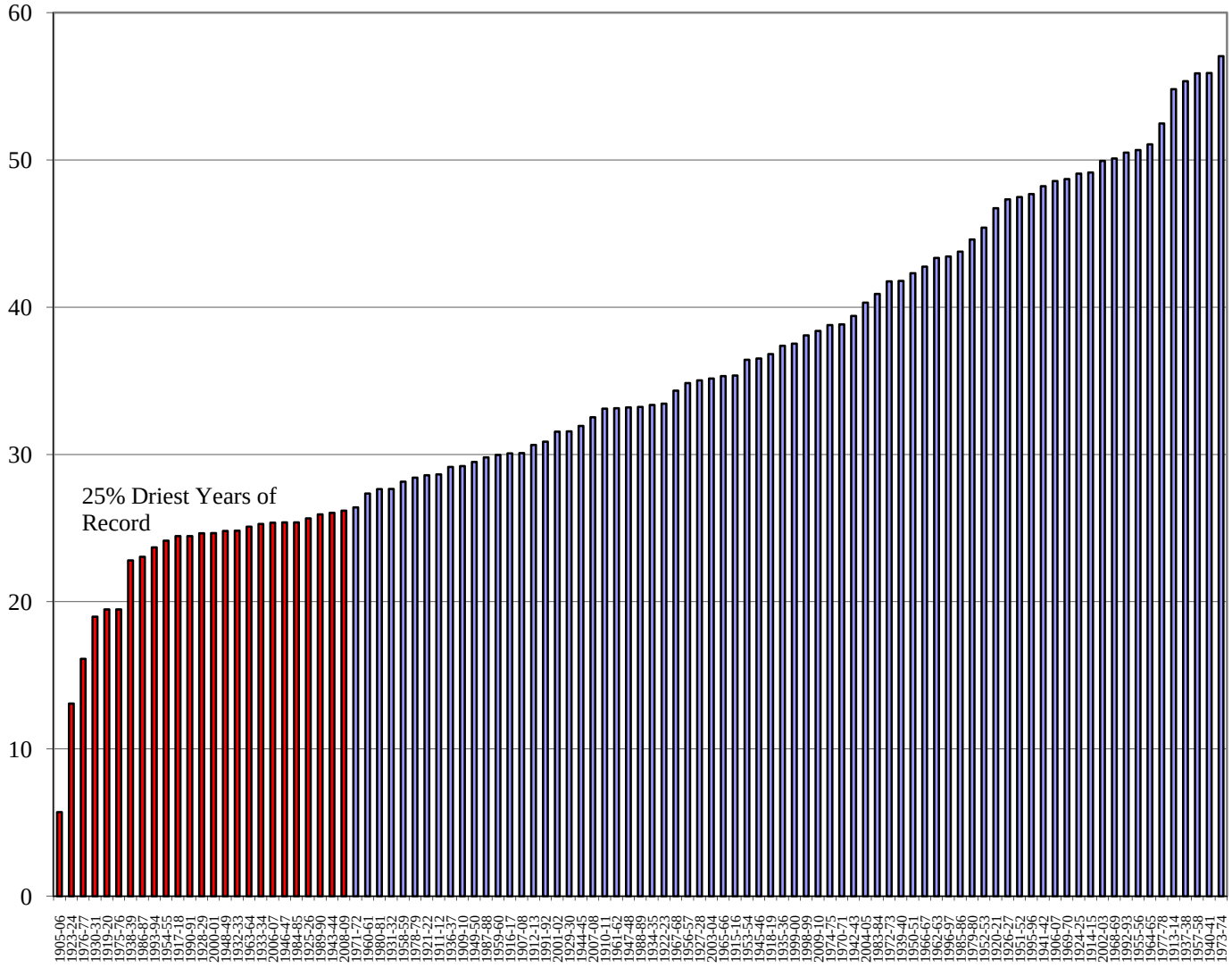


Chart 5.2
Driest 25% of Years of Record
Annual Precipitation Measured at Ukiah Precipitation Station near Ukiah, California

(Precipitation measured in inches)



The following table summarizes the factors affecting supply reliability for the various sources names in Table 4.2.

Table 5.1 Factors Resulting in Inconsistency of Supply (Guidebook Table 29)
2010 Urban Water Management Plan
City of Ukiah

Water supply sources[1]	Specific source name, if any	Limitation quantification	Legal	Environ - mental	Water quality	Climatic
Surface Water, Permit 12952 (Application 15704)[2]	Russian River Underflow	14,480 afa	Change to Permit	None	None	None
Surface Water, Pre-1914 rights	Russian River	2,027 afa	None	None	None	None
Groundwater	Ukiah Valley	None	None	None	None	None
Project Water	Russian River	800	Change to Contract	None	None	None
Recycled Water	--	unknown	None	None	None	None

Units: acre-feet per year

[1]From Table 4.2.

[2]Permit 12952 (A15704) is authorizes diversion of 20 cfs, with no annual limit. As a practical matter, if peak demand is 20 cfs, annual total diversion distributed according to current use patterns would result in a total diversion of approximately 8,700 acre-feet. However, the City's water right is valid for the 14,480 acre-feet as reported above.

5.2 WATER SHORTAGE CONTINGENCY PLANNING

Intentionally left blank.

5.3 WATER QUALITY

5.3.1 Improvement Projects

The Water Treatment Plant (WTP) commenced operation in April 1992 and treats water collected in the Ranney collector. The WTP is located about 300 feet from the Ranney Collector and uses the Microfloc contact clarification-filtration technology. Treatment processes include prechlorination, adsorption, clarification, mixed-media gravity filtration, and disinfection. Filter backwash water generated from the water treatment plant processes is discharged to two 216,000-gallon clarification reservoirs for recycling. Treated water is pumped to a 1.5 mg clearwell /reservoir for post chlorination. From the clearwell, the water is pumped into the distribution system by vertical turbine high service pumps. Operation of the treatment plant is controlled through the use of a pressure transducer in the City's new 1.5 mg reservoir. Surface water Wells 3 and 5, along with percolated groundwater Well 4, are equipped with gas chlorination facilities. In addition, Well 4 is equipped with a continuous reading turbidimeter. After chlorination, water from the surface water and percolated groundwater well is pumped directly into the distribution system.

Improvements to the WTP were completed in September 2006. The improvements include an additional Microfloc contact clarification-filtration unit for reliability and redundancy, new chlorine scrubber, new sodium hydroxide tank and dispensing system, new water distribution SCADA system, and high service pumps.

5.3.2 Water Quality Impacts Summary

The quality of the City's water system is regulated by DHS, which requires regular collection and testing of water samples to ensure that the water quality meets regulatory standards and does not exceed MCLs. The City performs water quality testing, which has consistently met or exceeded regulatory standards.

The quality of existing surface water and percolated groundwater supply sources over the next 25 years is expected to be adequate. Surface water will continue to be treated to drinking water standards, and no surface water or groundwater quality deficiencies are foreseen to occur in the next 25 years. This plan will be subject to five year updates that can include new information concerning surface or groundwater contamination, if it becomes available. If new information becomes available in less than five years, the plan can be updated at that time to include that information and any revised water plans to address that information.

Table 5.2 below summarizes the current and projected water supply changes due to water quality. The City has a Water Quality Emergency Notification Plan (Notification Plan) for use when it is determined that an imminent danger to the health of the water users exists. Within the Notification Plan, City staff is directed to contact local authorities, radio stations, television stations, and newspapers. If necessary, City personnel are available to make door-to-door notifications during the hours that other media sources are not available to broadcast a warning.

Table 5.2 Water Quality – Current and Project Water Supply Impacts (Guidebook Table 30)
2010 Urban Water Management Plan
City of Ukiah

Water source	Water Quality Condition	2010	2015	2020	2025	2030	2035 - opt
Russian River	None	0	0	0	0	0	0
Project Water	None	0	0	0	0	0	0
Groundwater	None	0	0	0	0	0	0
Recycled Water	None	0	0	0	0	0	0

Units: acre-feet per year

5.4 DROUGHT PLANNING

This section considers the City's water supply reliability during three climate-related water scenarios: normal water year, single dry water year, and multiple dry water years. These scenarios are defined in DWR's UWMP guidebook as follows:

Average Year — (Normal Year) a year or an averaged range of years in the historical sequence that most closely represents median runoff levels and patterns. It is defined as the median runoff over the previous 30 years or more. This median is recalculated every 10 years.

Single-dry year — generally considered to be the lowest annual runoff for a watershed since the water-year beginning in 1903. Suppliers should determine this for each watershed from which they receive supplies.

• *Multiple-dry year period* — generally considered to be the lowest average runoff for a consecutive multiple year period (three years or more) for a watershed since 1903. For example, 1928-1934 and 1987-1992 were the two multi-year periods of lowest average runoff during the 20th century in the Central Valley basin.

5.4.1 Basis of Water Year Data

Table 5.3 Basis of water year data (Guidebook Table 27)
2010 Urban Water Management Plan
City of Ukiah

Water Year Type	Base Year(s)
Average Water Year	1962
Single-Dry Water Year	1976-77
Multiple-Dry Water Years	1990-1992

Charts 5.1 and 5.2 provide annual precipitation and the 25% driest years of record for reference.

5.4.2 Supply Reliability - Historic and Current Conditions

The following analysis assumes a 50% reduction in supply as a conservative estimate, consistent with the supply reduction scenario provided in Section *10632* of the California Water Code. Note that during the dry water years described in Table 5.3 above, the City did not experience a reduction in supply availability.

Tables 5.4 and 5.5 below describe the scenario set forth in the code section, including multiple dry water years and resulting reduction in the City's water supply.

Table 5.4 Supply reliability historic conditions (Guidebook Table 28)

2010 Urban Water Management Plan

City of Ukiah

Average Water Year	Single Dry Water Year	Multiple Dry Water Years			
		Year 1	Year 2	Year 3	Year 4
21,0121	10,506	10,506	10,506	10,506	10,506
Percent of Average Year2:	50.0%	50.0%	50.0%	50.0%	50.0%

Units: Acre-feet per Year

Notes:

1 21,012 is based on water available in 2011, and does not include potential future supply from recycled water.2. A 50% reduction of water supply is based on the value California Water Code Section 10632. As described in Section 5.1 above, it is unlikely that the City will experience a reduction in groundwater or surface water supply due to legal, environmental, water quality or climatic changes. The City's appropriative rights and the extensive groundwater storage within the Ukiah Valley groundwater basin ensure water supply reliability for the City.

Table 5.5 Supply reliability — current water sources (Guidebook Table 31)

2010 Urban Water Management Plan

City of Ukiah

Water supply sources[1]	Average Year Supply[2]	Multiple Dry Water Year Supply[2]		
		Year 2011	Year 2012	Year 2013
Russian River	16,507	8,254	8,254	8,254
Project Water	800	400	400	400
Groundwater	3,705	1,853	1,853	1,853
Percent of normal year:	100.0%	50.0%	50.0%	50.0%

Units: acre-feet per year

[1]From Table 4.2, 2010 available water supply sources. Does not include future potential recycled water supply.

[2] The analysis above assumes a 50% reduction in supply, as specified in Code Section 10632. Section 5.1 above describes that, in the unlikely event that the City's surface water supply is interrupted, water is available for diversion from groundwater storage in the extensive Ukiah Valley Groundwater Basin. Accordingly, it is unlikely that the City will be faced with a 50% reduction in supply.

5.4.3 Projected Normal Year Supply/Demand

Table 5.6	**Projected Normal Year Supply/Demand (Guidebook Table 32)** **2010 Urban Water Management Plan** **City of Ukiah**				
	2015	**2020**	**2025**	**2030**	**2035 - opt**
Supply totals (from Table 4.2)	21,615	21,895	22,175	22,735	23,295
Demand totals (From Table 11)	3,848	3,595	3,778	3,971	4,173
Difference	17,767	18,300	18,397	18,764	19,122
Difference as % of Supply	82%	84%	83%	83%	82%
Difference as % of Demand	462%	509%	487%	473%	458%
Units are in acre-feet per year.					

5.4.4 Projected Single Dry Year Supply/Demand

Table 5.7	**Supply and demand comparison — single dry year (Guidebook Table 33)** **2010 Urban Water Management Plan** **City of Ukiah**				
	2015	**2020**	**2025**	**2030**	**2035 - opt**
Supply totals[1]	10,808	10,948	11,088	11,368	11,648
Demand totals[2]	3,848	3,595	3,778	3,971	4,173
Difference	6,960	7,353	7,310	7,397	7,475
Difference as % of Supply	64%	67%	66%	65%	64%
Difference as % of Demand	181%	205%	193%	186%	179%
Units are in acre-feet per year. [1]*Assumes 50% reduction in supply, as directed by California Water Code Section 10632.* [2]*Demand totals provided by Carollo Engineering.*					

5.4.5 Projected Multiple Dry Year Supply/Demand

Table 5.8	**Supply and demand comparison — multiple dry-year events (Guidebook Table 34)** **2010 Urban Water Management Plan** **City of Ukiah**					
		2015	**2020**	**2025**	**2030**	**2035 - opt**
Multiple-dry year first year supply	**Supply totals**[1]	10,808	10,948	11,088	11,368	11,648
	Demand totals[2]	3,848	3,595	3,778	3,971	4,173
	Difference	6,960	7,353	7,310	7,397	7,475
	Difference as % of Supply	64%	67%	66%	65%	64%
	Difference as % of Demand	181%	205%	193%	186%	179%
Multiple-dry year second year supply	**Supply totals**[1]	10,808	10,948	11,088	11,368	11,648
	Demand totals[2]	3,848	3,595	3,778	3,971	4,173
	Difference	6,960	7,353	7,310	7,397	7,475
	Difference as % of Supply	64%	67%	66%	65%	64%
	Difference as % of Demand	181%	205%	193%	186%	179%
Multiple-dry year third year supply	**Supply totals**[1]	10,808	10,948	11,088	11,368	11,648
	Demand totals[2]	3,848	3,595	3,778	3,971	4,173
	Difference	6,960	7,353	7,310	7,397	7,475
	Difference as % of Supply	64%	67%	66%	65%	64%
	Difference as % of Demand	181%	205%	193%	186%	179%
Units are in acre-feet per year. [1]*Assumes 50% reduction in supply, as directed in the DWR UWMP Guidelines and Code Section 10632.* [2]*Demand totals provided by Carollo Engineering.*						

EVALUATION OF WATER SUPPLY RELIABILITY

SUPPORTING CHAPTERS 4 AND 5 OF THE

2010 URBAN WATER MANAGEMENT PLAN

INTRODUCTION

The source of the City of Ukiah's (City) water right is Russian River Underflow which has several components including, Russian River (West Fork), ungaged tributary inflow, groundwater accretion, return flow, percolation of direct precipitation and natural flow from the East Fork Russian River and Eel River imports.

This analysis evaluates water supply reliability in the Russian River to meet the City's projected demand. The City's projected demand is met in part with water regulated in Lake Mendocino, the southernmost dam on the Russian River. Management of Lake Mendocino changes the volume of water in the Russian River at the City's points of diversion. Accordingly, outflow and water surface elevation of Lake Mendocino is used herein as a marker to evaluate both water supply reliability and the impact of the City's projected increased diversion.

The assumptions and supporting documentation used to evaluate water supply are provided below.

ASSUMPTIONS AND SUPPORTING DOCUMENTATION

SECTION 1: PROJECTED WATER USE

Projected Increased Diversions By The City Of Ukiah

City of Ukiah annual treated water production has increased from about 2,200 acre-feet in 1960 to about 4,000 acre-feet in recent years, as shown in the attached Figure 1. Peak water use in the City typically occurs in July, as demonstrated by Figure 2, which provides average monthly water use. The recent (2004 through 2010) monthly water use pattern by the City was used to project annual water use corresponding to 20 cfs in July. 20 cfs is the maximum diversion rate authorized by the City's permit pursuant to Application 15704 issued by the State Water Right's Board (predecessor to the State Water Board). Based on 20 cfs use in July and the average monthly water use pattern, the projected maximum annual use would be 8,700 acre-feet. Although the City has a pre-1914 water right for 2.8 cfs and also pumps percolating groundwater from at least one of its wells, the analysis assumes an ultimate demand of 20 cfs. The attached Table 1 provides a calculation of total annual diversion based on a peak July demand of 20 cfs.

To determine the effect the City's increased water use will have on water supply in the Russian River basin, return flow and depletion were estimated, as described below.

Estimated Depletion Resulting from City of Ukiah Water Use

Ukiah diverts using an infiltration gallery adjacent to the Russian River commonly referred to as the Ranney Collector, and using five wells situated through the City. Water diverted via the Ranney collector has an immediate impact on the Russian River flow. Water diverted via the

wells has an immediate effect on the aquifer, but not necessarily on the river. The following describes the relationship between the river and the Ukiah Valley aquifer during the dry and rainy seasons.

During the rainy season, a seasonal rise in the water table occurs as precipitation percolates and recharges the aquifer. Due to the increased water surface elevation in the aquifer, groundwater drains to the river, and the Russian River become an "influent stream." During the dry season, the water surface elevation of the aquifer declines, and water is lost from the river to the aquifer. This seasonal decline in the aquifer level is partly natural and partly accelerated by groundwater pumping. As the water table falls below the bottom of the river, the hydraulic connection is broken, and the river becomes an "effluent stream," losing water to the aquifer. As an effluent stream, the water loss rate from the river is independent of the depth to the aquifer. Rather, river loss is a function of phreatophyte use and the permeability of the clogging layer at the bottom of the streambed.

When the Russian River functions as an effluent stream, the lack of hydraulic continuity ensures that depletions to the aquifer do not affect river flows. The impact to the river occurs during the wet season, as the transition from an effluent stream to an influent stream is delayed until the aquifer is recharged. Accordingly, pumping from the groundwater basin does not impact Russian River flows during the dry season.

Balance Hydrologics conducted a study for the City of Ukiah that evaluated groundwater flow conditions near the wastewater percolation ponds. Based on observations made near the percolation ponds, the river was an effluent stream during the months of June through October and an influent stream in the other months, however, conditions will differ elsewhere. For example, at the south (downstream) end of Ukiah valley, the bedrock rises to the bottom of the river forcing water from the aquifer to the river, and it may be possible that at that location, the river is an influent stream throughout the year. However, that is several miles from Ukiah's wells.

To demonstrate connection between Ukiah's wells and river flow at the south end of the valley, a history of well-positioned monitoring wells and development of a basin-wide groundwater model would be required. For the investigation described herein, it was assumed that the Ukiah valley aquifer was disconnected from the river during the months of May through October and that depletions accumulated in the aquifer during those months would result in an equal volume of depletion to the river during the months of November, December and January.

Table 2 illustrates the method and assumptions utilized to estimate Ukiah's impact on Russian river flows, and ultimate depletion. All the units are in terms of percent of annual use. As an example, assume the disposition of 100 acre-feet of annual use. In April, 6.3 acre-feet is pumped from the aquifer (row a). Because the aquifer is flowing to the river, it is assumed to result in an equal amount of reduced river flow (row b). Of the 6.3 acre-feet, 4.9 acre-feet was assumed to be used indoors (row c), corresponding to the observed wintertime usage. The indoor use is treated and (generally) returned directly to the river in the wet season (row d). Outdoor use is determined by subtraction (row e) and it is assumed that 15 percent of that returns to the aquifer by deep percolation (row f). A study of irrigated area in the Ukiah water service area may show a greater rate of municipal irrigation return flow. The depletion to the river (row g) is then

calculated as the sum of effects on the river due to pumpage minus return flow from wastewater treatment and irrigation.

In the months of June through October, the water removed and returned to the aquifer (pumping, percolation ponds, irrigation percolation) does not affect the river. Those depletions are summed and added to the later depletions felt by the river in November, December and January. Figure 3 illustrates the monthly pattern of water use by Ukiah and resulting depletion to the Russian River. On an annual basis, the depletion is about 37 percent of the amount diverted.

The depletion calculated as described above will have effects on water supply in the Russian River basin. The depletion calculation was used in the model in addition to projections of Russian River hydrology to determine the impact of the City of Ukiah's pumping.

SECTION 2: PROJECTED FUTURE RUSSIAN RIVER HYDROLOGY

The historical hydrology of the Russian River, including Eel River imports from the Potter Valley Project, Lake Mendocino operations and minimum required instream Russian River flows were used to establish a baseline condition. However, historical events will not be repeated because of two significant regulatory changes, which have resulted in changes to management of the Russian River system and Lake Mendocino.

In 1986, State Water Resources Control Board Decision 1610 (D-1610) was issued setting forth minimum required streamflows on the Russian River below Lake Mendocino. Operations prior to that time did not need to meet D-1610 requirements. Subsequently, the Federal Energy Regulatory Commission (FERC) amended the hydroelectric license for the Potter Valley Project and in so doing, changed the volume of water imported from the Eel River to the Russian River. Both D-1610 and the FERC relicensing have had a significant impact on management of Lake Mendocino, specifically with respect to releases.

Accordingly, the analysis herein incorporates historic data, and applies anticipated management decisions with respect to minimum instream flow in the Russian River and exports from the Eel River.

The following describes the assumptions and supporting information used to project Russian River hydrology.

Evaluation of Future Eel River Imports

The East Fork of the Russian River receives imports from the Eel River via the Potter Valley Project, a tunnel operated by PG&E which joins the Eel River downstream of Lake Pillsbury to the Russian River at Potter Valley, upstream of Lake Mendocino. The Potter Valley Project imports are shown in Table 3, excluding the portion delivered to the East and West canals of the Potter Valley Irrigation District on the Russian River. Historically, about 138,000 acre-feet per year is delivered to the Russian River and detained in regulatory storage in Lake Mendocino. Total Lake Mendocino monthly inflow as reported by the US Army Corps of Engineers

(USACE) averaged about 250,100 acre-feet per year, as shown on Table 4. Accordingly, imports from the Eel River have historically comprised just over half the inflow to Lake Mendocino. However, future imports from the Eel River are not likely to follow historical patterns due to conditions included in the FERC license issued for the Potter Valley Project.

In 2004, FERC amended the hydropower license for the Potter Valley Project, specifying new operating criteria for minimum streamflows on the Eel River and allowable exports through the Potter Valley Project tunnel. Minimum allowable exports range from 5 cfs to 75 cfs, depending on the season and water year type. Although the license appears to allow discretionary exports through the tunnel, Condition E5 directs that exports in excess of the minimum flow specified can only be made when the water surface elevation in Lake Pillsbury (at the headwaters of the Eel River) is above target storage curves specified in the FERC license. However, the target water levels in the license exceed the maximum storage allowed by the State Division of Safety of Dams during early March through mid-July. Accordingly, FERC license Condition E5 effectively eliminates the possibility of exporting discretionary flows through the tunnel from March 7 through July 16, and perhaps during the remainder of the year, since it requires that Pillsbury contents be above the FERC target. Figure 4 illustrates the Lake Pillsbury maximum allowable storage and FERC storage targets.

For purposes of estimating exports from the Eel River, we have assumed that Potter Valley Project exports will be replicated in the future as they were historically, except for the period of March 7 through July 16, when only the required minimum flow will be exported. This projection shows an average annual Potter Valley Project import to East Fork of the Russian River of about 102,300 acre-feet, or 26 percent less than historical.

Accordingly, supply reliability for the City of Ukiah was evaluated assuming average Eel River exports of 102,300 acre-feet per year. Figure 5 shows how the projected Potter Valley Project imports to the East Fork of the Russian River compare to the historical import on an annual basis.

Once exported, the water enters Lake Mendocino, and is subject to regulatory and operational constraints as described in the following section.

Lake Mendocino Operational Analysis

The Lake Mendocino operational analysis incorporates the existing regulations governing minimum instream flow requirements in the Russian River downstream of Lake Mendocino. As instream flow requirements below the confluence with Dry Creek (near Healdsburg), are met using water stored in Lake Sonoma, requirements below Healdsburg do not affect operation of Lake Mendocino. Accordingly, the Lake Mendocino operations model does not incorporate Lake Sonoma and the lower river reaches or the Russian River. Rather, the model evaluates the Lake Mendocino water surface elevation as impacted by minimum instream flow requirements in the Russian River above the confluence with Dry Creek.

Minimum Streamflow Requirements on the Russian River

State Water Resources Control Board Decision 1610 (D-1610) specifies minimum instream flows on the Russian River conditioned on inflow to and storage in Lake Pillsbury and on storage

in Lake Mendocino. Flow rates in D-1610 range from as low as 25 cfs in a critically dry month to as high as 185 cfs in the spring with high reservoir levels. D-1610 was issued pursuant to permits for diversion held by the Sonoma County Water Agency (SCWA), and has been in effect since 1986. However, SCWA was directed by the September 24, 2008 Biological Opinion (BO) issued pursuant to the Endangered Species Act for anadromous salmonids in the Russian River to file a petition with the State Water Board to amend D-1610.

As a directed in the BO, SCWA has filed a Petition and an Urgency Petition with the State Water Board for the purpose of reducing minimum flows for the Russian River above Dry Creek. The Petition requests that minimum instream flows during the months of June through October of an average water year be reduced from 150 or 185 cfs (depending on hydrological conditions) to 125 cfs. The State Water Board has not yet acted on this Petition, however, with respect to operation of Lake Mendocino and minimum instream flows, SCWA has been directed to operate under the terms of the BO.

This analysis uses historical inflow to Lake Pillsbury and historical contents in Lake Pillsbury and Lake Mendocino to calculate required minimum streamflows in the Russian River upstream of Dry Creek under both D-1610 and as requested in the BO. This calculation was applied to the full study period of 1961 through 2009, as if D-1610, signed April, 1986, was in effect for the entire period.

Lake Mendocino Flood Control Operations

USACE operates Lake Mendocino to reduce flood damages downstream by minimizing the amount and duration of water stored in the reservoir above the top of conservation pool. The top of conservation pool has been defined since 2002 as follows:

- 68,400 acre-feet from the first of November through the end of February and
- 86,400 acre-feet from the first of April through the middle of October.

Figure 6 illustrates the historical content and top of conservation pool in Lake Mendocino since January 2000. Note that occasional encroachment of storage above the top of conservation pool is allowed to ameliorate flooding downstream of the reservoir. Note also the greater conservation storage allowed prior to 2002. For many years prior to 2002, the top of conservation pool was 72,300 acre-feet during the flood season and 91,000 acre-feet outside of the flood season. Finally, note that since the beginning of April 2010, the reservoir content has been far above the 86,400 acre-feet top of conservation pool. This higher summertime storage volume is in response to a request from SCWA, as indicated in Water Control Diagram found in the 2004 USACE Water Control Manual for Coyote Valley Dam. Insufficient information exists to determine whether this deviation from prior operations is a permanent change.

In the modeling, the 2002 – 2009 evaluation implements the top of conservation storage rule. Because encroachment of storage into the flood control space is a discretionary action, it was not modeled. This approach does not affect the objectives of this evaluation, since the flood flows cannot be held to bolster supplies in the dry season, but will be passed downstream within days.

Dry Season Release from Lake Mendocino

Water is released from Lake Mendocino to satisfy the following:

- senior water right holders,
- D-1610 minimum streamflow requirements,
- SCWA water intake below Dry Creek,
- river losses in meeting the above described objectives.

An evaluation of historical releases from Lake Mendocino to cover Russian River losses and required minimum river flow is included below to properly model future dry season releases from Lake Mendocino.

Historical River Loss

The Russian River flows through the Ukiah Valley, Sanel Valley, and Alexander Valley on its way from the Forks to the confluence with Dry Creek. During the dry season, the water surface elevation of the aquifers beneath the valleys declines, and water is lost from the river to the aquifer. To replace the river water lost to the aquifer and maintain the required minimum instream flow from the Fork to Dry Creek, SCWA releases water from Lake Mendocino.

River losses are approximated by comparing USGS gage records at the Fork (the sum of two gages), Hopland, Cloverdale and Healdsburg, and calculating loss between the gages. Figure 7 shows the average daily river loss from the Forks to Healdsburg over the last two decades (since D-1610 was signed). The total average loss (i.e., the summation of the area under the curve) is about 16,000 acre-feet. The analysis uses daily historical river loss to project future river losses.

In addition to releases necessary to replace river losses, excess dry season releases are required to meet minimum instream flow requirements as described below.

Excess Dry Season Release from Lake Mendocino

Excess dry season releases from Lake Mendocino are required because the D-1610 minimum instream flow rate is considered an instantaneous rather than running mean requirement. Accordingly, additional water is released to ensure that the instantaneous instream flow meets the D-1610 minimum requirement.

The historical excess flow satisfied through Lake Mendocino was evaluated by examining the historical record of gaged river flow and comparing that against the concurrent D-1610 flow requirement. As previously described, SCWA diversions downstream of Dry Creek are met principally from Lake Sonoma releases, and accordingly, this analysis does not consider dry season releases from Lake Mendocino greater than the minimum streamflow requirement above the confluence with Dry Creek plus the river loss. The following describes the results of the evaluation of river flow data.

Figure 8 provides exceedence curves for each month, May through November, showing the flow in the Russian River in excess of the D-1610 requirement attributable to Lake Mendocino

releases. The highest flow rates corresponded to wet conditions when water needed to be evacuated from the reservoir. The times of zero excess actually represent deficit, i.e., the minimum flow requirement was not met. It can be seen that there are many days of excess release in the 10 to 40 cfs range. Because the D-1610 flow rate requirement is considered an instantaneous requirement rather than a running mean requirement, there is a need to release more than exact requirement.

Figure 9 demonstrates the historical consecutive day change in river loss between the Forks and Healdsburg. This is an indication of the rate of change that needs to be anticipated. The higher values correspond to the falling limb of storm hydrographs. The rate of river loss through the bed of the river channel will not change dramatically from day to day. Thus, the dry month curves (August, September) show the least change in net loss from one day to the next. Based on this figure, it was decided that 30 cfs was ample allowance for excess release from Lake Mendocino.

Summary of Downstream Demand Used in the Lake Mendocino Operational Analysis

The Lake Mendocino operational analysis incorporates the following components into the estimate of downstream demand for the dry season of May through November:

1. The required minimum streamflow,
2. The historical river loss experienced on that day,
3. The historical excess release on that day capped at no more than 30 cfs.

A portion of the downstream demand is met by West Fork flows; the balance is met by modeled release from Lake Mendocino. Figures 10 and 11 summarize the modeled average monthly downstream demand.

EVALUATION OF WATER SUPPLY RELIABILITY

The evaluation of water supply reliability incorporates the following assumptions, summarized below:

1. Potter Valley Project imports to the East Fork of the Russian River were incorporated as follows:
    a. The July 17 through March 6 imports are based on historical import values, as provided in Table 2
    b. The March 7 through July 16 imports are based on the minimum rate required by the FERC license during the period
2. The model applied the top of conservation storage from the period 2002 through 2009 at Lake Mendocino.
3. The model applied a downstream demand during the dry season that included the following:
    a. Minimum required streamflow,
    b. The historical river loss, and

c. The historical excess release from Lake Mendocino (up to 30 cfs).

Available Water: Lake Mendocino Projected Outflow

Lake Mendocino projected outflow was estimated based on the components described in Section 2. For the purpose of determining whether sufficient water is available in Lake Mendocino to meet the City's projected increase in demand, the existing demand and the projected demand are compared using anticipated future operations of Lake Mendocino.

Scenarios modeled are described below:

Scenario	Streamflow Requirements	Ukiah Water Use
A	D-1610	Existing Max (4,200 af/yr)
B	D-1610	Projected (8,700 af/yr)
C	Biological Opinion	Existing Max (4,200 af/yr)
D	Biological Opinion	Projected (8,700 af/yr)

The Scenarios are shown on the Figure 12, and indicate that sufficient water is available to the City to meet projected increases in demand regardless of the streamflow requirements.

The determine the impact of the increased demand on the Russian River system, as demonstrated by reduction in water surface elevation in Lake Mendocino, as more water is released to satisfy the City, and additional evaluation was conducted, as described below.

Impact of Increased City Diversion on the Russian River System

As flows in the Russian River system are controlled to some degree by releases from Lake Mendocino, a significant reduction in water surface elevation and storage in Lake Mendocino could result in reduced flows in the Russian River. Accordingly, existing water use and projected water use were evaluated with respect to the Russian River hydrology to determine whether a change in water surface elevation would result from the City's increased diversion.

The four Scenarios evaluated are described below:

Scenario	Streamflow Requirements	Ukiah Water Use
A	D-1610	Existing Max (4,200 af/yr)
B	D-1610	Projected (8,700 af/yr)
C	Biological Opinion	Existing Max (4,200 af/yr)
D	Biological Opinion	Projected (8,700 af/yr)

The results of the evaluation are provided on Figure 13, and indicate no change in water surface elevation, except during the month of November. When comparing Scenarios C and D, a difference of two-tenths of a foot (0.2 ft) occurs in November, as a result of the City's increased water diversion. At the projected Lake elevation, 0.2 ft represents about 0.6 percent of the reservoir volume.

Accordingly, the model demonstrates that the impact on lake storage attributable to Ukiah's increased water use is negligible.

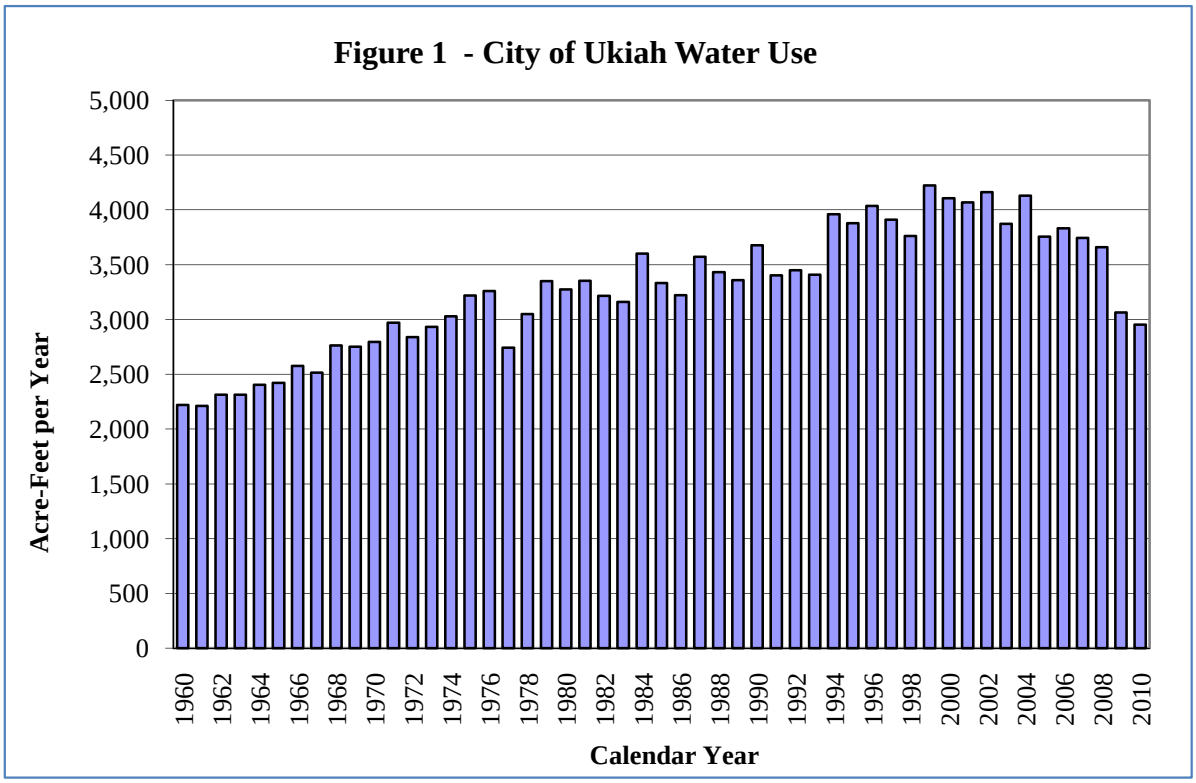


Figure 1 - City of Ukiah Water Use
Acre-Feet per Year
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1960
1962
1964
1966
1968
1970
1972
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
Calendar Year

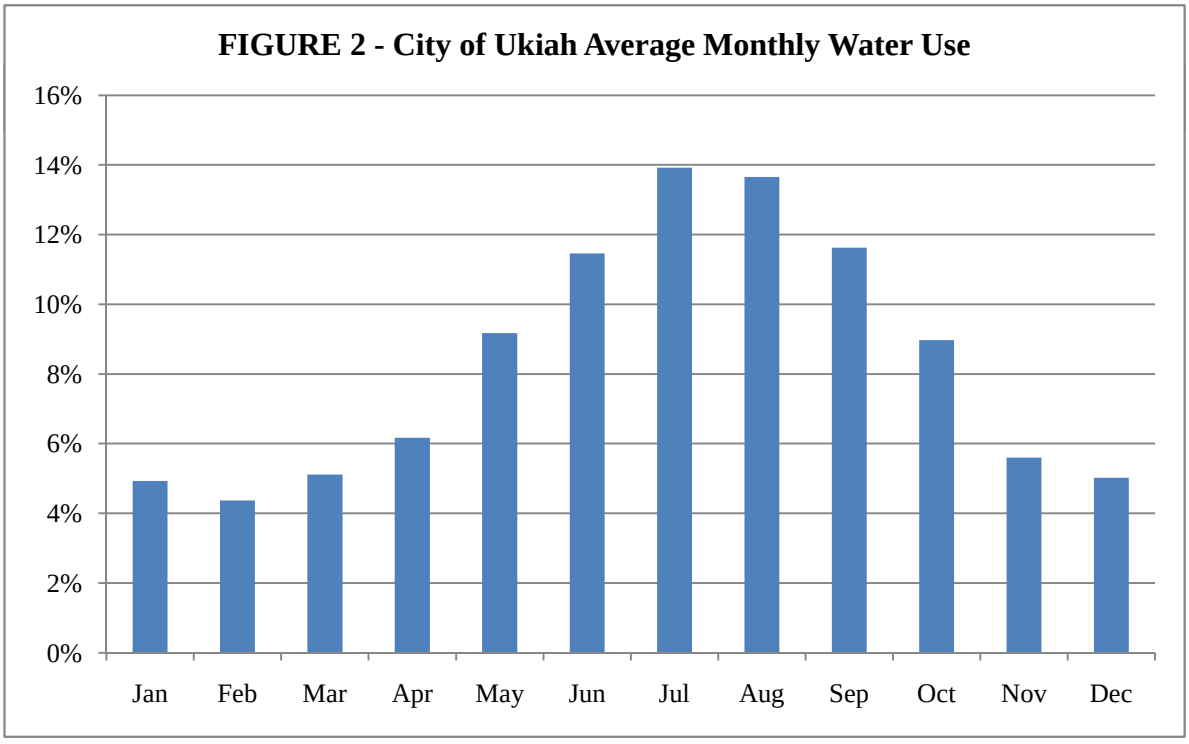


FIGURE 2 - City of Ukiah Average Monthly Water Use
16%
14%
12%
10%
8%
6%
4%
2%
0%
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

Figure 3 - City of Ukiah Monthly Pattern of Pumping and Resulting Depletion to Russian River

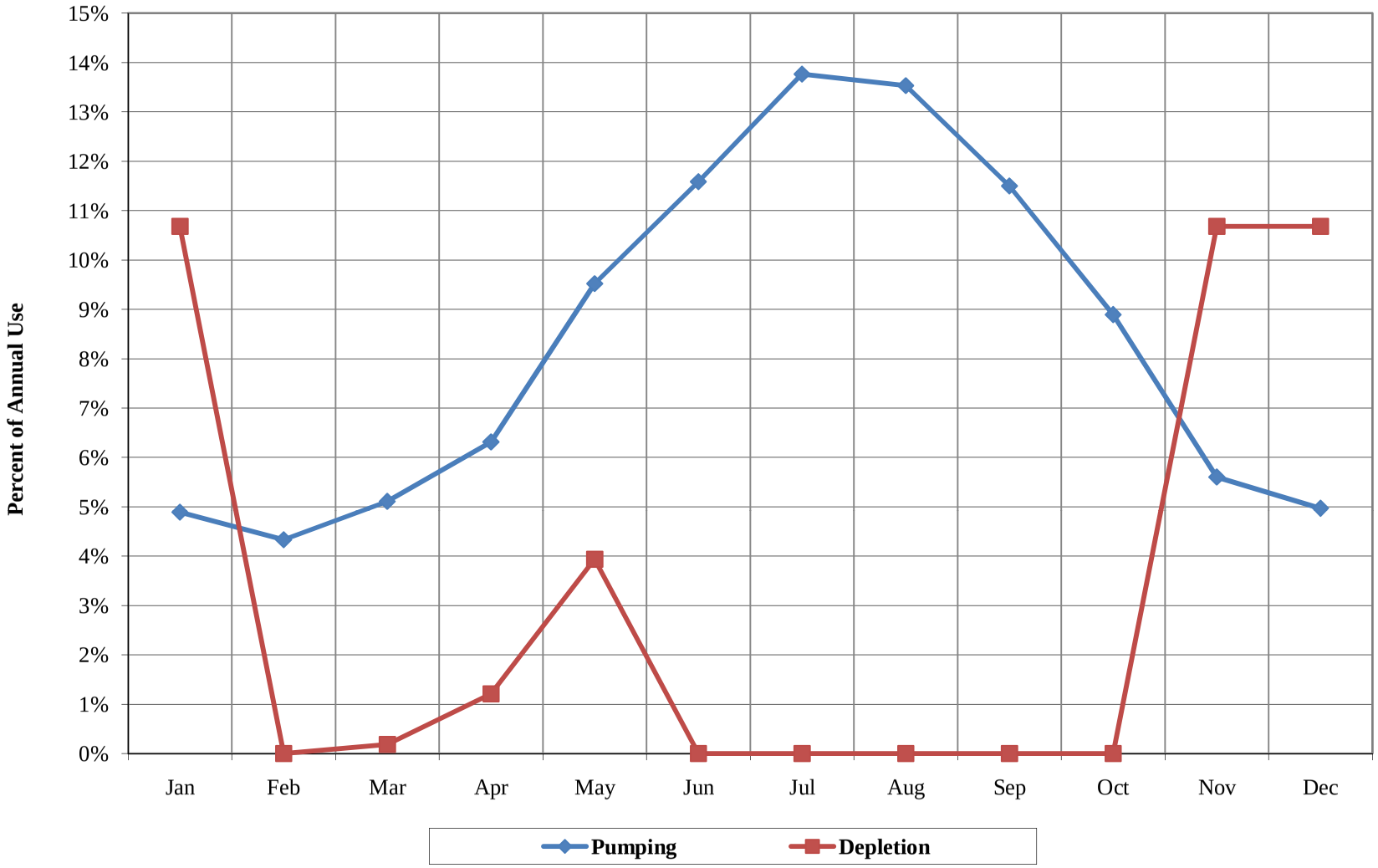


Figure 4 - Lake Pillsbury Target and Maximum Storage

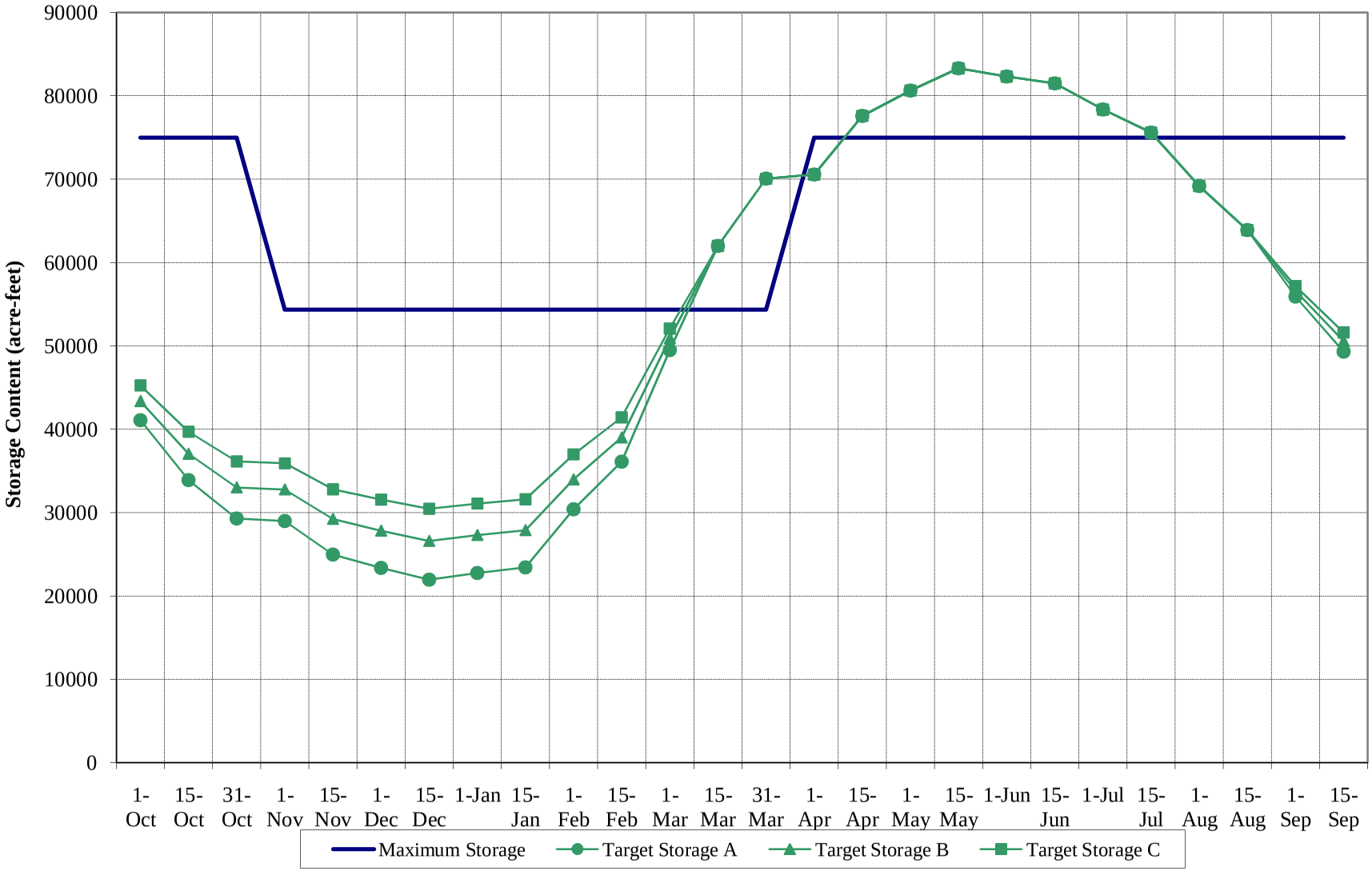


FIGURE 5 - Potter Valley Project Imports to East Fork Russian River

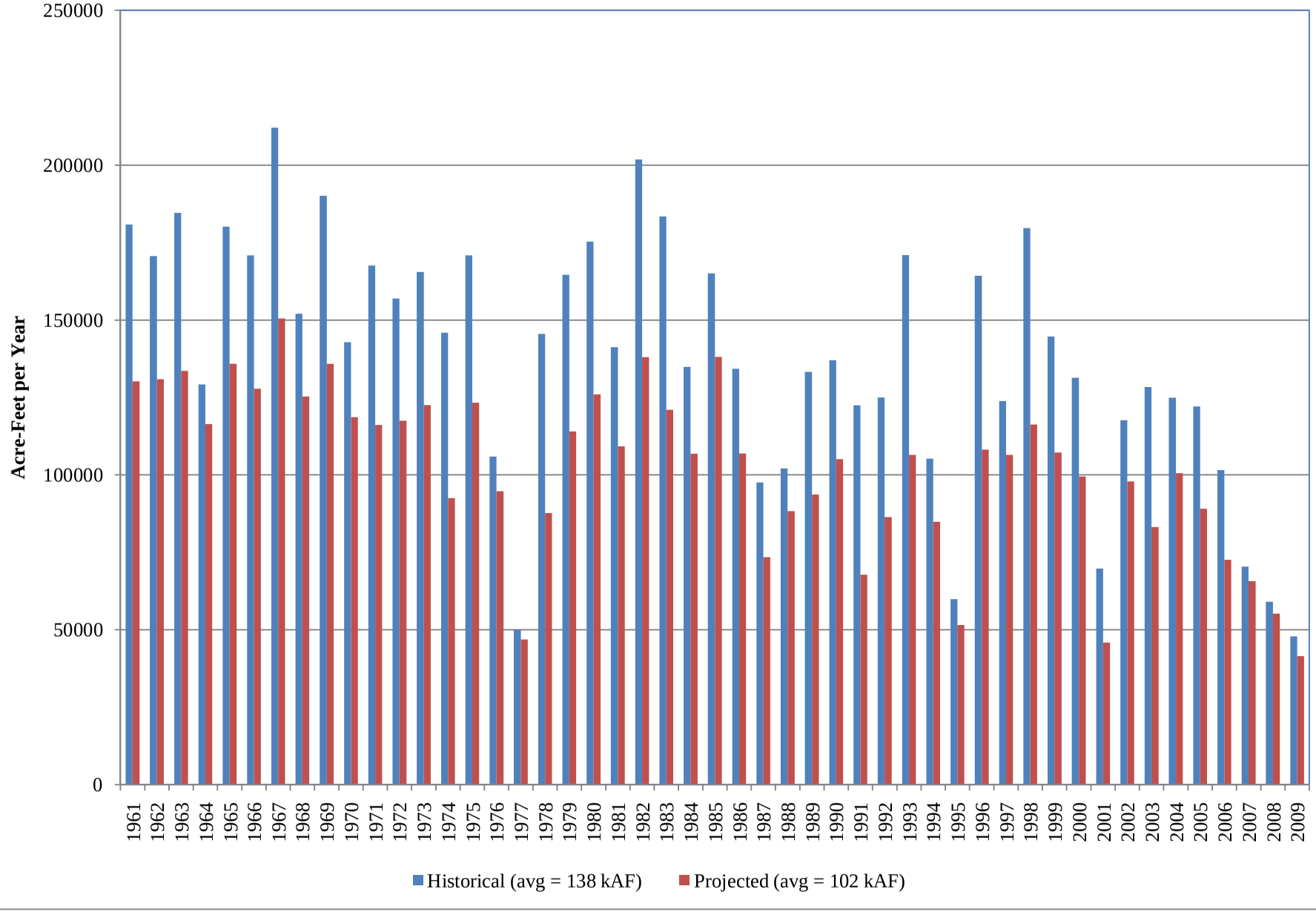


FIGURE 6 - Historical Lake Mendocino Content

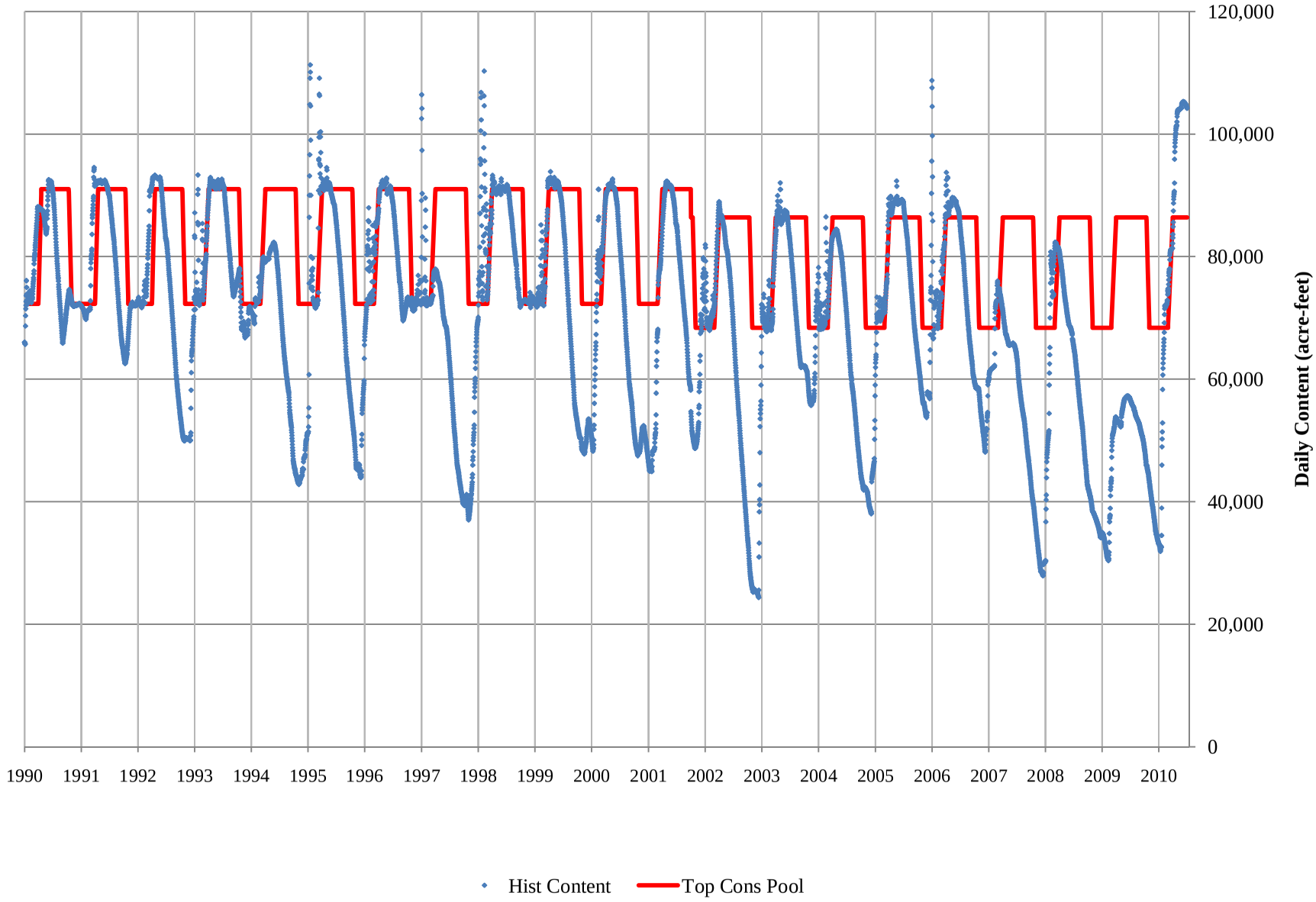


FIGURE 7 - Russian River Average Net Loss, Forks to Healdsburg, 1987-2009

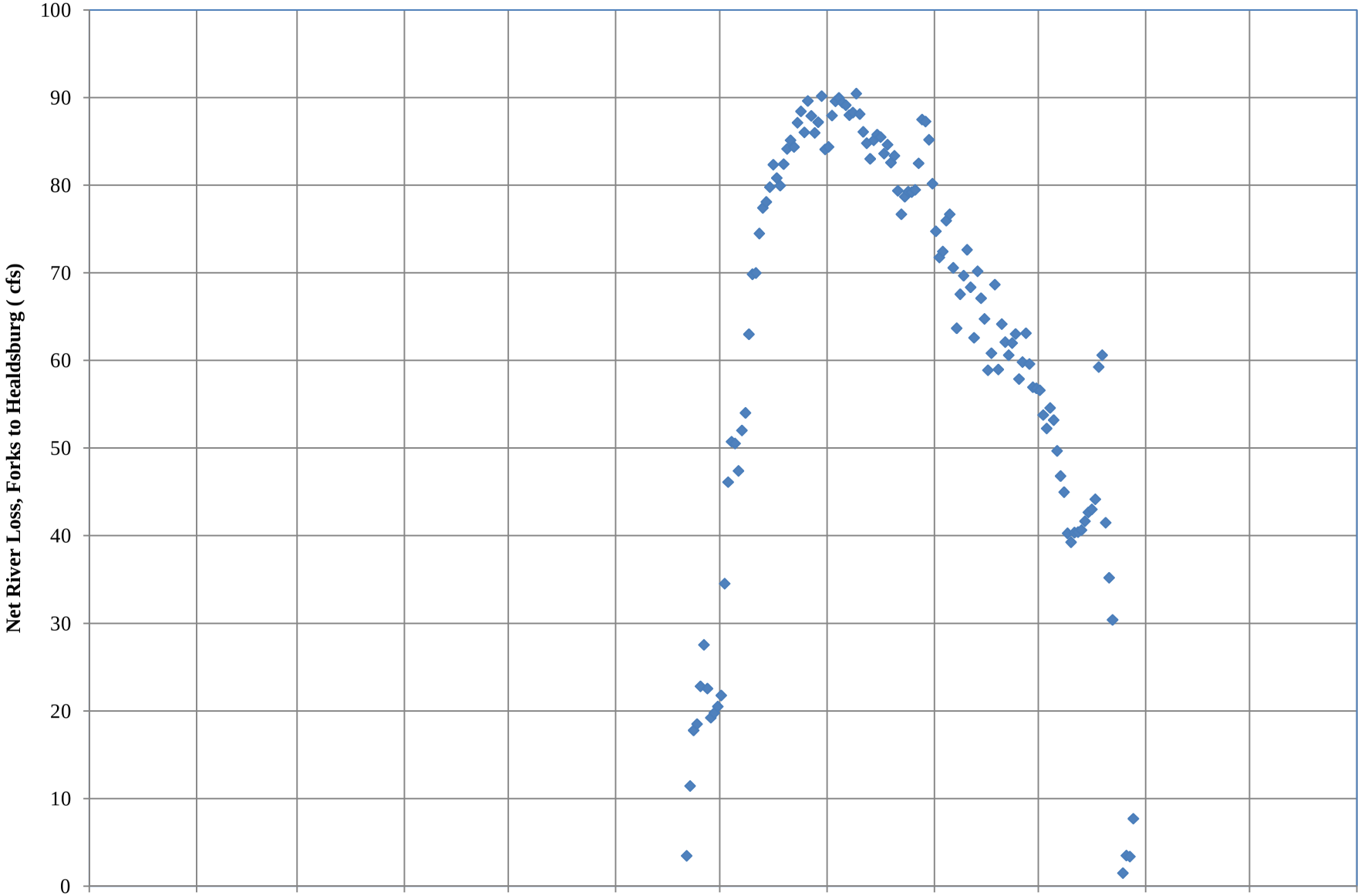


FIGURE 8 - Historical Russian Minimum River Flow in Excess of D-1610 Requirement Attributable to Release from Lake Mendocino, 1988-2006

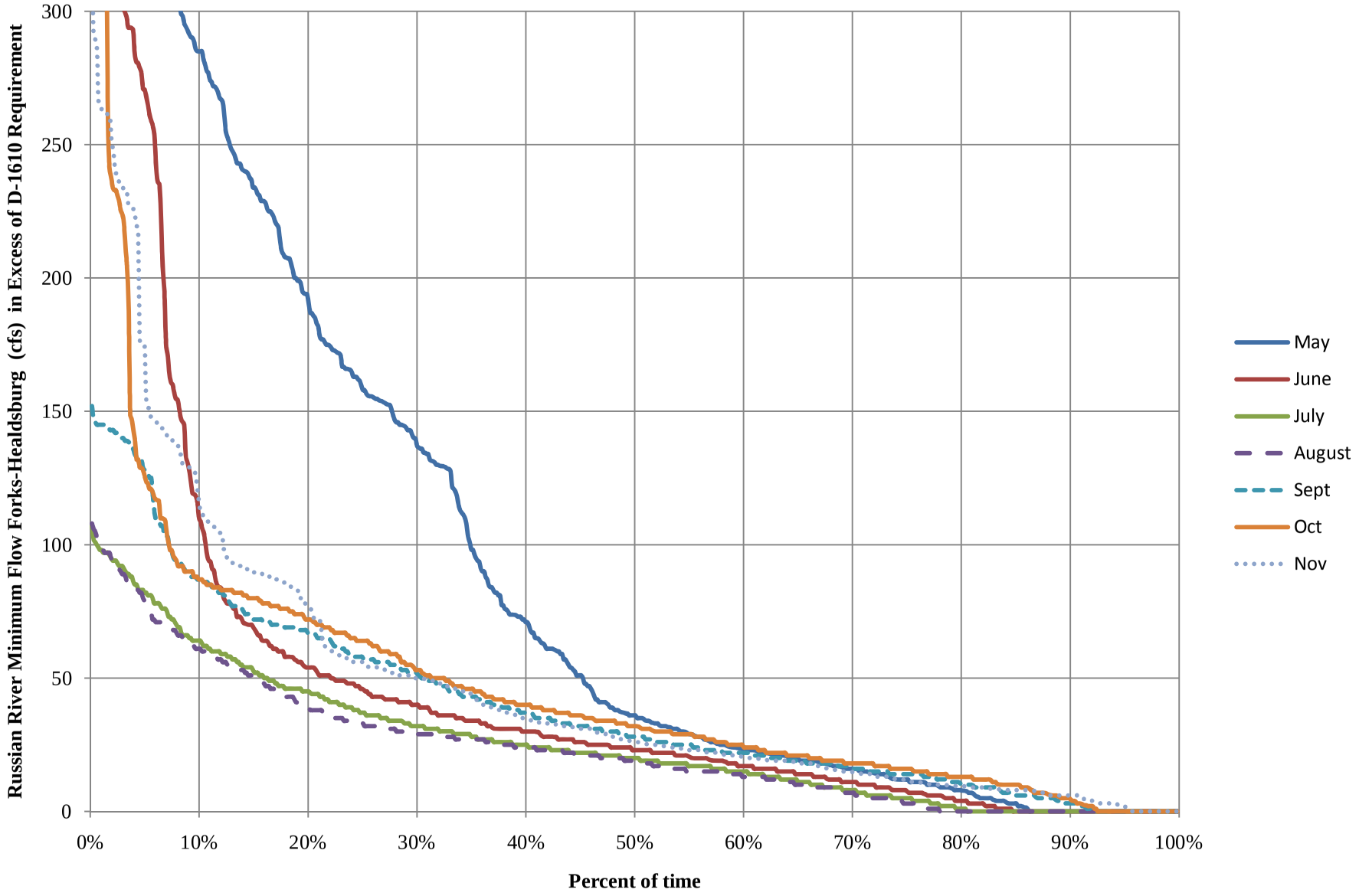
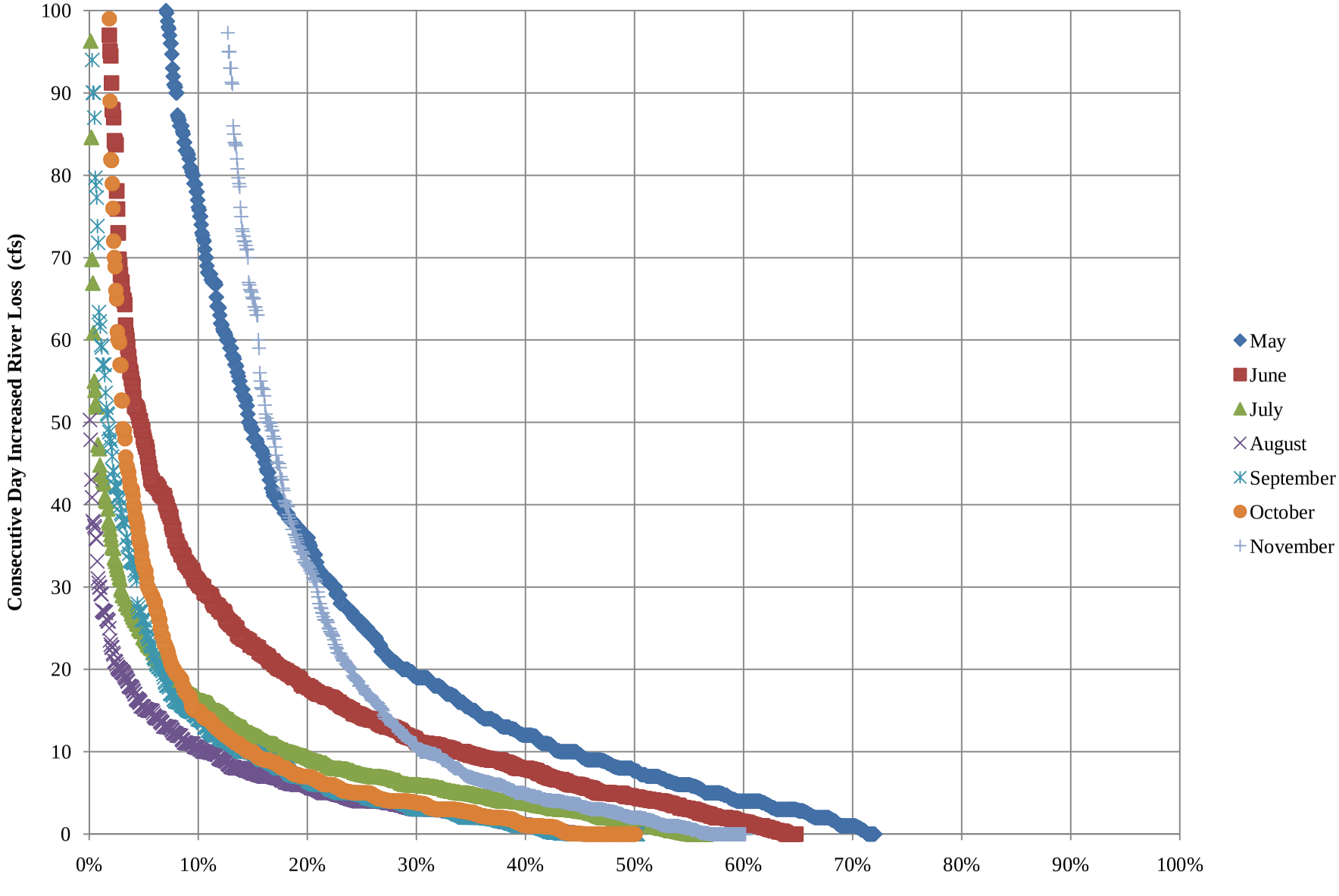


FIGURE 9 - Historical Change in Russian River Net Loss, Forks to Healdsburg



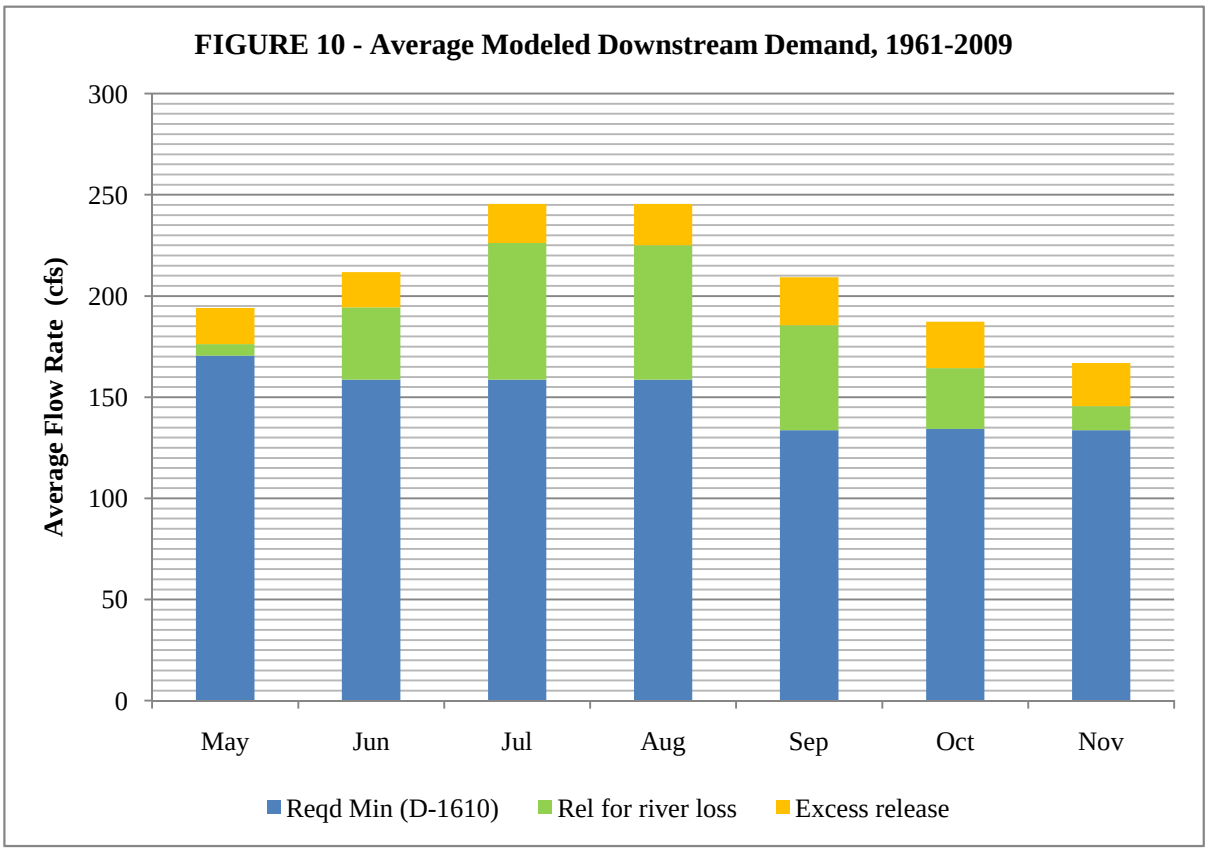


FIGURE 10 - Average Modeled Downstream Demand, 1961-2009
Average Flow Rate (cfs)
300
250
200
150
100
50
0
May
Jun
Jul
Aug
Sep
Oct
Nov
Reqd Min (D-1610)
Rel for river loss
Excess release

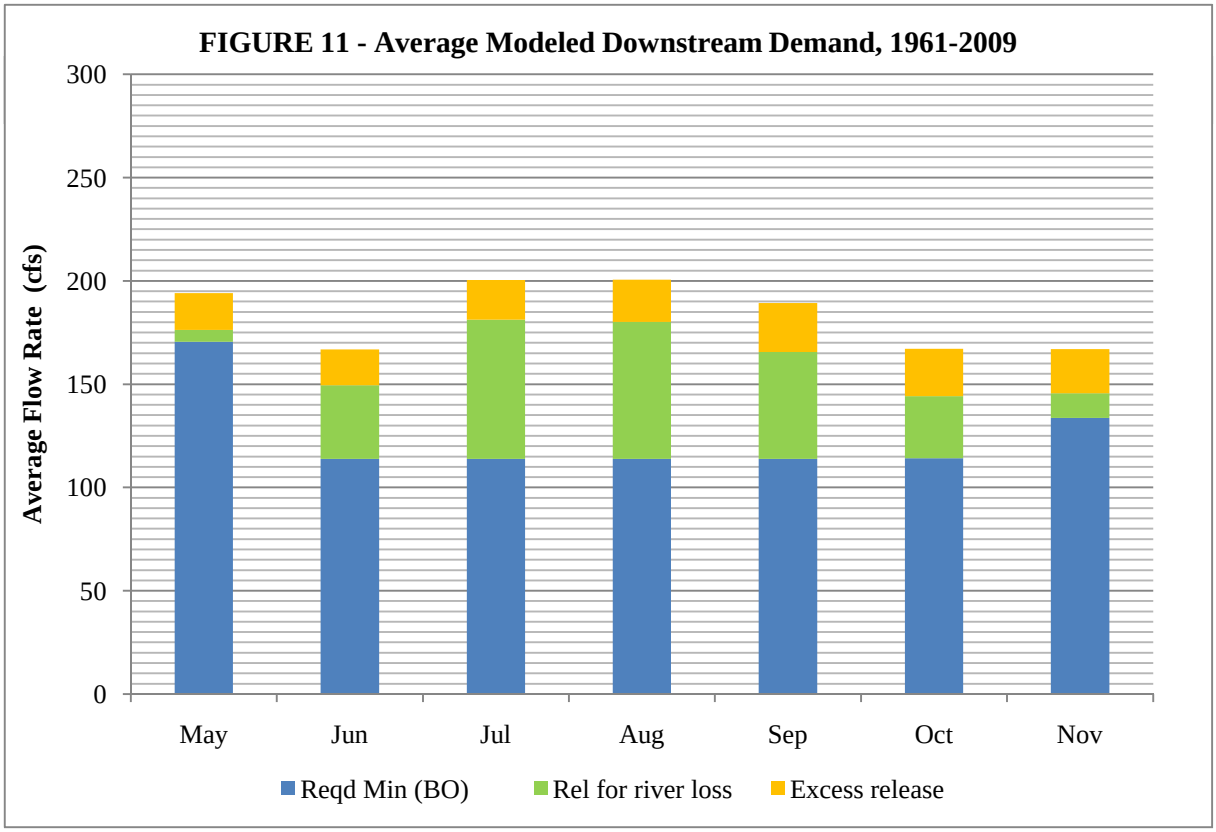


FIGURE 11 - Average Modeled Downstream Demand, 1961-2009
Average Flow Rate (cfs)
300
250
200
150
100
50
0
May
Jun
Jul
Aug
Sep
Oct
Nov
Reqd Min (BO)
Rel for river loss
Excess release

FIGURE 12 - Lake Mendocino Modeled Outflow

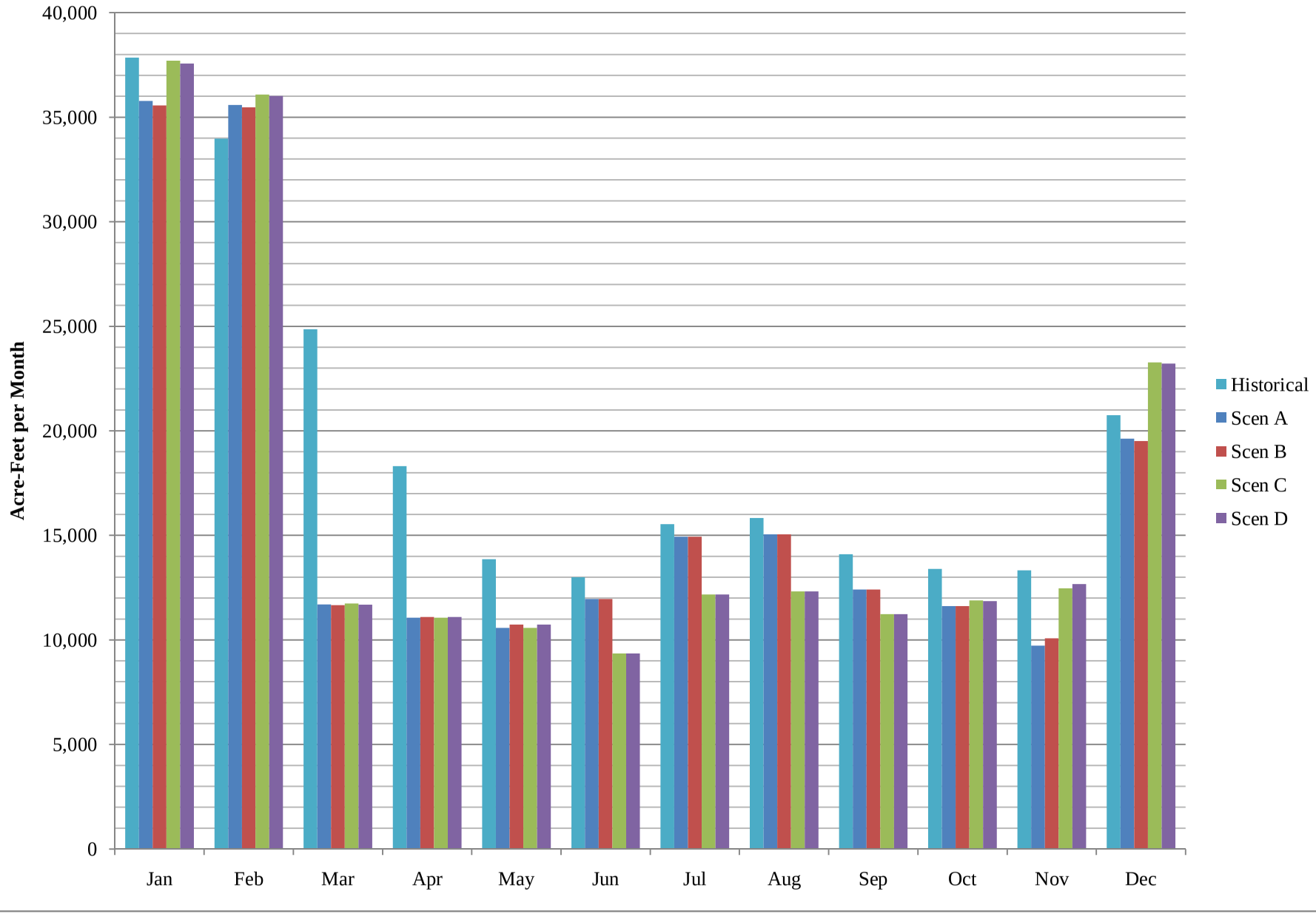


FIGURE 13 - Lake Mendocino Modeled Elevation

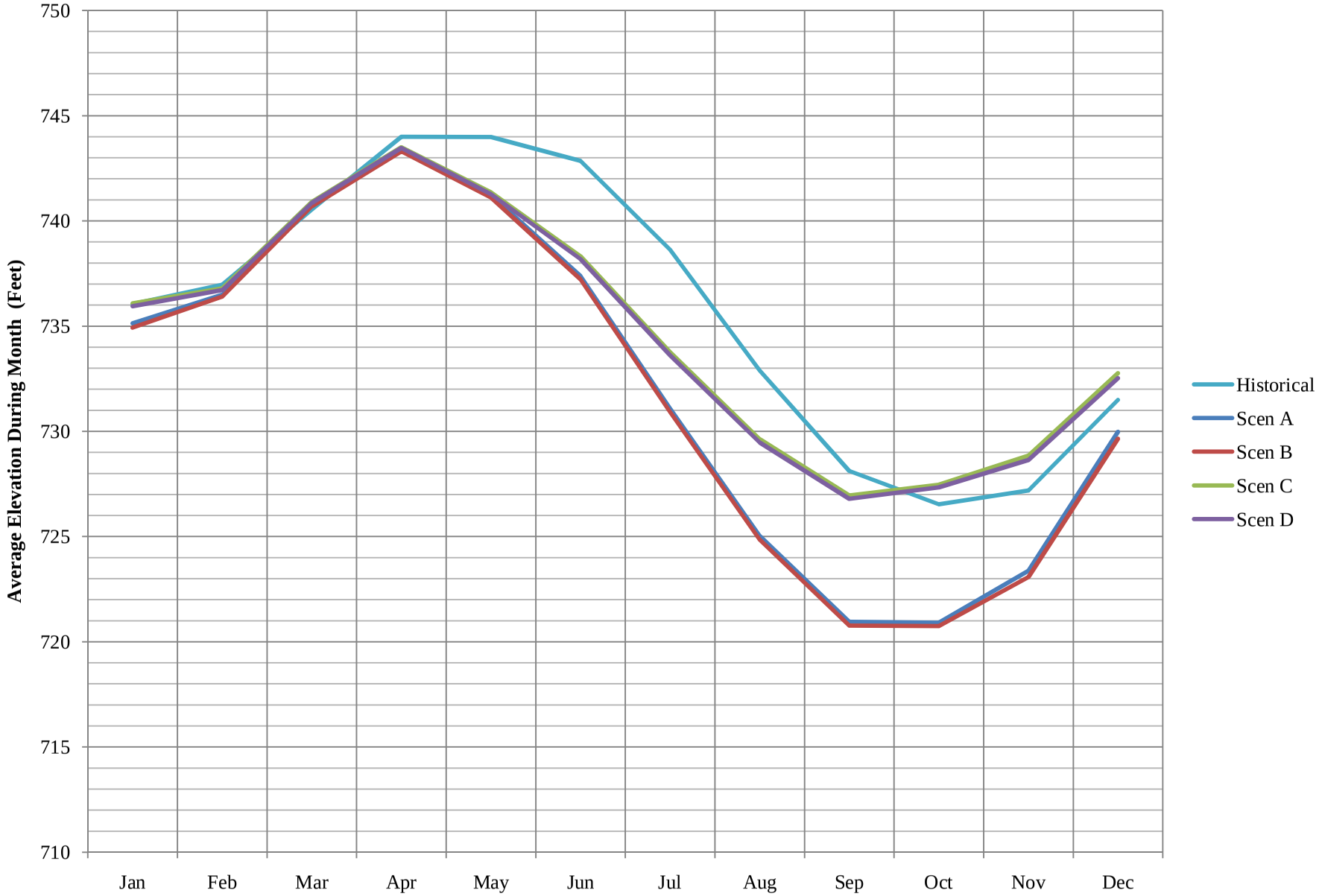


Table 1

Projected Total Annual Diversion
Pursuant to Permit 12952 (Application 15704)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Avg. Monthly Water Use (%)	4.9%	4.4%	5.1%	6.2%	9.2%	11.5%	13.9%	13.7%	11.6%	9.0%	5.6%	5.0%	100.0%
Diversion Rate (cfs)	7.1	6.3	7.4	8.9	13.2	16.5	20	19.6	16.7	12.9	8.1	7.2	--
Diversion Volume (af)	435	349	452	528	811	980	1,230	1,206	994	793	479	444	8,700

Table 2 - Estimated Annual Depletion

	Action	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Note
a	Pumped from Aquifer (% of annual use)	4.9%	4.4%	5.1%	6.2%	9.2%	11.5%	13.9%	13.7%	11.6%	9.0%	5.6%	5.0%	100.0%	
b	Pumping Effect on River	24.8%	4.4%	5.1%	6.2%	9.2%	0.0%	0.0%	0.0%	0.0%	0.0%	25.5%	24.9%	100.0%	Jun-Oct delayed to Nov-Jan
c	Indoor Use (% of annual use)	4.9%	4.4%	4.9%	4.9%	4.9%	4.9%	4.9%	4.9%	4.9%	4.9%	4.9%	4.9%	58.6%	'a' in January
d	Indoor Use Return to River (% of annual use)	12.3%	4.4%	4.9%	4.9%	4.9%	0.0%	0.0%	0.0%	0.0%	0.0%	12.3%	12.3%	56.1%	Jun-Oct delayed to Nov-Jan; 10% loss in perc ponds
e	Outdoor Use (% of annual use)	0.0%	0.0%	0.2%	1.2%	4.2%	6.5%	9.0%	8.7%	6.7%	4.0%	0.7%	0.1%	41.4%	a - c
f	Outdoor Use Return to Aquifer (% of annual use)	1.7%	0.0%	0.0%	0.2%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	2.4%	1.8%	6.9%	15% return flow; Jun-Oct delayed to Nov-Jan
g	Depletion to River (% of annual use)	10.7%	0.0%	0.2%	1.1%	3.6%	0.0%	0.0%	0.0%	0.0%	0.0%	10.7%	10.7%	37.0%	b - d - f

TABLE 3

Historical Potter Valley PowerHouse Import to East Fork of the Russian River[1]

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
1961	15,810	18,001	18,570	18,175	16,336	18,466	17,829	17,504	10,781	6,025	6,130	17,236	180,865
1962	18,543	13,426	18,458	18,871	16,693	18,466	16,645	7,289	8,691	11,764	11,976	9,871	170,694
1963	16,941	18,319	18,415	18,397	16,759	16,066	17,514	17,254	11,563	10,808	11,585	10,959	184,578
1964	12,896	16,176	18,022	18,568	17,102	14,729	3,693	3,064	2,345	6,500	7,233	8,904	129,232
1965	16,498	18,146	15,536	18,496	16,878	9,346	17,291	17,623	10,880	11,726	12,164	15,568	180,154
1966	17,398	10,770	13,613	18,506	16,812	17,794	17,962	13,170	6,189	10,800	11,843	16,040	170,897
1967	18,821	17,317	18,794	18,826	16,907	17,798	17,716	17,859	16,482	16,996	17,272	17,302	212,089
1968	15,723	10,414	17,834	18,621	17,421	18,474	11,057	3,590	5,148	11,230	11,319	11,244	152,076
1969	16,657	17,638	17,907	17,745	16,019	17,770	16,802	17,438	13,471	11,292	11,522	15,838	190,098
1970	17,817	14,901	12,940	17,842	16,362	17,685	5,980	4,700	6,449	6,535	7,130	14,511	142,853
1971	16,850	15,956	18,772	18,687	17,110	18,740	16,556	17,855	13,554	4,558	2,284	6,666	167,587
1972	9,552	10,506	15,182	18,479	13,218	17,970	15,520	13,850	4,182	13,345	9,437	15,733	156,973
1973	16,727	17,787	12,268	16,810	16,796	16,869	18,144	13,713	6,945	7,380	7,273	14,785	165,499
1974	6,254	1,445	18,829	15,700	13,600	17,718	17,849	17,833	14,734	4,708	3,780	13,466	145,917
1975	17,240	17,158	16,318	15,529	14,247	17,100	16,284	16,173	11,469	7,011	6,509	15,870	170,910
1976	18,113	17,627	17,604	8,255	5,588	7,242	6,555	2,339	2,991	4,050	4,685	10,919	105,968
1977	15,945	15,654	7,270	3,285	512	1,436	253	838	1,201	1,583	1,450	577	50,005
1978	804	2,233	9,402	17,147	16,138	17,717	17,752	18,482	16,328	8,896	8,813	11,859	145,572
1979	14,530	17,423	7,186	12,210	16,626	18,240	17,112	18,538	9,418	8,466	8,432	16,415	164,595
1980	16,897	16,763	18,443	18,062	17,379	18,286	17,957	16,009	10,987	6,056	3,348	15,154	175,339
1981	17,421	13,184	14,273	11,379	16,636	17,653	11,703	7,962	7,835	6,700	5,169	11,342	141,257
1982	19,579	16,548	19,117	19,434	18,052	19,698	19,270	19,593	18,456	8,281	8,791	15,039	201,859
1983	9,616	13,018	17,354	19,282	17,649	19,482	18,806	18,667	15,931	15,374	14,876	3,420	183,474
1984	4,439	10,974	16,279	19,206	18,191	19,446	15,256	5,934	3,208	4,843	9,899	7,186	134,861
1985	18,770	18,126	18,437	18,861	17,227	19,414	12,107	2,749	5,809	9,163	7,725	16,705	165,093
1986	18,490	9,667	15,656	14,291	13,946	19,240	10,603	5,658	6,055	6,033	5,678	8,951	134,268
1987	17,933	7,591	5,248	5,383	12,044	17,929	6,952	5,568	4,800	5,578	4,544	4,017	97,586
1988	6,064	5,359	15,759	17,500	17,020	8,392	4,854	5,966	5,891	5,389	5,009	4,883	102,087
1989	4,877	8,333	17,933	17,867	12,758	17,963	17,971	11,964	5,401	6,030	5,893	6,311	133,301
1990	16,144	11,492	9,142	16,390	16,644	16,685	3,193	6,788	13,151	4,594	6,060	16,786	137,068
1991	19,123	14,587	4,897	2,202	2,497	16,203	18,248	15,069	8,382	8,210	5,667	7,363	122,447
1992	15,743	11,681	5,002	8,366	12,879	19,772	15,192	11,193	6,024	7,075	6,284	5,816	125,026
1993	8,406	8,589	13,734	16,806	16,423	19,835	19,055	19,420	17,322	9,812	6,897	14,658	170,958
1994	18,335	12,049	10,885	8,513	11,546	13,990	5,597	5,978	3,513	3,695	7,168	3,949	105,220
1995	5,092	5,568	3,721	3,557	5,308	3,160	5,770	6,460	5,320	5,336	5,135	5,486	59,913
1996	5,439	7,672	12,522	16,070	18,333	19,569	19,295	18,601	11,929	8,571	9,285	17,036	164,323
1997	17,201	11,621	16,465	13,113	11,429	9,969	6,936	6,357	6,676	6,308	8,118	9,648	123,842
1998	9,557	17,338	16,263	18,084	14,737	20,236	19,464	18,157	18,292	8,303	7,293	12,012	179,735
1999	17,746	17,058	17,433	11,586	9,894	18,000	12,072	12,054	7,496	6,601	6,631	8,113	144,683
2000	10,127	12,750	11,711	13,002	16,657	17,877	10,441	10,251	6,867	6,857	6,986	7,807	131,333
2001	9,527	11,054	2,862	3,933	3,293	7,094	11,582	6,250	4,717	3,106	2,916	3,437	69,770
2002	5,486	11,709	18,183	17,128	17,276	18,335	6,990	5,371	4,199	4,227	4,425	4,292	117,622
2003	5,159	6,189	7,917	7,914	13,960	16,225	15,297	17,405	9,318	7,686	7,946	13,331	128,347
2004	10,292	9,352	16,828	18,250	14,620	16,860	10,401	6,454	5,227	5,256	5,540	5,879	124,961
2005	6,292	6,827	11,766	16,092	14,420	14,419	12,972	9,555	8,688	7,337	6,952	6,738	122,058
2006	6,770	5,590	3,464	11,006	12,333	9,156	12,240	13,337	7,045	6,861	6,690	7,097	101,590
2007	10,586	2,646	8,153	9,701	6,605	4,312	3,227	5,026	5,098	5,478	5,133	4,409	70,376
2008	3,160	2,396	2,646	9,116	7,700	4,080	2,495	4,336	6,050	5,935	5,968	5,135	59,017
2009	3,828	2,608	2,555	2,428	1,521	4,796	3,001	5,336	5,693	5,760	5,786	4,518	47,830
Average	12,678	11,821	13,216	14,177	13,676	15,259	12,601	11,073	8,535	7,431	7,319	10,210	137,996

Notes:

Source: Water Year 1976-83, 1987-2009 USGS Gage #11471099

Water Year 1961-1975, 1984-86 estimated as USGS #11471000 reduced to reflect portion to Potter Valley Irrigation District

TABLE 4

Lake Mendocino Historical Inflows (acre-feet)

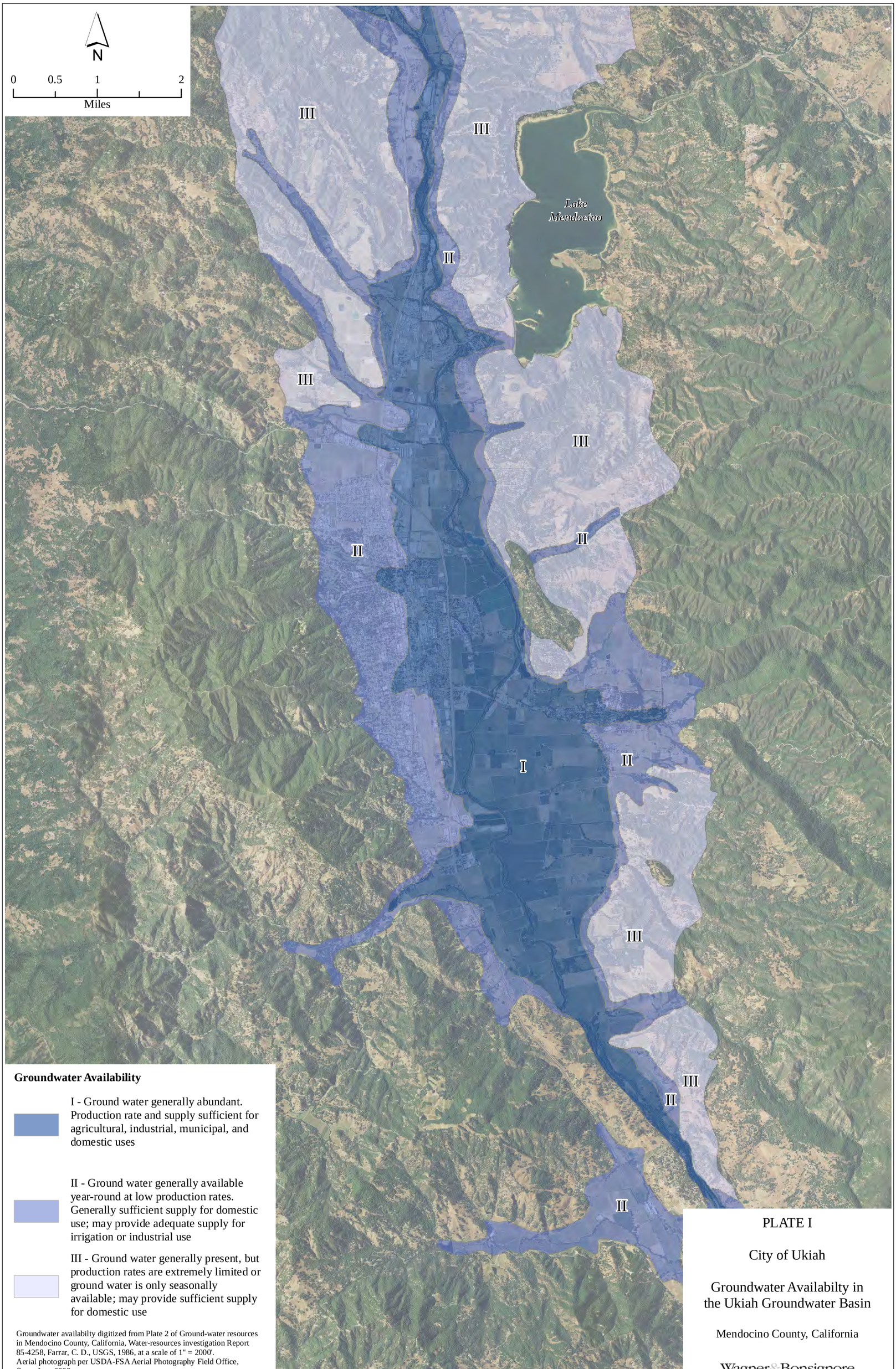
Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
1961	15,291	19,353	35,969	21,350	41,842	42,435	22,203	20,265	9,826	4,320	4,985	16,132	253,971
1962	17,572	14,573	26,744	23,752	47,408	43,770	20,896	7,835	7,942	10,217	10,630	8,803	240,140
1963	22,237	19,067	30,506	23,463	37,885	29,104	52,604	21,930	12,282	10,933	10,949	10,332	281,292
1964	12,984	26,918	19,950	37,988	20,182	17,477	5,252	3,437	1,478	4,538	5,865	8,172	164,242
1965	14,775	25,337	96,216	65,525	21,509	12,845	28,620	19,012	10,225	10,374	10,505	12,881	327,823
1966	15,652	15,517	19,055	53,211	32,595	24,258	19,752	12,554	5,106	10,253	11,421	15,894	235,267
1967	17,727	20,591	36,072	57,537	25,587	32,930	38,662	22,011	17,610	15,511	15,628	16,052	315,918
1968	14,920	10,306	19,006	38,010	36,419	29,417	14,027	4,923	3,354	10,824	12,266	11,782	205,255
1969	16,231	17,939	51,030	74,429	59,079	31,016	21,626	17,897	13,859	10,568	10,459	15,021	339,153
1970	17,677	15,279	35,955	110,638	33,783	27,946	9,350	5,778	5,816	5,651	6,651	14,093	288,615
1971	17,617	23,457	60,891	57,085	20,704	39,662	21,479	20,543	14,309	3,981	1,587	6,210	287,526
1972	9,243	11,687	23,838	28,255	23,586	26,599	19,936	14,519	3,677	10,780	9,755	14,694	196,569
1973	17,852	21,680	26,997	64,563	46,509	35,636	21,908	13,198	8,333	7,238	7,404	15,172	286,489
1974	7,525	21,212	51,285	58,690	30,369	58,767	43,072	22,183	16,003	5,960	4,259	15,079	334,404
1975	19,248	18,391	19,371	23,157	65,981	76,351	24,675	19,777	12,974	8,608	9,136	16,429	314,099
1976	18,938	19,262	19,958	10,469	14,061	16,023	11,157	3,586	2,660	3,447	5,709	11,171	136,441
1977	17,312	17,124	8,817	4,697	1,654	3,104	811	1,819	1,412	547	1,222	2,093	60,612
1978	1,785	4,659	25,052	84,933	57,155	44,674	36,534	22,035	16,386	7,625	7,988	11,738	320,563
1979	15,253	17,885	8,303	25,867	54,269	38,585	19,785	20,375	9,247	7,381	7,097	15,505	239,551
1980	19,688	29,925	34,350	67,522	55,677	38,063	24,560	19,200	12,312	7,684	5,417	16,082	330,481
1981	18,147	14,025	16,782	31,528	28,459	29,889	15,959	9,207	7,454	6,028	3,612	10,320	191,412
1982	19,482	47,749	61,721	52,842	50,875	43,841	67,869	20,926	17,913	8,398	8,797	15,781	416,194
1983	10,818	25,510	51,563	53,134	62,724	112,129	44,202	28,049	18,560	15,787	15,144	4,167	441,787
1984	6,042	36,889	64,059	25,595	31,587	30,199	20,140	8,583	8,053	4,637	9,634	6,843	252,262
1985	20,361	35,788	25,143	20,793	28,660	30,308	16,661	3,913	4,126	7,391	7,301	17,423	217,868
1986	19,488	13,266	22,340	33,747	107,186	56,230	15,327	6,968	5,590	5,375	4,871	9,529	299,917
1987	19,393	9,443	6,684	13,301	23,901	37,827	10,622	6,891	4,380	4,810	5,970	6,724	149,947
1988	9,021	7,859	36,899	51,859	20,886	9,503	7,295	8,426	7,260	6,357	5,808	5,314	176,486
1989	4,864	13,831	26,738	28,626	16,102	59,287	24,445	14,864	9,067	9,285	7,849	6,327	221,283
1990	17,756	12,302	10,148	26,232	28,398	23,824	3,719	8,287	13,644	2,860	4,314	16,465	167,949
1991	19,411	15,081	5,377	3,229	3,747	41,665	20,295	15,499	7,565	7,032	4,267	6,008	149,175
1992	15,912	13,387	5,937	10,407	37,181	29,397	17,415	13,091	6,895	8,301	7,099	6,835	171,856
1993	9,352	8,878	32,045	76,972	40,537	31,226	26,325	23,413	22,086	9,852	7,404	14,515	302,607

TABLE 4

Lake Mendocino Historical Inflows (acre-feet)

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
1994	17,483	11,377	12,708	13,240	24,540	15,761	6,891	6,661	3,382	3,765	7,170	3,642	126,619
1995	4,933	7,730	10,606	87,312	12,325	68,423	19,018	17,959	7,123	5,363	5,709	5,488	251,988
1996	6,672	8,868	27,981	56,439	43,506	38,539	26,529	22,209	13,238	10,419	10,084	16,866	281,352
1997	16,671	12,802	40,755	68,111	19,589	17,147	8,432	7,313	6,496	5,395	8,430	9,689	220,831
1998	9,560	20,743	27,412	77,942	112,566	41,776	38,403	27,251	24,105	12,803	13,117	12,921	418,600
1999	17,941	17,504	23,477	20,987	59,025	48,780	25,165	13,877	8,220	7,724	8,959	11,272	262,931
2000	13,496	13,922	10,929	22,784	56,849	35,179	13,567	12,442	8,575	7,851	8,789	7,115	211,499
2001	9,695	14,023	5,256	9,225	21,251	19,240	13,161	7,488	5,687	4,364	3,939	4,223	117,552
2002	2,231	19,670	53,382	43,203	27,640	25,024	8,957	6,795	5,794	5,209	5,635	5,427	208,968
2003	5,917	5,911	45,152	37,637	23,310	27,872	41,390	31,423	11,318	9,842	8,723	13,990	262,484
2004	11,084	9,069	44,426	38,623	62,514	25,807	12,944	8,715	8,414	8,210	6,200	4,899	240,906
2005	8,737	6,647	28,723	39,394	24,137	34,108	26,164	23,491	14,232	9,209	6,811	7,024	228,678
2006	7,736	8,662	76,141	63,188	35,447	59,848	53,910	20,434	10,261	6,938	6,343	6,803	355,711
Average	**13,733**	**16,980**	**30,908**	**42,119**	**37,591**	**36,119**	**22,646**	**14,501**	**9,657**	**7,601**	**7,628**	**10,629**	**250,115**
(cfs)	223	285	503	685	677	587	381	236	162	124	124	179	346

Source: USACE.


N
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1
2
Miles
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Mendocino
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I
II
III
III
II
II
Groundwater Availability
I - Ground water generally abundant. Production rate and supply sufficient for agricultural, industrial, municipal, and domestic uses
II - Ground water generally available year-round at low production rates. Generally sufficient supply for domestic use; may provide adequate supply for irrigation or industrial use
III - Ground water generally present, but production rates are extremely limited or ground water is only seasonally available; may provide sufficient supply for domestic use
Groundwater availabilty digitized from Plate 2 of Ground-water resources in Mendocino County, California, Water-resources investigation Report 85-4258, Farrar, C. D., USGS, 1986, at a scale of 1" = 2000'.
Aerial photograph per USDA-FSA Aerial Photography Field Office, flown June 2009.
PLATE I
City of Ukiah
Groundwater Availabilty in the Ukiah Groundwater Basin
Mendocino County, California
Wagner&Bonsignore
Consulting Civil Engineers, A Corporation
May 2011

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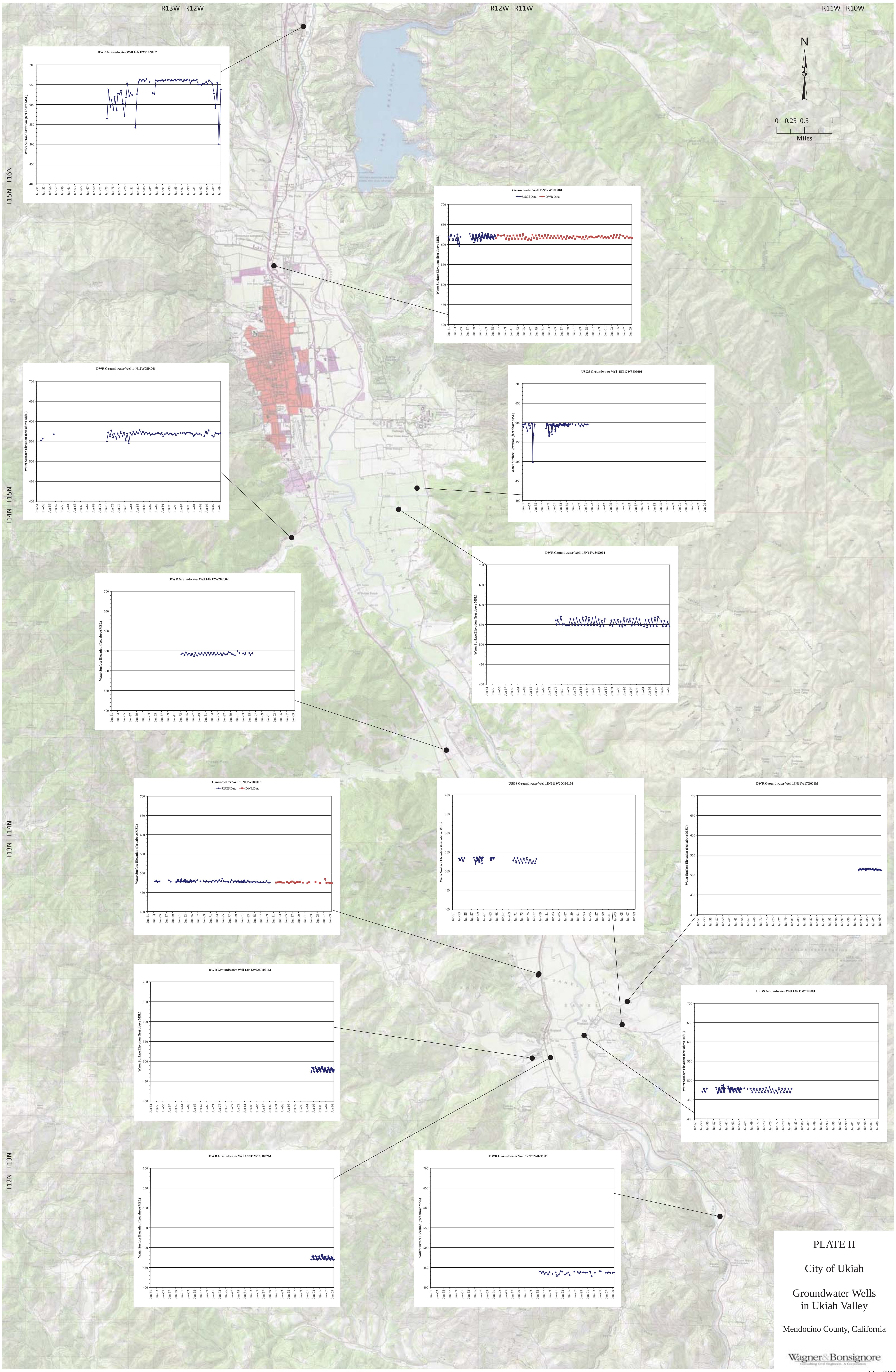
R13W R12W
R12W R11W
R11W R10W
T15N T16N
T14N T15N
T13N T14N
T12N T13N
N
0 0.25 0.5 1
Miles
DWR Groundwater Well 16N12W16N002
Groundwater Well 15N12W08L001
USGS Data
DWR Data
DWR Groundwater Well 14N12W05K001
USGS Groundwater Well 15N12W35M001
DWR Groundwater Well 15N12W34Q001
DWR Groundwater Well 14N12W26F002
Groundwater Well 13N11W18E001
USGS Groundwater Well 13N011W20G001M
DWR Groundwater Well 13N11W17Q001M
DWR Groundwater Well 13N12W24R001M
USGS Groundwater Well 13N11W19P001
DWR Groundwater Well 13N11W19H002M
DWR Groundwater Well 12N11W02F001
Water Surface Elevation (feet above MSL)

PLATE II

City of Ukiah

Groundwater Wells
in Ukiah Valley

Mendocino County, California

Wagner & Bonsignore
Consulting Civil Engineers, A Corporation

May 2011

Base map per USGS Quadrangles for Orrs Springs, Ukiah, Cow Mountain, Boonville, Elledge Peak, Purdys Garden, Ornbaun Valley, Yorkville, and Hopland.

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APPENDIX H

2014 Annual Water Quality Report

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ANNUAL WATER QUALITY REPORT

WATER TESTING PERFORMED IN 2014

Presented By

City of Ukiah

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

PWS ID#: CA2310003

2014 Executive Summary

The City of Ukiah, Public Works Department, Water Utility Division, is responsible for providing water to more than 5,000 connections. The water that we produce continues to consistently meet and exceed both State and Federal Standards for drinking water. The Water Division's ability to achieve this high standard is due to the ongoing monitoring our staff performs on the excellent sources of water available to the City of Ukiah.

The Water Division is currently in the process of redeveloping an existing groundwater well and developing a new groundwater source for our customers. This well development is in response to the drought situation of 2014 and will also benefit our rate payers by providing a much more cost-effective and reliable water source.

Throughout 2014, the Water Distribution Division made numerous repairs and upgrades to an aging distribution system. In doing this, the Distribution Division has helped to ensure a safe and sustainable means of delivering drinking water throughout the City of Ukiah. The Distribution Division's hard work and support of the Water Division continues to be instrumental in the operations exceptional drinking water standards delivered by the system.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or http://water.epa.gov/drink/hotline.

Substances That Could Be in Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (U.S. EPA) and the State Water Resources Control Board (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State Board regulations also establish limits for contaminants in bottled water that must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk.

Contaminants that may be present in source water include:

Microbial Contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;

Inorganic Contaminants, such as salts and metals, that can be naturally occurring or can result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

Pesticides and Herbicides, that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and which can also come from gas stations, urban stormwater runoff, agricultural applications, and septic systems;

Radioactive Contaminants, that can be naturally occurring or can be the result of oil and gas production and mining activities.

More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Where Does My Water Come From?

The City of Ukiah supplies its customers with water that is considered underflow from the Russian River as well as four groundwater sources. The amounts of water delivered from each source and when they are used, is dependent on both the demand on the system and the time of year. There are times of emergency when the City may have to purchase water from our neighboring water systems. These systems would be Millview County Water District and Willow County Water District.

Benefits of Chlorination

Disinfection, a chemical process used to control disease-causing microorganisms by killing or inactivating them, is unquestionably the most important step in drinking water treatment. By far, the most common method of disinfection in North America is chlorination.

Before communities began routinely treating drinking water with chlorine (starting with Chicago and Jersey City in 1908), cholera, typhoid fever, dysentery, and hepatitis A killed thousands of U.S. residents annually. Drinking water chlorination and filtration have helped to virtually eliminate these diseases in the U.S. Significant strides in public health are directly linked to the adoption of drinking water chlorination. In fact, the filtration of drinking water plus the use of chlorine is probably the most significant public health advancement in human history.

How chlorination works:

- Potent Germicide Reduction in the level of many disease-causing microorganisms in drinking water to almost immeasurable levels.
- Taste and Odor Reduction of many disagreeable tastes and odors like foul-smelling algae secretions, sulfides, and odors from decaying vegetation.
- Biological Growth Elimination of slime bacteria, molds, and algae that commonly grow in water supply reservoirs, on the walls of water mains, and in storage tanks.
- Chemical Removal of hydrogen sulfide (which has a rotten egg odor), ammonia, and other nitrogenous compounds that have unpleasant tastes and hinder disinfection. It also helps to remove iron and manganese from raw water.

Community Participation

Regularly scheduled Ukiah City Council meetings convene on the first and third Wednesdays of each month at 6 p.m. at the Ukiah Civic Center, 300 Seminary Avenue, Ukiah, CA. These meetings provide citizens with the opportunity to express concerns regarding the City's drinking water.

Lead in Home Plumbing

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We are responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Shelly Whyburn, Senior Water Treatment Plant Operator, at (707) 467-2842.

Source Water Assessment

In June 2001, the City of Ukiah completed a Source Water Assessment. This study considered the topography, type of vegetative cover, soil type, type of animal life, and climate conditions of our watershed. Combined with human-related recreation, industry, and lifestyle, several areas were considered to have influence on our raw waters. The influence was considered to be minimal and several areas of concern have been mitigated. These include the closing of the landfill, the replacement of leaking underground storage tanks, and bulk fuel containment. The City of Ukiah is continually upgrading its system and monitors for a variety of possible hazards. The City of Ukiah's water is still considered safe and reliable. The summary from that report is as follows.

Vulnerability Summary

According to the results of the vulnerability analysis, the surface water source is considered most vulnerable (vulnerability score* of 15) to the following activities not associated with any detected contaminants:

- Gas stations
- Historic gas stations
- Historic mining operations
- Wastewater treatment and disposal facilities
- Septic systems – high density (>1/acre)
- Plastic synthetic producers
- Historic waste dumps/landfills
- Confirmed leaking tanks
- Managed forests
- Chemical/petroleum processing/storage

The above list of PCAs includes several activities that can contaminate the drinking water source by releasing deleterious chemicals. Therefore, this list corroborates the conclusion in the 2001 Update Report of Watershed Sanitary Update (page 3): "The greatest potential threat of drinking water quality is that of a spill of deleterious material (e.g., petroleum products, hazardous or toxic substances) that could enter Lake Mendocino or the Russian River. The potential threat is great because the water treatment systems used by the City of Ukiah, the RVCWD, and the MCWD were not designed to remove these types of substances."

Further, the comparison of the above list of PCAs and that of "potential contaminant sources" delineated in the 2001 Update Report (page 2) shows that some activities appear in both lists: (1) wastewater treatment and (disposal) facilities, (2) septic systems – high density, and (3) releases from industrial activities. The category of "releases from industrial activities" in the 2001 Update Report list encompasses some specific activities in the PCAs list, including gas stations, historic gas stations, confirmed leaking tanks, plastic synthetic producers, and chemical/petroleum processing/storage. Other activities in the 2001 Update Report list also ranked high in the Vulnerability Score include septic systems – low density (vulnerability score of 13), grazing animals (13), non-body and body contact recreation (13), spills from traffic or railroad accidents (11), and pesticide/herbicide use in agriculture (11).

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*The drinking water source is considered Vulnerable to all PCAs with Vulnerability Score greater than or equal to 11 (California Drinking Water Source Assessment and Protection Program). The apparent discrepancies between the two lists, such as managed forests, historic mining operations, and historic waste dumps/landfills, may be attributable to the fact that surface protection zones were not established in this assessment.

Sampling Results

During the past year, the City of Ukiah has taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic or synthetic organic contaminants. The tables below show only those contaminants that were detected in the water. The State of California requires the City to monitor for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

We participated in the 3rd stage of the EPA's Unregulated Contaminant Monitoring Regulation (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if EPA needs to introduce new regulatory standards to improve drinking water quality.

REGULATED SUBSTANCES

				Surface Water		Distribution System		Groundwater			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2014	1	2	ND	NA	ND	NA	0.017[1]	ND–0.100[1]	No	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Chlorine (ppm)	2014	[4.0 (as Cl2)]	[4 (as Cl2)]	NA	NA	0.77	0.28–1.83	NA	NA	No	Drinking water disinfectant added for treatment
Fluoride (ppm)	2014	2.0	1	ND	NA	NA	NA	0.110	ND–0.150	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate [as nitrate] (ppm)	2014	45	45	ND	NA	2.4	NA	7.8	6.6–9.7	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Turbidity[2] (NTU)	2014	TT	NA	0.200	0.011–0.200	NA	NA	NA	NA	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2014	TT=95% of samples <0.3 NTU	NA	100	NA	NA	NA	NA	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	PHG (MCLG)	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2013	1.3	0.3	0.610	0/31	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	2013	15	0.2	2.8	0/31	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

SECONDARY SUBSTANCES

				Surface Water		Distribution System		Groundwater			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	PHG (MCLG)	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2014	500	NS	4.2	NA	6.2	NA	8.3	6.8–12	No	Runoff/leaching from natural deposits; seawater influence
Corrosivity (Units)	2014	Non-corrosive	NS	11	NA	11	NA	11.2	10.3–11.63	No	Natural or industrially-influenced balance of hydrogen, carbon and oxygen in the water; affected by temperature and other factors
Specific Conductance (micromhos)	2014	1,600	NS	210	NA	NA	NA	230	200–320	No	Substances that form ions when in water; seawater influence
Sulfate (ppm)	2014	500	NS	9.8	NA	11	NA	15.4	12–32	No	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	2014	1,000	NS	150	NA	170	NA	190	NA	No	Runoff/leaching from natural deposits
Turbidity (NTU)	2014	5	NS	0.054	0.011–0.200	0.172	0.012–0.950	0.061	0.017–1.100	No	Soil runoff

UNREGULATED AND OTHER SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Surface Water AMOUNT DETECTED	Surface Water RANGE LOW-HIGH	Distribution System AMOUNT DETECTED	Distribution System RANGE LOW-HIGH	Groundwater AMOUNT DETECTED	Groundwater RANGE LOW-HIGH
Bicarbonate (ppm)	2014	92	NA	120	NA	171.4	150–180
Calcium (ppm)	2014	17	NA	19	NA	26	21–30
Magnesium (ppm)	2014	9.7	NA	11	NA	15.7	13–18
Sodium (ppm)	2014	9.7	NA	15	NA	16.2	10–21
Total Alkalinity (ppm)	2014	75	NA	100	NA	141.4	120–150
Total Hardness (ppm)	2014	82	NA	93	NA	130.2	111–145

[1] Footnote for Groundwater: One groundwater source was sampled in 2013 and two others were sampled in 2012.

[2] Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

Distribution System Disinfection By-Products

TOTAL TRIHALOMETHANES (PPB)	MCL	2013 2ND QTR	2013 3RD QTR	2013 4TH QTR	2014 1ST QTR	2014 2ND QTR	2014 3RD QTR	2014 4TH QTR	SOURCE
Site #1	80	18.0	16.0	17.0	6.8	4.2	24.2	11.9	By-product of drinking water disinfection
Site #2	80	5.6	8.5	9.6	0.0	5.2	13.3	0.0	
Site #3	80	9.0	30.0	17.0	6.5	5.6	29.0	27.8	
Site #4	80	9.4	26.0	21.0	6.0	7.4	24.4	29.8	
Quarterly Average	80	10.5	20.0	16.0	4.8	5.5	22.8	17.5	
Running Annual Average	80	12.6	12.0	13.0	12.8	11.6	12.3	12.6	

TOTAL HALOACETIC ACIDS (PPB)	MCL	2013 2ND QTR	2013 3RD QTR	2013 4TH QTR	2014 1ST QTR	2014 2ND QTR	2014 3RD QTR	2014 4TH QTR	SOURCE
Site #1	80	5.5	7.8	7.4	1.8	0.0	10.0	5.4	By-product of drinking water disinfection
Site #2	80	0.0	3.6	3.9	0.0	0.0	12.4	0.0	
Site #3	80	0.0	13.0	7.4	1.3	0.0	11.0	13.4	
Site #4	80	0.0	10.0	8.3	3.0	1.0	8.0	10.0	
Quarterly Average	80	1.4	9.0	7.0	1.6	0.3	10.2	7.1	
Running Annual Average	80	5.2	5.0	4.0	4.8	4.5	4.5	4.8	

Definitions

AL (Regulatory Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs (SMCLs) are set to protect the odor, taste and appearance of drinking water.

MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. EPA.

micromhos: A measure of electrical conductance.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NS: No standard.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

PDWS (Primary Drinking Water Standard): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

PHG (Public Health Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California EPA.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.

APPENDIX I

Water Shortage Emergency Plan

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ARTICLE 11. WATER SHORTAGE EMERGENCY

3600: FINDINGS:

The City Council hereby finds and determines that the ordinary demands and requirements for water customers of the City may not, from time to time, be satisfied without depleting the water supply to the extent that there would be insufficient water for human consumption, sanitation, and fire protection. This ordinance is intended to prohibit any additional demands on the existing water supply, to prohibit all nonessential uses as defined herein, and to allocate the available water supply during any water shortage emergency to the end that sufficient water will be and remain available for human consumption, sanitation, and fire protection. (Ord. 691, §1, adopted 1977)

3601: DEFINITIONS:

For the purpose of this Article the following terms, phrases, words, and their derivations shall have the meaning given herein: The word "shall" is always mandatory and never directory.

A.Customer: The person using water supplied by the City.

B.Director: The Director of Public Works of the City or his designated representative.

C.Department: The Water Utilities Division of the Department of Public Works.

D.Hand-Watering: Water supplied to a customer through a hose connected to the customer's piping system while such hose is hand held and such water used for exterior purposes.

E.Irrigate: To water land, whether by channels, by flooding, by sprinkling, or any other means whatsoever except hand-watering.

F.Water: Only water supplied by the City unless expressly provided otherwise or required by the context. (Ord. 691, §1, adopted 1977)

3602: DECLARATION OF WATER EMERGENCY:

When it appears that the City may be unable to supply the normal demands and requirements of water customers, the City Council may, by resolution declare a water emergency. The resolution shall specify the degree of emergency existing and shall place into effect the appropriate provisions of this ordinance. (Ord. 691, §1, adopted 1977)

3603: REQUESTS FOR VOLUNTARY RESTRICTIONS OF WATER USE STAGE I:

Whenever the City Council, by resolution, declares Stage I water emergency to exist, the Mayor shall issue a proclamation urging citizens to institute such water conservation measures on a voluntary basis as may be required to reduce water demand to coincide with available supply. (Ord. 691, §1, adopted 1977)

3604: PROHIBITION OF NONESSENTIAL WATER USE STAGE II:

It is unlawful for any person to use water for any nonessential use as hereinafter defined, whenever the City Council determines by resolution that a Stage II water emergency exists. (Ord. 691, §1, adopted 1977)

3605: NONESSENTIAL USES DEFINED:

The following uses of water are nonessential:

A. Use of water from public hydrants for any purpose other than fire protection and/or prevention.

B. Use of water through any meter when the consumer had been given two (2) days notice to repair one or more leaks and has failed to complete such repairs.

C. Use of water by a golf course to irrigate any portion of its grounds except those areas designated as tees and greens; except where the Director shall have determined that any such use is nonessential and written notice of such determination shall have been provided.

D. Use of water to irrigate grass, lawns, ground cover, shrubbery, vegetable gardens, trees, or other outdoor vegetation.

E. Use of water for the construction of any structure, including such use in dust control.

F. Use of water to wash any sidewalk, walkways, driveway, street, parking lot, tennis court, or other hard surfaced area by hosing or by otherwise direct use of water from faucets or other outlets.

G. Use of water to wash any motor vehicle, trailer, airplane, or boat by hosing or otherwise using water directly from a faucet or other outlet.

H. Use of water to fill or refill any swimming pool.

I. Use of water to add to any swimming pool not equipped with and using a pool cover. (Ord. 691, §1, adopted 1977)

3606: FURTHER NONESSENTIAL USES DEFINED STAGE III:

In addition to the nonessential uses set forth in §3605, the following additional uses are determined to be nonessential when the Council has, by resolution declared a State III emergency.

A. Use of water in excess of the daily usage allotment hereinafter set forth:

Single family or duplex (100 cu. ft. per month)	50 gallons - per permanent resident
Multi-residential units (180 cu. ft. per month)	45 gallons - per permanent resident

B.All other uses not expressly set forth in §3605 shall be limited to fifty percent (50%) of the prior water use for a similar period as determined by the Department from its records. Where no such records exist, prior water use shall be deemed to be the average prior water use of similar existing services as shall be determined by the Department from its records.

C.Use of water to irrigate, the provisions of §3605 above to the contrary, notwithstanding.

D.Use of water for hand-watering. (Ord. 691, §1, adopted 1977)

3607: NUMBER OF PERMANENT RESIDENTS:

Each customer in whose name water is supplied to a residence shall upon request of the Director advise him under penalty of perjury the number of permanent residents using water supplied to that residence. If such a residential customer shall fail to so advise the Director, such residence shall be permitted the water allocation herein provided for one permanent resident. (Ord. 691, §1, adopted 1977)

3608: TAMPERING WITH WATER METERS PROHIBITED:

It is unlawful for any person to remove, replace, alter, damage, or otherwise tamper with any water meter or components thereof, including but not limited to the meter face, dials, or other water usage indicators, and any flow-restricting device installed thereon. (Ord. 691, §1, adopted 1977)

3609: VARIANCES:

The Director may:

A.Grant temporary variances for uses of water otherwise prohibited; or

B.Adjust temporarily any or all consumer's allotment if he finds and determines that due to unusual circumstances to fail to grant such a variance would cause an emergency condition affecting health, sanitation, or fire protection of the applicant or the public; further, he may grant such adjustment in the case of a mixed residential/nonresidential use if he finds that such adjustment is necessary to place an equivalent allotment burden on said applicant. The City Council shall ratify or revoke any such variance or adjustment at its next scheduled meeting.

No such variance or adjustment shall be retroactive or otherwise justify any violations of this ordinance occurring prior to issuance of said temporary variance or adjustment. (Ord. 691, §1, adopted 1977)

3610: VIOLATION OF WATER USE RESTRICTIONS; PUNISHMENT:

It is a misdemeanor for any person to use or apply water received from the City contrary to or in violation of any restriction or prohibition specified in the Article, except both the first and second violations of this ordinance within any one year period shall be infractions. Said punishment may be in lieu of or in addition to any other penalty or method of enforcement

provided by law. Any violation of this ordinance permitted to continue after notice, shall be a separate offense and shall be punishable as such hereunder; further, each day such violation continues shall be considered a separate offense. (Ord. 691, §1, adopted 1977)

3611: PURPOSE AND INTENT; STATUTORY CONSTRUCTION:

It is the purpose and intent of this ordinance to prohibit an increase in the water demand on the City's water supply, to eliminate all nonessential water usage, and to provide for allocation of existing water resources to insure sufficient water for human consumption, sanitation, and fire protection. This ordinance shall be liberally construed to effectuate such purpose and intent. (Ord. 691, §1, adopted 1977)

3612: REPAIR; REPLACEMENT:

Notwithstanding any other provisions of this ordinance, no restriction or prohibition is imposed upon the repair or replacement of existing water service facilities in a manner which the Director determines will not materially increase the consumption of water. (Ord. 691, §1, adopted 1977)

3613: ORDINANCE CONTROLLING:

The provisions of this ordinance shall prevail and control in the event of any inconsistency between this ordinance and any other rule, regulation, ordinance, or code of the City. (Ord. 691, §1, adopted 1977)

3614: WATER SERVICES TO BE DISCONNECTED:

Water may be shut off by the Department with appropriate notice whenever the Director determines there has been a willful failure to comply with the provisions of this ordinance, any other provisions of this code to the contrary, notwithstanding. Charges for reconnection or restoration of service which has been terminated pursuant to this Section shall be at the rates and on the conditions set by resolution. (Ord. 691, §1, adopted 1977)

3615: ENFORCEMENT; DESIGNATED PERSONS:

A. Each police officer of the City shall in connection with his duties imposed by law diligently enforce the provisions of this ordinance.

B. The Director and his designated employees shall have the duty and are hereby authorized to enforce the provisions of this ordinance. (Ord. 691, §1, adopted 1977)

3616: SEVERABILITY CLAUSE:

If any section, subsection, sentence, clause, or phrase of this ordinance is for any reason held to be unconstitutional, such decision shall not affect the remaining portions of this ordinance. The City Council declares that it would have passed this ordinance and each section, subsection, sentence, clause, and phrase thereof irrespective of the fact that any one or more such provisions be declared unconstitutional. (Ord. 691, §1, adopted 1977)

Urgency Ordinance

This ordinance is hereby declared to be necessary for the immediate preservation of the public peace, health, and safety and will take effect and be in force upon its adoption by a fourth-fifths (4/5) vote of the members of the Ukiah City Council. Due to severe drought conditions existing in the area from which the City draws its water supply, it is imperative that this ordinance become effective immediately to protect existing water supplies for human consumption, sanitation, and fire protection. The City Council of the City further declares that if normal water usage were permitted to continue, the available water supply would be depleted below the safe level for human consumption, sanitation, and fire protection. This ordinance shall be published in accordance with law within ten days after its adoption. (Ord. 691, §2, adopted 1977)

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APPENDIX J

Water Shortage Emergency Ordinance and Resolution

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City of Ukiah

13b

MEETING DATE: August 6, 2014

AGENDA SUMMARY REPORT

SUBJECT: ADOPT AN URGENCY ORDINANCE OF THE CITY COUNCIL OF THE CITY OF UKIAH AMENDING SECTIONS 3603 AND 3605 IN DIVISION 4, ARTICLE 11 OF THE UKIAH CITY CODE CONCERNING STAGE I AND STAGE II WATER EMERGENCIES AND ADOPT A RESOLUTION DECLARING A STAGE I WATER EMERGENCY

Background: On July 15, 2014, the State Water Resources Control Board (SWRCB) approved emergency water conservation regulations that impose direct restrictions on water use and require urban water suppliers, such as the City, to impose mandatory restrictions on outdoor irrigation. The regulations (Attachment 1), as imposed by the State, are effective on July 28, 2014 and urban water suppliers have 30 days to comply.

The City of Ukiah has been in a voluntary conservation state adopted by the City Council in 2009. This voluntary state is currently in the Ukiah Municipal Code (UMC) as section 3603 REQUEST FOR VOLUNTARY RESTRICTIONS OF WATER USE STAGE I (Stage I).

Discussion: The Regulations by the SWRCB require that urban water suppliers "shall implement all requirements and actions of the stage of its water shortage contingency plan that imposes mandatory restrictions on outdoor irrigation of ornamental landscapes or turf with potable water. Under the City's Water Emergency Ordinance, to comply with the SWRCB emergency water conservation regulation, the City would have to declare a Stage II water emergency which would ban all outdoor irrigation. The SWRCB emergency water conservation regulation does not require a complete ban on outdoor irrigation, a complete ban is not currently necessary in Ukiah for conservation purposes, and a complete ban would cause substantial and unnecessary damage to public and private landscaping, community gardens, parks and recreational facilities.

In order to comply with the State's regulations staff is recommending changing the city's Water Emergency Ordinance. The changes are included in the proposed ordinance (Attachment 2). The summary of changes recommended to the ordinance is as follows:

Section 3603 (Stage 1) Eliminate all existing verbiage regarding voluntary restrictions and make this stage compliant with what the SWRCB is requiring which include:

(Continues on Page 2)

Recommended Action: 1) Adopt an urgency ordinance of the City Council of The City of Ukiah amending Sections 3603 and 3605 in Division 4, Article 11 of the Ukiah City Code Concerning Stage I and stage II Water Emergencies **2)** Adopt a resolution declaring a Stage I water emergency.

Alternative Council Option(s): N/A

Citizens advised:	N/A
Requested by:	Tim Eriksen, Director of Public Works/City Engineer
Prepared by:	Tim Eriksen, Director of Public Works/City Engineer and David Rapport, City Attorney
Coordinated with:	Jane Chamber, City Manager
Attachments:	1) Emergency Regulation Action by SWRCB 2) Urgency Ordinance amending Sections 3603 and 3605 in Division 4, Article 11 3) Resolution declaring a Stage I water emergency 4) Existing Water Emergency Ordinance

Approved: Jane Chambers, City Manager

- The application of potable water to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures;
- Broadcast (non-drip) irrigation from sunup to sundown and more frequently than (i) every other day or (ii) more than four days per week and at a rate that causes ponding or puddling in the irrigated area;
- Drip irrigation at a rate that causes ponding or puddling in the irrigated area.
- The use of a hose that dispenses potable water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use;
- The application of potable water to driveways and sidewalks; and
- The use of potable water in a fountain or other decorative water feature except where the water is part of a recirculating system.

In anticipation of the drought continuing staff also reviewed Stage II of the same ordinance. Though this was not required by the SWRCB. The change below is recommended.

3605 NONESSENTIAL USES DEFINED (as related to Stage II) Edit subsection D. to include the italicized portion below

- D. Use of water to irrigate grass, lawns, ground cover, shrubbery, vegetable gardens, trees, or other outdoor vegetation *unless drip irrigation is used.*

In order to comply with the proposed ordinance and the State Water Code a resolution should be adopted declaring a Stage I Water Emergency. A Resolution is attached (Attachment 3) for the Council's review. Also attached is the current Water Emergency Ordinance for the readers information (Attachment 4). The Director of Public Works will continue the drought updates at the beginning of each City Council meeting to keep the council and the public informed and aware of our water situation.

This item will need to be continued to a date certain because the resolution and the State Code require a 4/5 vote to approve.

Fiscal Impact:

☐ Budgeted FY 14/15	☐ New Appropriation	☒ Not Applicable	☐ Budget Amendment Required

Amount Budgeted	Source of Funds (title and #)	Account Number	Addit. Appropriation Requested
$0			

State of California
Office of Administrative Law

In re: **State Water Resources Control Board**	**NOTICE OF APPROVAL OF EMERGENCY REGULATORY ACTION**
Regulatory Action:	
Title 23, California Code of Regulations	**Government Code Sections 11346.1 and 11349.6**
Adopt sections: 863, 864, 865 **Amend sections:** **Repeal sections:**	**OAL File No. 2014-0718-01 E**

The State Water Resources Control Board (Board) submitted this emergency action to adopt three sections and a new article in title 23 of the California Code of Regulations pertaining to drought emergency water conservation. The proposed action addresses severe impacts on California's water supplies and its ability to meet all water demands in the state due to the current drought, which was declared to be a state of emergency by Governor Brown in two executive orders issued in 2014. The second executive order, issued April 25, 2014, directed the Board to adopt emergency regulations, pursuant to Water Code section 1058.5, to ensure that urban water suppliers implement drought response plans to limit outdoor irrigation and other wasteful water practices.

OAL approves this emergency regulatory action pursuant to sections 11346.1 and 11349.6 of the Government Code.

This emergency regulatory action is effective on 7/28/2014 and, pursuant to section 1058.5 of the Water Code, will expire on 4/25/2015. The Certificate of Compliance for this action is due no later than 4/24/2015.

Date: 7/28/2014

Richard L. Smith
Richard L. Smith
Senior Attorney

For: DEBRA M. CORNEZ
Director

Original: Thomas Howard
Copy: Carlos Mejia

STATE OF CALIFORNIA—OFFICE OF ADMINISTRATIVE LAW

NOTICE PUBLICATION/REGULATION SUBMISSION — EMERGENCY (See instructions on reverse)

STD. 400 (REV. 01-2013)

For use by Secretary of State only

ENDORSED FILED IN THE OFFICE OF THE SECRETARY OF STATE
2014 JUL 28 PM 1:30
DEBRA BOWEN
SECRETARY OF STATE

OAL FILE NUMBERS	NOTICE FILE NUMBER	REGULATORY ACTION NUMBER	EMERGENCY NUMBER
	Z-		2014-0718-01E

For use by Office of Administrative Law (OAL) only

2014 JUL 18 PM 12:09
OFFICE OF ADMINISTRATIVE LAW

NOTICE | REGULATIONS

AGENCY WITH RULEMAKING AUTHORITY: State Water Resources Control Board

AGENCY FILE NUMBER (If any):

A. PUBLICATION OF NOTICE (Complete for publication in Notice Register)

1. SUBJECT OF NOTICE	TITLE(S)	FIRST SECTION AFFECTED	2. REQUESTED PUBLICATION DATE
Drought Emergency Water Conservation	23	863	

3. NOTICE TYPE	4. AGENCY CONTACT PERSON	TELEPHONE NUMBER	FAX NUMBER (Optional)
[X] Notice re Proposed Regulatory Action [ ] Other	Carlos Mejia	(916) 341-5184	(916) 341-5199

OAL USE ONLY	ACTION ON PROPOSED NOTICE	NOTICE REGISTER NUMBER	PUBLICATION DATE
	[ ] Approved as Submitted [ ] Approved as Modified [ ] Disapproved/Withdrawn		

B. SUBMISSION OF REGULATIONS (Complete when submitting regulations)

1a. SUBJECT OF REGULATION(S): Drought Emergency Water Conservation

1b. ALL PREVIOUS RELATED OAL REGULATORY ACTION NUMBER(S):

2. SPECIFY CALIFORNIA CODE OF REGULATIONS TITLE(S) AND SECTION(S) (Including title 26, if toxics related)

SECTION(S) AFFECTED (List all section number(s) individually. Attach additional sheet if needed.)

ADOPT: 863, 864, 865

AMEND:

TITLE(S): 23 per 7/18/14

REPEAL:

3. TYPE OF FILING

- [ ] Regular Rulemaking (Gov. Code §11346)
- [ ] Resubmittal of disapproved or withdrawn nonemergency filing (Gov. Code §§11349.3, 11349.4)
- [ ] Certificate of Compliance: The agency officer named below certifies that this agency complied with the provisions of Gov. Code §§11346.2-11347.3 either before the emergency regulation was adopted or within the time period required by statute.
- [ ] Emergency Readopt (Gov. Code, §11346.1(h))
- [ ] File & Print
- [ ] Changes Without Regulatory Effect (Cal. Code Regs., title 1, §100)
- [ ] Print Only
- [X] Emergency (Gov. Code §11346.1(b))
- [ ] Resubmittal of disapproved or withdrawn emergency filing (Gov. Code, §11346.1)
- [X] Other (Specify) Emergency (Wat. Code, §1058.5) per agency request RS

4. ALL BEGINNING AND ENDING DATES OF AVAILABILITY OF MODIFIED REGULATIONS AND/OR MATERIAL ADDED TO THE RULEMAKING FILE (Cal. Code Regs. title 1, §44 and Gov. Code §11347.1)

5. EFFECTIVE DATE OF CHANGES (Gov. Code, §§ 11343.4, 11346.1(d); Cal. Code Regs., title 1, §100)

- [ ] Effective January 1, April 1, July 1, or October 1 (Gov. Code §11343.4(a))
- [X] Effective on filing with Secretary of State
- [ ] §100 Changes Without Regulatory Effect
- [ ] Effective other (Specify)

6. CHECK IF THESE REGULATIONS REQUIRE NOTICE TO, OR REVIEW, CONSULTATION, APPROVAL OR CONCURRENCE BY, ANOTHER AGENCY OR ENTITY

- [X] Department of Finance (Form STD. 399) (SAM §6660) per request RS
- [ ] Fair Political Practices Commission
- [ ] State Fire Marshal
- [ ] Other (Specify)

7. CONTACT PERSON	TELEPHONE NUMBER	FAX NUMBER (Optional)	E-MAIL ADDRESS (Optional)
Carlos Mejia	(916) 341-5184	(916) 341-5199	carlos.mejia@waterboards.ca.gov

8. **I certify that the attached copy of the regulation(s) is a true and correct copy of the regulation(s) identified on this form, that the information specified on this form is true and correct, and that I am the head of the agency taking this action, or a designee of the head of the agency, and am authorized to make this certification.**

SIGNATURE OF AGENCY HEAD OR DESIGNEE: [signature] DATE: 7-17-2014

TYPED NAME AND TITLE OF SIGNATORY: Caren Trgovcich, Chief Deputy Director, State Water Resources Control Board

For use by Office of Administrative Law (OAL) only

ENDORSED APPROVED
JUL 28 2014
Office of Administrative Law

PROPOSED TEXT OF EMERGENCY REGULATIONS

Article 22.5. Drought Emergency Water Conservation.

Section 863. Findings of Drought Emergency.

(a) The State Water Resources Control Board finds as follows:

(1) On January 17, 2014, the Governor issued a proclamation of a state of emergency under the California Emergency Services Act based on drought conditions;

(2) On April 25, 2014, the Governor issued a proclamation of a continued state of emergency under the California Emergency Services Act based on continued drought conditions;

(3) The drought conditions that formed the basis of the Governor's emergency proclamations continue to exist;

(4) The present year is critically dry and has been immediately preceded by two or more consecutive below normal, dry, or critically dry years; and

(5) The drought conditions will likely continue for the foreseeable future and additional action by both the State Water Resources Control Board and local water suppliers will likely be necessary to further promote conservation.

Note:
Authority: Section 1058.5, Water Code.
Reference: Sections 102, 104 and 105, Water Code.

Section 864. Prohibited Activities in Promotion of Water Conservation.

(a) To promote water conservation, each of the following actions is prohibited, except where necessary to address an immediate health and safety need or to comply with a term or condition in a permit issued by a state or federal agency:

(1) The application of potable water to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures;

(2) The use of a hose that dispenses potable water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use;

(3) The application of potable water to driveways and sidewalks; and

(4) The use of potable water in a fountain or other decorative water feature, except where the water is part of a recirculating system.

(b) The taking of any action prohibited in subdivision (a) of this section, in addition to any other applicable civil or criminal penalties, is an infraction, punishable by a fine of up to five hundred dollars ($500) for each day in which the violation occurs.

Note:
Authority: Section 1058.5, Water Code.
Reference: Sections 102, 104 and 105, Water Code.

Section 865. Mandatory Actions by Water Suppliers.

(a) The term "urban water supplier," when used in this section, refers to a supplier that meets the definition set forth in Water Code section 10617, except it does not refer to

suppliers when they are functioning solely in a wholesale capacity, but does apply to suppliers when they are functioning in a retail capacity.

(b)(1) To promote water conservation, each urban water supplier shall implement all requirements and actions of the stage of its water shortage contingency plan that imposes mandatory restrictions on outdoor irrigation of ornamental landscapes or turf with potable water.

(2) As an alternative to subdivision (b)(1), an urban water supplier may submit a request to the Executive Director for approval of an alternate plan that includes allocation-based rate structures that satisfies the requirements of chapter 3.4 (commencing with section 370) of division 1 of the Water Code, and the Executive Director may approve such an alternate plan upon determining that the rate structure, in conjunction with other measures, achieves a level of conservation that would be superior to that achieved by implementing limitations on outdoor irrigation of ornamental landscapes or turf with potable water by the persons it serves to no more than two days per week.

(c) To promote water conservation, each urban water supplier that does not have a water shortage contingency plan or has been notified by the Department of Water Resources that its water shortage contingency plan does not meet the requirements of Water Code section 10632 shall, within thirty (30) days, limit outdoor irrigation of ornamental landscapes or turf with potable water by the persons it serves to no more than two days per week or shall implement another mandatory conservation measure or measures intended to achieve a comparable reduction in water consumption by the persons it serves relative to the amount consumed in 2013.

(d) In furtherance of the promotion of water conservation each urban water supplier shall prepare and submit to the State Water Resources Control Board by the 15th of each month a monitoring report on forms provided by the Board. The monitoring report shall include the amount of potable water the urban water supplier produced, including water provided by a wholesaler, in the preceding calendar month and shall compare that amount to the amount produced in the same calendar month in 2013. Beginning October 15, 2014, the monitoring report shall also estimate the gallons of water per person per day used by the residential customers it serves. In its initial monitoring report, each urban water supplier shall state the number of persons it serves.

(e) To promote water conservation, each distributor of a public water supply, as defined in Water Code section 350, that is not an urban water supplier shall, within thirty (30) days, take one or more of the following actions:

(1) Limit outdoor irrigation of ornamental landscapes or turf with potable water by the persons it serves to no more than two days per week; or

(2) Implement another mandatory conservation measure or measures intended to achieve a comparable reduction in water consumption by the persons it serves relative to the amount consumed in 2013.

Note:
Authority: Section 1058.5, Water Code.
Reference: Sections 102, 104, 105, 350, 10617 and 10632, Water Code.

ORDINANCE NO.

URGENCY ORDINANCE OF THE CITY COUNCIL OF THE CITY OF UKIAH AMENDING SECTIONS 3603 AND 3605 IN DIVISION 4, ARTICLE 11 OF THE UKIAH CITY CODE CONCERNING STAGE I AND STAGE II WATER EMERGENCIES

The City Council of the City of Ukiah hereby ordains as follows:

SECTION ONE

Sections 3603 and 3605 of the Ukiah City Code are hereby amended to read as follows:

§3603 RESTRICTIONS OF WATER USE STAGE I

Whenever the City Council, by resolution, declares Stage I water emergency to exist to promote water conservation, each of the following actions is prohibited, unlawful and a violation of this Code, except where necessary to address an immediate health and safety need or to comply with a term or condition in a permit issued by a state or federal agency or when an alternate irrigation plan, that demonstrates equal or greater savings, as approved by Public Works;

The application of potable water to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures;

Broadcast (non-drip) irrigation from sunup to sundown and more frequently than (i) every other day or (ii) more than four days per week and at a rate that causes ponding or puddling in the irrigated area;

Drip irrigation at a rate that causes ponding or puddling in the irrigated area.

The use of a hose that dispenses potable water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use;

The application of potable water to driveways and sidewalks; and

The use of potable water in a fountain or other decorative water feature except where the water is part of a recirculating system.

§3605 NONESSENTIAL USES DEFINED

The following uses of water are nonessential:

A. Use of water from public hydrants for any purpose other than fire protection and/or prevention.

B. Use of water through any meter when the consumer had been given two (2) days' notice to repair one or more leaks and has failed to complete such repairs.

C. Use of water by a golf course to irrigate any portion of its grounds except those areas designated as tees and greens; except where the Director shall have determined that any such use is nonessential and written notice of such determination shall have been provided.

D. Use of water to irrigate grass, lawns, ground cover, shrubbery, vegetable gardens, trees, or other outdoor vegetation unless drip irrigation is used.

E. Use of water for the construction of any structure, including such use in dust control.

F. Use of water to wash any sidewalk, walkways, driveway, street, parking lot, tennis court, or other hard surfaced area by hosing or by otherwise direct use of water from faucets or other outlets.

G. Use of water to wash any motor vehicle, trailer, airplane, or boat by hosing or otherwise using water directly from a faucet or other outlet.

H. Use of water to fill or refill any swimming pool.

I. Use of water to add to any swimming pool not equipped with and using a pool cover.

SECTION TWO

1. **CEQA COMPLIANCE.** The adoption of this Ordinance is categorically exempt from the provisions of the California Environmental Quality Act.

2. **SEVERABILITY.** If any provision of this ordinance or the application thereof to any person or circumstance is held invalid, the remainder of the ordinance and the application of such provision to other persons or circumstances shall not be affected thereby. The City Council hereby declares that it would have adopted this Ordinance and any section, subsection, sentence, clause or phrase thereof irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be declared unconstitutional or otherwise invalid.

SECTION THREE. URGENCY ORDINANCE

This ordinance is hereby declared to be necessary for the immediate preservation of the public peace, health, and safety and will take effect and be in force upon its adoption by a fourth-fifths (4/5) vote of the members of the Ukiah City Council. The facts constituting the urgency are as follows:

1. Governor Edmund G. Brown Jr. issued "A Proclamation of A Continued State of Emergency", dated April 25, 2014, proclaiming the water shortage in the State of California as a state of emergency and ordering immediate action to manage the crisis.

2. The State Water Resources Control Board (SWRCB) posted curtailment projections which could take effect by May 15, 2014. It was projected that by May 15th, all post-1914 appropriative rights may be curtailed. Between June 15th and July 15th, the projected water supply may not be sufficient to meet all riparian and/or pre-1914 demand. The remaining supply of natural flow must be shared among all riparian users.

3. On May 27, 2014, the SWRCB issued an order curtailing all diversions from the Upper Russian River by appropriators under appropriative water rights permits with a priority date of February 19, 1954 or later. The order did not curtail the City's rights under its appropriative water rights permit or its pre-1914 water rights, but the notice did warn that if ". . . . current conditions persist, the State Water Board may curtail all remaining senior post-1914, riparian or pre-1914 water right holders located downstream of a major reservoir operation which is releasing water from storage . . ."

4. On July 16, 2014, the California Office of Administrative Law approved emergency curtailment regulations adopted by the SWRCB which empower the Deputy Director for the Division of Water Rights to issue curtailment orders to post -1914 appropriative water right holders in order of water right priority when water is not available under the diverter's priority of right.

5. On July 15, 2014, the SWRCB approved emergency water conservation regulations that impose direct restrictions on water use and require urban water suppliers, such as the City, to impose mandatory restrictions on outdoor irrigation.

6. Under the City's Water Emergency Ordinance, to comply with the SWRCB emergency water conservation regulation, the City would have to declare a Stage II water emergency which would ban all outdoor irrigation. The SWRCB emergency water conservation regulation does not require a complete ban on outdoor irrigation, a complete ban is not currently necessary in Ukiah for conservation purposes, and a complete ban would cause substantial and unnecessary damage to public and private landscaping, community gardens, parks and recreational facilities.

7. In order to comply with the SWRCB emergency regulation on water conservation and to prevent unnecessary damage to public and private property while conserving water for the remainder of the dry summer water season, it is essential that this ordinance be adopted as an urgency ordinance to protect the public health, safety and welfare.

Adopted on August 6, 2014, by the following roll call vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

_____
Philip E. Baldwin, Mayor

ATTEST:

_____
Kristine Lawler, City Clerk

RESOLUTION NO. 2014-

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF UKIAH DECLARING A STAGE I MANDATORY WATER CONSERVATION EMERGENCY

WHEREAS:

1. Under Water Code Section 350 and Ukiah City Code ("UCC") Section 3602, the City Council may declare by resolution a water shortage emergency whenever it appears that the City may not be able to supply the normal demands and requirements of water customers; and

2. The resolution shall declare the degree of emergency existing and shall place into effect the appropriate provisions of Division 4, Article 11 of the UCC ("Water Emergency Ordinance"); and

3. The extreme drought conditions currently in effect and the emergency regulations recently adopted by the State Water Resources Control Board (SWRCB) providing for emergency curtailment of water rights and mandatory water conservation measures require the declaration of a Stage I water shortage emergency under UCC Section 3603, as amended; and

4. The City is required to comply with the SWRCB emergency water conservation regulation by August 29, 2014;

NOW, THEREFORE, BASED ON THE FOREGOING FACTS, IT IS HEREBY RESOLVED:

1. Effective August 29, 2014, a Stage I water emergency is hereby declared by the City Council, which shall remain in effect until the Stage I emergency is terminated by City Council resolution.

2. The provisions of the Water Emergency Ordinance applicable in a Stage I water emergency are hereby placed into effect.

3. The City staff are directed to provide notice and public education concerning the requirements of a Stage I water emergency prior to August 29, 2014, and continuing thereafter.

PASSED AND ADOPTED this 6th day of August, 2014, by the following roll call vote:

AYES:
NOES:
PRESENT:
ABSTAIN:

_____
Philip E. Baldwin, Mayor

ATTESTED:

_____
Kristine Lawler, City Clerk

APPENDIX K

UWMP Adoption Resolution

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UWMP Adoption Resolution will be included with final report

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WEST YOST ASSOCIATES

City of Ukiah